Understanding Document Accessibility

# Understanding Document Accessibility

*A Reference for Creating Accessible Office Documents*

*DIGITAL EDUCATION STRATEGIES, THE CHANG SCHOOL*

# Contents

# Introduction

*Imagine that you are standing in front of a closed door. On the other side of that door is a world of information – news, entertainment, job listings, and updates from family and friends. You see other people enter that doorway, but you can't find a way to enter.*

*People with disabilities come up against locked doors in the digital world continually.* [1]

This site offers resources to help you create accessible documents. When you structure your documents correctly, you make your content easier for everyone to understand and use. The accessibility improvements that you implement – like adding alt text and using headings – have tangible benefits for users with or without disabilities.

Assistive technologies, such as screen readers, empower people with visual, auditory, or mobility impairments to be productive and purposeful. As content creators, we have a responsibility to add to this culture of inclusivity. By giving others access to content, we leave the door open for opportunities.

1. Adapted from [Enabling Access Through Web Renewal: Handbook (PDF)](), Wilfred Laurier University.

*Photo by [Philipp Berndt](#) on [Unsplash](#)*

# How to Use This Resource

The techniques covered in this resource will help you create accessible office documents. We have taken the application-specific instructions developed by the [Accessible Digital Office Document (ADOD) Project](#) and updated it with revised instructions and screenshots, where needed. Featured throughout this resource are "Editor's note" boxes like the one below.

> **Editor's note:** When instructions diverge for later versions of an application, we've captured the updates in a featured box like this.

Review the techniques in the specific application sections and follow the steps to make your documents more accessible. Due to the nature of this reference document, we encourage you to use the online version of this resource.

Use the table of contents or the list of applications below to find the instructions you need.

> **Microsoft**
>
> [Microsoft Word 2013, 2016, and 2019](#)
> [Microsoft Word for Mac 2011, 2016, and 2019](#)
> [Microsoft Word 2010](#)
> [Microsoft Word 2008 for Mac](#)
> [Microsoft Word 2007](#)
>
> [Microsoft Excel 2010, 2013, 2016, and 2019](#)

[Microsoft Excel for Mac 2008, 2011, 2016, and 2019](#)
[Microsoft Excel 2007](#)

[Microsoft PowerPoint 2010, 2013, 2016, and 2019](#)
[Microsoft PowerPoint for Mac 2008, 2011, 2016, and 2019](#)
[Microsoft PowerPoint 2007](#)

**Google**

[Google Docs](#)
[Google Sheets](#)
[Google Slides](#)

**Apple iWork**

[Pages for Mac](#)
[Numbers for Mac](#)
[Keynote for Mac](#)

**OpenOffice/LibreOffice**

[OpenOffice Writer and LibreOffice Writer](#)
[OpenOffice Calc](#)
[OpenOffice Impress](#)

**Adobe Creative Suite**

[Adobe InDesign CS6 and CC](#)
[Adobe Acrobat 11 Pro and DC](#)
[Adobe Acrobat 10 Pro](#)
[Adobe Acrobat 9 Pro](#)

# Accessibility Statement

While we attempt to make all elements of this resource conform with international accessibility guidelines, we must acknowledge a few accessibility issues:

- Some external resources may not conform with accessibility guidelines.
- Third-party video content may not be captioned, or may be captioned poorly.
- The heading order for some headings do not conform to logical heading order.

## Accessibility Tips

- Links to other pages of the site will always open in the current window.
- Links to external sites will always open in a new window.
- Use your screen reader's list headings feature to navigate through the headings within the content of a page.
- Use the Previous and Next links found at the bottom of each page to navigate through the sequence of pages in the site. To access these links most easily, use your screen reader's landmarks list to navigate to the content info region, then press Shift+Tab to back up to the Next links.
- Depending on the operating system and browser being used, font size can be adjusted by pressing a key combination including the plus (+) and minus (-) keys. On Windows systems the key combination is typically "Ctrl+" and on Mac it is "Command+".

# Acknowledgements

# ABOUT DOCUMENT ACCESSIBILITY

# About Accessibility



*A sidewalk ramp*     *A pair of eyeglasses*     *Video with subtitles*

If you've used a sidewalk ramp, eyeglasses, or video subtitles, you've used assistive technology which aids with accessibility.

Accessibility, when it comes to digital content, is often compared to a sidewalk ramp or curb cut – it's a feature that ends up benefitting *all* people, not just those with mobility issues. As document authors, you need to be aware of the different types of abilities to plan for when creating accessible documents.

Here's a breakdown of the different barriers and how we can be inclusive:

- **Visual**
  - People with low or no vision.
  - Help them by structuring documents correctly.
- **Auditory**
  - People with low or no hearing.
  - Help them by adding captions and subtitles to your audio or video.
- **Mobility**
  - People with physical mobility impairments (or people using mobile devices).
  - Help them by making documents easy to navigate and scale.
- **Cognitive or Neurodivergent**
  - People with situational or developmental disabilities.
  - Help them by ensuring content is written in plain

language. [1]

Your primary task when making accessible documents is to ensure documents are structured correctly so that people assistive technologies can interact with your digital content. In order to do this, follow the techniques detailed in this resource.

The steps taken to ensure the accessibility of the documents that you create are often not laborious. In the end, it often makes the document easier for all to use.

1. To learn more, see Diverse Abilities and Barriers from W3C Web Accessibility Initiative.

# The Case Against PDFs



When converting your office documents to PDF for distribution, it's important to consider if PDF is the best choice. Compared to HTML, for example, PDF documents are harder to use and maintain. PDFs are useful in certain cases, like completing government forms, but be sure to understand the limitations of PDF files.[1]

Here's a summary of some problems with PDFs:

- **PDFs are not designed for reading on screens.** Unlike a responsive website that will allow content to resize to fit different devices and browsers, a PDF is static and not designed to be flexible in layout. Also, reading a PDF on smaller device may require additional scrolling (both horizontal and vertical) as well as zooming, which may be a frustrating user experience.
- **PDFs are harder to access.** Even if you create a fully accessible PDF (properly structured and tagged with alt text and so on), it's still possible that the PDF will not meet the accessibility

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1. Why GOV.UK Content Should Be Published in HTML and Not PDF - UK Government Digital Service. https://gds.blog.gov.uk/2018/07/16/why-gov-uk-content-should-be-published-in-html-and-not-pdf/.

needs of all users and the assistive technologies that they use. Providing content in HTML, for example, would allow users to copy and paste text easily. Users with low-vision would be able to to adjust text size and colour contrast in their browser settings to make content easier to read.

- **PDF use is harder to track and update.** If analytics are important to you, PDFs might not be the way to go. You can track the number of times that a PDF file is downloaded, but not which content was accessed most or which links were followed. If content is locked into a PDF, it may be harder to revise and less likely to be kept up-to-date.

Before choosing to distribute your content as a PDF, consider your audience and how they will use the content:

- Will they be downloading and using the PDF for offline use only? If so a PDF file is a viable option.
- Do you need to track how people use the content? Then, it may be easier to provide your content in HTML.
- Is the content robust and require special training to make the PDF accessible? It may be best to provide the content in several formats, not just PDF, to make it easier for users to read and use.

**We recommend considering HTML instead of or in addition to PDF where appropriate.** While PDF accessibility has improved over the years, accessibility support for PDF by authoring tools, viewers and assistive technologies (e.g., screen readers) is not as widespread as for HTML documents.

# AUTHORING TECHNIQUES FOR ACCESSIBLE OFFICE DOCUMENTS: WORD PROCESSING APPLICATIONS

# Google Docs

## Usage Notes

Google Docs lacks several features that enable accessible office document authoring, most notably, the ability to create complex accessible tables and a built-in accessibility checker.

While there is no accessibility checking feature built into Google Docs, you can install a third-party add-on called Grackle Docs. Grackle is a third-party plug-in that includes an accessibility checker along with other features that enhance accessibility on Google Docs (see Technique 11).

Due to the nature of Google Docs, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like a PDF file.

## What's an "Office Document"?

You should use these techniques when you are using Google Docs to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (i.e., reports, letters, memos,

budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

Google Docs does not have a default file format as it is a web-based authoring tool. Google Docs offers a number of word processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#):

- Microsoft Word (.docx)
- OpenDocument Format (.odt)
- Rich Text Format (.rtf)
- PDF (.pdf)
- Plain Text (.txt)
- Web Page (.html, zipped)
- EPUB Publication (.epub)

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language

is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. Files are easily saved as various file formats (see [Technique 12](#)).

> **Editor's note:** Since the content of this page has been heavily updated from the original article ([Authoring Techniques for Accessible Office Documents: Google docs: Documents](#)), the usual editor's notes that flag new content will be omitted. The application-specific steps and screenshots were updated in December 2019.

## Technique 1. Use Accessible Templates

Google Docs lacks support for some accessibility features, such as table headers that repeat. With this in mind, be cautious of

templates available in the Google Docs template gallery and be sure that they comply the techniques discussed here.

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see [Technique 11](#)).

Google Docs's default template for new documents is a blank page. The basic installation also includes a wide variety of templates ranging from blank business letters and memos to blank business cards and schedules. These are all accessible by virtue of being blank. It is possible to create your own templates from scratch in Google Docs. As well, you can edit and modify the existing templates, ensuring their accessibility as you do so and saving them as a new template.

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**Curb Cuts:** Updating templates is also a good opportunity to improve document consistency, copy editing, and branding.

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## To select a template

1. Go to [Google Docs](#).
2. At the top right, click on **Template Gallery**.

3. Select a template.
4. A copy of the template will open.

## *To create an accessible template*

1. Create a new document (from the default template or from an existing template).
   *Note*: If creating a template from an existing document, go to **File** > **Make a copy**. Type a name and choose where to save it, then, click **Ok**.
2. Rename your document. Be sure to indicate that the document is an accessible template by using terms such as "accessible" (e.g., "Accessible Memo Template"). This will improve its searchability and promote its use as an accessible template.
3. Ensure that you follow techniques in this document. You may also check the accessibility (see Technique 11).

## *To share your accessible template as a new document*

You can share your accessible template, but it may be more useful to share the file as copy that other users can add to their Google Drive.

1. Go to the address bar change the end of the URL before sending it.

2. Replace "edit" at the end of the URL with "copy".
   *For example:*
   **Before:** http://docs.google.com/document/d/12345678/**edit**
   **After:** http://docs.google.com/document/d/12345678/**copy**
3. Send the modified copy link.
4. When the recipient follows the modified copy link, they're instructed to click on **Make a copy**.



5. They can then work on a copy of the accessible template.

For more information, see the resources below:

- [Google: Create document templates](#)
- [Google: Share "Make a copy" links to your files](#)

## Technique 2. Specify Document Language

At this time (December 2019), Google Docs does not offer an explicit language selection mechanism to indicate the natural language of your document or changes in natural language at any point within the content. Google Docs defaults the natural language to the language selected for your Google Account. Users can change your typing language in Google Docs (see [Google: Change Your Typing Language](#)).

When exporting to other document formats, there is no

guarantee that the natural language of your Google Account will be indicated as the natural language of your document. In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## *Use Grackle Docs to specify document language*

While Google Docs does not offer an explicit language selection mechanism, users can set the document language when using the Grackle Docs plugin (see Technique 11). Using Grackle, users can set document properties including document title and document language. This is mainly needed if using Grackle to export to other file formats, like PDF.

# Technique 3. Provide Text Alternatives for Images and Graphical Objects

Google Docs offers a mechanism for adding alternative text to images and objects where it can be readily accessed by screen reader users. While you can add alt text, you will need to ensure that you provide the longer descriptions in the body of the document, near the images and objects. While this solution is not optimal for screen reader users and will complicate your own accessibility testing, it is necessary until long descriptions are supported.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe

in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text
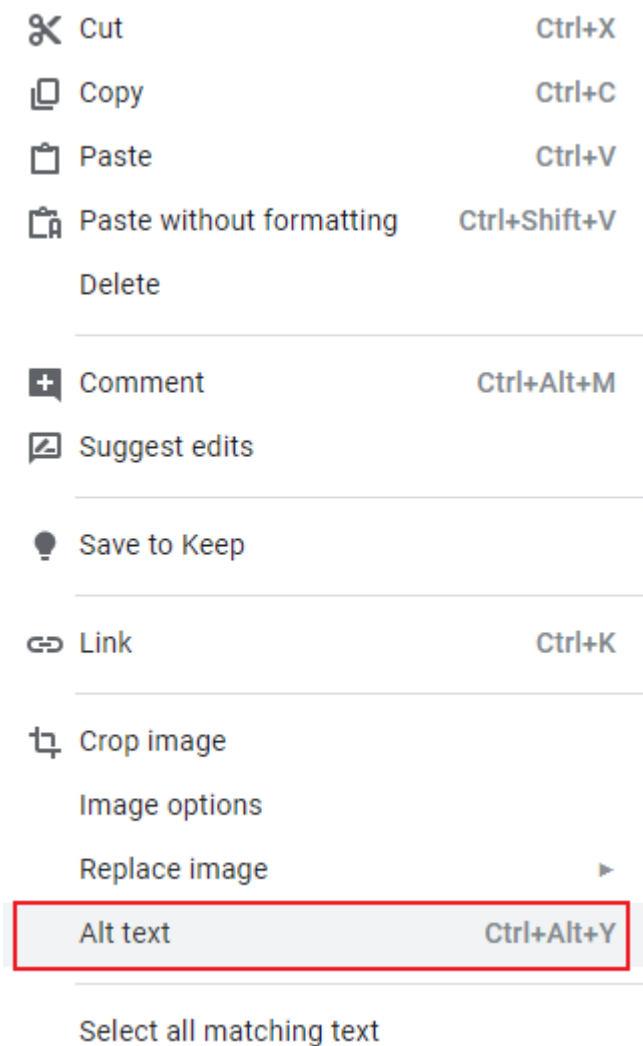
*Tips for writing longer descriptions*

- Long descriptions should be used when text

alternatives (see above) are insufficient to answer the question "what information is the image conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description
- Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click* on the image.
2. Select Alt Text from the contextual menu.

| | | |
|---|---|---|
| ✂ Cut | | Ctrl+X |
| ▯ Copy | | Ctrl+C |
| ▯ Paste | | Ctrl+V |
| ▯ Paste without formatting | | Ctrl+Shift+V |
| Delete | | |
| ➕ Comment | | Ctrl+Alt+M |
| ▱ Suggest edits | | |
| ▮ Save to Keep | | |
| ⌾ Link | | Ctrl+K |
| ⊐ Crop image | | |
| Image options | | |
| Replace image | | ► |
| Alt text | | Ctrl+Alt+Y |
| Select all matching text | | |

3. Add your alt text to the **Description** field.

## Alt Text

Alt text is accessed by screen readers for people who might have trouble seeing your content.

**Title**

**Description**

OK     Cancel

4. Press **OK** to save*Note*: Enter a description in the **Title** field will show a pop-up tooltip when users hover over the image with their mouse. However, it is recommended to put the image description in the **Description** field.

# Technique 4. Avoid "Floating" Elements

When images and objects are inserted into Google Docs they default to being positioned "inline" with the text. There is also the option to attach images and objects to a fixed position on the page. A "floating" object keeps its position relative to the page, while text flows around it. As content moves up or down on the page, the object stays where it was placed. To ensure that images and objects remain with the text that references it, always position it as "inline" with the text at the end of the in-text reference. Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

# Technique 5. Use Headings

Any document longer than a few paragraphs could benefit from adding structure to make content easier for readers to understand. **One of the simplest ways to do this is to use actual headings** (or "true headings") to create logical divisions between paragraphs. Using actual headings means applying a built-in heading style – rather than just formatting content with bolded, enlarged, or centered text. Built-in heading styles are structural elements that communicate order and levels, which provide a meaningful sequence to users of assistive technologies.

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**Curb Cuts:** Using actual headings provides several important benefits:

- Headings are used by Google Docs to auto-generate a table of contents (see Technique 7.5: Use a Table of Contents).
- Headings are used by the Outline function in Google Docs to create a navigation pane, especially helpful for long documents (see [Google: Use document outlines](#)); and you can update all of the headings of a particular type at once, which keeps them consistent.

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*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", ..., "Heading 9").
- Six (6) levels of headings are supported.
- Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.). Do not skip headings.
- If you plan to create a Word document that will have an automatically generated table of contents, remember that text marked with "Heading 1" will appear in the table of contents. Therefore, you may want to mark the top-level title of the document, which typically wouldn't be included in the document's table of contents, with the "Title" style. On the other hand, if you plan to convert to HTML, the main title is usually marked with a "Heading 1" which will be mapped to an `<h1>` HTML element.

*To apply headings from the Format menu*

1. Highlight the text that you want to make into a navigational heading.
2. Go to menu item: **Format > Paragraph Styles**.
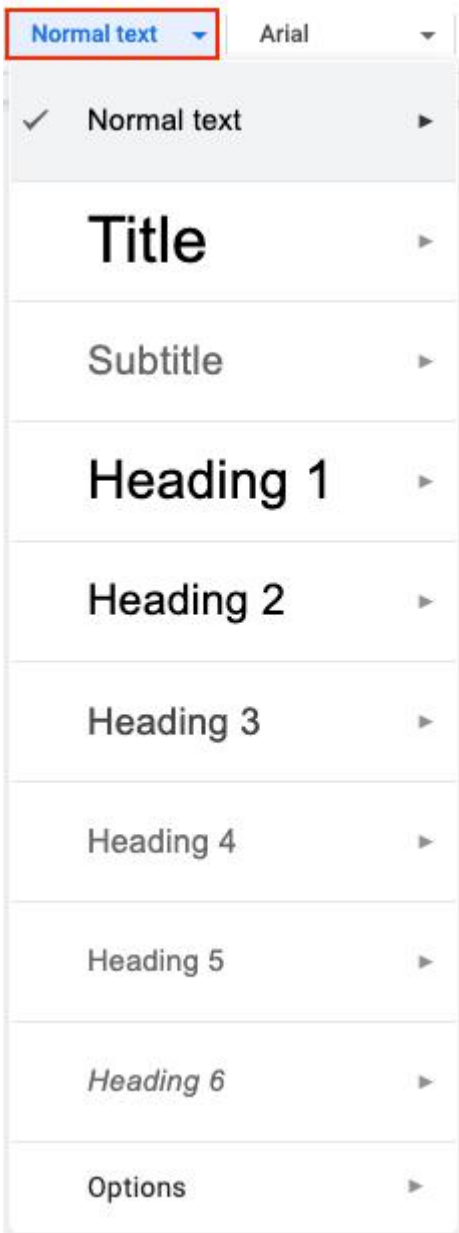3. Select the desired heading you would like to apply to the text.

For details on how to modify a heading or text style, see [Google: Set and change a default style](#).

## To apply headings using the Heading drop-down menu

1. Highlight the text that you want to make into a navigational heading.
2. Go to the **Styles** drop-down menu.



3. Select the desired heading you would like to apply to the text.

| | Normal text ▾ | | Arial | ▾ |

| ✓ | Normal text | ▶ |

| Title | ▶ |

| Subtitle | ▶ |

| Heading 1 | ▶ |

| Heading 2 | ▶ |

| Heading 3 | ▶ |

| Heading 4 | ▶ |

| Heading 5 | ▶ |

| Heading 6 | ▶ |

| Options | ▶ |

*To apply headings using keyboard shortcuts*

1. Highlight the text that you want to make into a navigational heading
2. Select Ctrl+Alt+1 (for Heading 1),Ctrl+Alt+2 (for Heading 2), etc.

For a complete listing of keyboard shortcuts, see [Google: Keyboard shortcuts for Google Docs](#).

## Technique 6. Use Named Styles

As with actual or "true" headings (see [Technique 5](#)), you should attempt to make use of the named styles that are included with the office application (e.g., "emphasis", "caption", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names). For more information on formatting using named styles, see [Technique 9](#). *Note*: While office application suites support headings in much the same way, the named styles often differ.

*To use default named styles*

1. Default named styles can be applied the same way as headings (see [Technique 5](#)).

## Technique 7. Use Built-In Document Structuring Features

# 7.1 Tables

At this time, Google Docs does not offer a mechanism that allows you to select and indicate headings for rows and columns. Since it is not possible to create complex tables in Google Docs that are accessible, avoid creating complex tables since table headers cannot be designated.

If you use the [Grackle Docs](#) add-on, tables can be given structure and table headings can be indicated. While these fixes won't be useful for making tables more accessible in Google Docs, it does allow you to export the document into another format with appropriate table tags intact. For more on Grackle Docs, see [Technique 11](#).

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

Since Google Docs does not provide a feature to repeat header rows at the top of each page, you would need to break your table into separate tables. Then, you would manually add a row at the top of the table and copy/paste header info at the top of each page. For detailed instructions on how to work with tables in Google Docs, see [Google: Add and edit Tables](#).

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.

- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 4](#)).

## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Go to menu item: **Format > List styles**.
2. Select the list style you want to use.

## 7.3 Columns

Use **Columns** feature for placing text in columns. *Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Page Breaks

Start a new page by inserting a page break (*Windows*: CTRL + Enter; *Mac*: ⌘ + Enter) instead of repeated hard returns.

## 7.5 Use a Table of Contents

Creating an index or table of contents to outline office-document content can provide a means of navigating the meaningful sequence

of content. You can see your document's structure with a table of contents. Each item in the table of contents links to your document's headings.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

### To insert a Table of Contents

1. Position cursor where you would like to place the table within your document.
2. Go to menu item: **Insert > Table of contents**.

### To update a Table of Contents

1. Click within the table.

2. Select the **Refresh** button. 

For more details, see: [Google: How to add or change a table of contents](#).

## 7.6 Use Page Numbering

In Google Docs, you can add page numbers and the number of total pages to a document.

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its

content. For users of assistive technologies, it provides a valuable point of reference within the document.

### *To insert page numbers*

1. In the top left, select **Insert** and then **Header & page number**.
2. Then choose:
   **Page number:** Choose where you want the page numbers to go, and whether you want the first page to be skipped.
   **Page count:** The page count will be added wherever your cursor is placed in the document.
3. The page numbers or page count will be added automatically.

For more details, see [Google: Add or remove headers, footers and page numbers](#).

## 7.7 Document Title

At this time, Google Docs makes use of a single document name. Within Google Docs, this serves well as a title, but when exporting to ODT, the document name is used to form the file name and the ODT "Title" properties field is left blank. *Note:* In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

If using third-party add-on [Grackle Docs](#), you can add a document title. After updating this setting, the document title  will be preserved in the document's metadata when exporting to PDF using Grackle. It is one of the first checks that appears in the Grackle Docs sidebar after launching (see [Technique 11](#)).

*To change the file name of the current document*

1. Go to menu item: **File > Rename**.
2. In the **Rename Document** dialog, enter a new document name.
3. Click **OK**.

## Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- When creating bar charts, it is helpful to apply textures rather than color to differentiate the bars
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2)

> 💡 **Curb Cuts:** If the chart data is also provided in an appendix, it will be easier for all users to make use of the data.

### *To add a chart to Google Docs*

Charts that you create in Google Sheets can be linked to a Google Docs document.

1. Go to **Insert** > **Chart**.
2. Select the type of chart you want to add.
3. When you add a new chart, it will link to a new Google Sheet. To update the the data in the chart, update the numbers in the linked Google Sheet.

For more details, see the following:

- [Google: Link a chart, table, or slides to Google Docs or Slides](#)
- [Google: Types of charts & graphs in Google Sheets](#)
- [Google: Learn how to edit chart data](#)

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern. In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- [WebAIM: Contrast Checker](#)
- [Juicy Studio: Luminosity Color Contrast Ratio Analyzer](#)
- [Joe Dolson Color Contrast Spectrum Tester](#)
- [Joe Dolson Color Contrast Comparison](#)

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content

should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Google Docs's review functionality features to track changes, such as the revision history and TextFlow mechanisms.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted in [Technique 3](#).

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate, and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.

- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

### *To add hyperlinks with meaningful text*

1. Go to menu item: **Insert > Link.** Alternately, you can select the text you'd like to add a link to and press Ctrl+K (or Cmd+K on Macs).
2. In the pop-up box, enter descriptive text in the **Text** display box.
3. Enter the link address in the **Link**.
4. Select **Apply**.

## Technique 11. Check Accessibility

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

While there is no accessibility checking feature built into Google Docs, you can install a third-party add-on called Grackle Docs.

## Grackle Docs

**What is Grackle Docs?** Grackle Docs is a third-party add-on that runs on documents created in Google Docs. It helps with checking and improving the digital accessibility of your document. Due to the nature of Google Docs, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like a PDF file.

**How does it work?** After Grackle is launched, It scans the current document for accessibility issues and identifies and locates errors. Feedback appears in a sidebar that is docked on right-side of the screen. By exploring the sidebar, you can immediately learn about accessibility issues and find and fix the detected errors by interacting with the Grackle sidebar.

*Note:* Grackle's accessibility checker is free to use; however, the

ability to export and produce accessible HTML and PDF documents is only free for the first 30 days (as of December 2019).
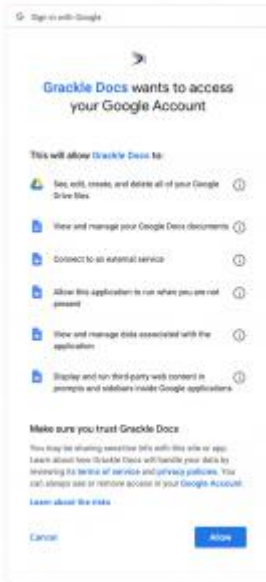
At present, Grackle Docs performs the following 22 accessibility checks:

- Document
    - Document title is required
    - Document language should be specified
- Images
    - Images should have alternate text or mark as artifact
    - Drawings should have alternate text or mark as artifact
    - Equations should be described
    - Images may need to be downsampled to reduce file size
- Headings
    - Headings should be used
    - A single "Heading 1" should be used
    - Headings must be properly nested
- Tables
    - Tables must be tagged or marked as layout tables
    - The use of merged cells is not recommended
    - The use of empty cells is not recommended
- Landmarks
    - Headers and footers should be used
    - Footnotes should have ids and alt text
    - Lists should be used where appropriate
- Content
    - Document should not contain unsupported content
    - High color contrast should be used
    - Fine print should be avoided
    - All-caps styling should be avoided
    - Adjusted alignment not suggested for non-heading text
    - Lengthy paragraphs should be avoided
    - Links should be informative

## How to install Grackle Docs

[Grackle Docs](#) can be installed from the **Add-ons** menu of a Google Docs document.
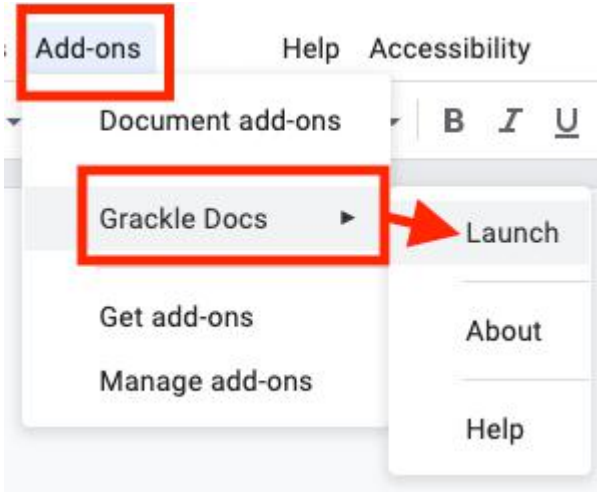
1. Open a [Google document](#).
2. Select **Add-ons** > **Get Add-ons**.

   - Search for **"Grackle"** in the search field.
   - Select the add-on and click **Install**.

3. *Note*: A message will appear requesting access to data that the add-on needs to work. Review the message and click **Allow**.

*How to launch and use Grackle Docs*

[Grackle Docs](#) is simple to launch and is accessed from the **Add-ons** menu. Open a [Google document](#)

1. From the **Add-ons** menu, select **Grackle Docs**, then select **Launch**.



- A sidebar launches that identifies errors and warnings.

**Grackle Docs** ✕

Accessibility Check | Document Structure | ☰

**Re-Check** | Export to PDF

20 of 22 checks passed | ⇗ | ⌄

## Document — ❶

✗ Document title is required

✔ Document language should be specified

## Images — ❶

✗ Images should have alternate text or mark as artifact

✔ Drawings should have alternate text or mark as artifact

✔ Equations should be described

✔ Images may need to be downsampled to reduce file size

## Headings — ✔

- Clicking on each error and warning will expand the selection and provide guidance on how to resolve each issue.
- Select the **"Locate"** button on any flagged item will take you to that line of the document to review.

Locate +TAG

2. Continue to review and address each flagged item.

- Select the "Re-Check" button at the top of the sidebar to update the report.
- Continue to revise until all checks have passed.

To view a sample Google Doc that will give you a sense of how Grackle Docs works, see Grackle Docs Walkthrough Document from Grackle. Automated accessibility checkers cannot be trusted to check for all accessibility concerns, so be sure to review the recommended techniques in this document.

## Evaluating Accessibility in Other Formats

*To evaluate HTML accessibility*

Save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

*To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

# Alternate formats

1. Go to menu item: **File** > **Download as**
2. Select format *Note*: documents saved as HTML format may require some cleaning up. The steps below will help you with this.

## *PDF*

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11 .

## *To clean up your HTML file*

1. Remove unnecessary styles, line breaks, etc.
2. Remove unnecessary id, class, and attributes
3. Remove font tags
4. Remove styles in the <head> tag
5. Ensure the <th> tags have a scope attribute
6. Remove <p> tags nested inside <th> and <td> tags
7. Check for accessibility (see Technique 11) *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- Grackle Docs
- Using Google Docs with a screen reader – outlines how to navigate to the ARIA enhanced version of Google docs and use keyboard shortcuts.
- Keyboard shortcuts for Google Docs
- Google Docs Section 508 Compliance

## Accessibility Help

If you are interested in what features are provided to make using Google Docs more accessible to users, documentation is provided through online articles and Help forums:

1. Go to menu item: **Help > Google Docs Help Center**

## References and Resources

1. Google Docs help
2. GAWDS Writing Better Alt Text

# Acknowledgments

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n accessibility checking feature.

# Microsoft Word 2013, 2016, and 2019

## Usage Notes

This icon highlights "curb cut" opportunities in these techniques. "Curb cuts" are situations in which accommodations made for accessibility reasons will also result in significantly better and more efficient outcomes for everyone. The name comes from sidewalk "curb cuts" that were added for people in wheelchairs, but are commonly used by people with baby strollers, handcarts, wheeled luggage, and others.

At the time of testing (December 2019), Word provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. In addition, Word includes an accessibility checking feature. This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents,

unlike web content), and

- **Typical of office-style workflows** (e.g., Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

The default file format for Word is **Office Open XML (DOCX)**.

In addition, Word offers many other word processor and web format saving options (e.g., PDF, HTML, OpenDocument Text, Rich Text Format, etc.). Most of these have not been checked for accessibility, but some information and/or instructions are available in [Technique 11](#).

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the

spacebar) or (2) Shift+F10.

## Disclaimer and Testing Details

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Microsoft Word 2013 and Microsoft Word included with Office 365 while creating a DOCX document.

## Technique 1. Use Accessible Templates

**WCAG 2.0 Applicability:**

- All success criteria

All office documents start with a template. These can be as simple as a blank standard-sized page or complex nearly complete document with text, graphics, and other content (e.g., a "meeting minutes" template). Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see [Technique 10. Check Accessibility](#)). Word's default template for new documents is a blank

page. The basic installation also includes a variety of other blank office-related documents. These are all accessible by virtue of being blank. It is also possible to create your own accessible templates.

> **Curb Cuts:** Updating templates is also a good opportunity to improve document consistency, copy-editing, and branding.

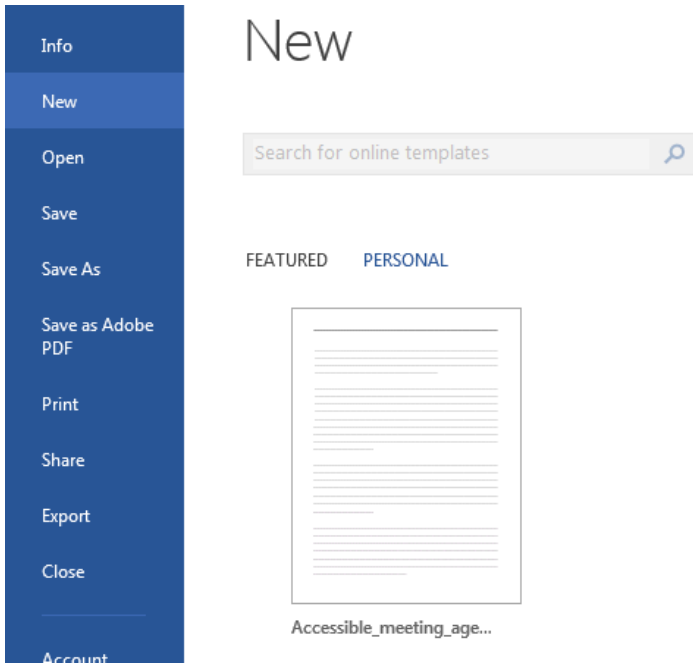*To create an accessible template*

1. Create a new document (from the default blank template or from one of the prepackaged templates).
2. Ensure that you follow all of the techniques in this document.
3. When finished, check the accessibility of the document (see [Technique 10. Check Accessibility](#)).
4. Go to menu item: **File > Save As**.
5. Select **Templates**.
6. In the **Save as type** list, select **Word Template (*.dotx)**.
7. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Memo Template") may increase the prominence of the accessibility status. As well, filling in the text boxes labeled **Tags** and **Title** with the terms that include "accessibility" may improve the discoverability of the template as an accessible file.
8. Select **Save**.
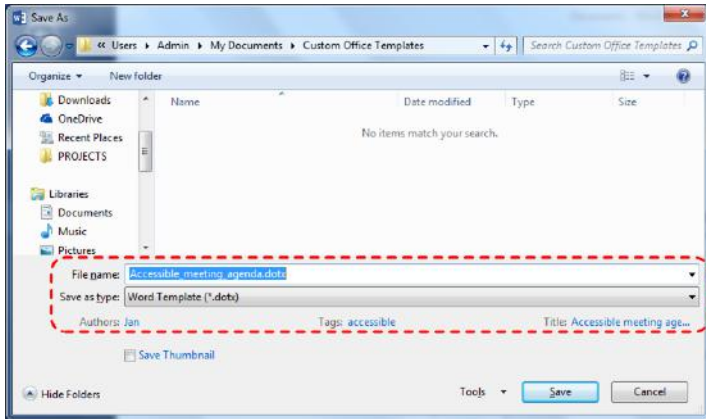
*To select an accessible template*

Only use these steps if you have an accessible template available (e.g., one that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New**.
2. Select **Personal**.
3. Select your accessible template from the list.

4. A new document based on the template will be displayed. If you chose an accessible template, the document will be accessible at this point.
5. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Specify Document Language

**WCAG 2.0 Applicability:**

- 3.1.1 Language of Page
- 3.1.2 Language of Parts

In order to enable for assistive technologies (e.g., screen readers) to present your document accurately, you must indicate the natural (human) language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

> **Curb Cuts:** The specified document language is also used by the spelling and grammar checker. In Canada, make sure to choose "English (Canada)" to avoid having to override American spellings of words such as "colour."

## *To change the default language*

1. Go to menu item: **File**.
2. Select **Options** from the list in the left window pane.
3. Select **Language** from the list in the left of the **Options** dialog.
4. Under **Choose Editing Languages**, select the editing language you want to use.
   *Note*: To add an editing language, select the language from the drop down list labeled "**Add additional editing languages**."
5. Select **Set as Default.**
6. Close all Office documents and open them again for the changes to take effect.
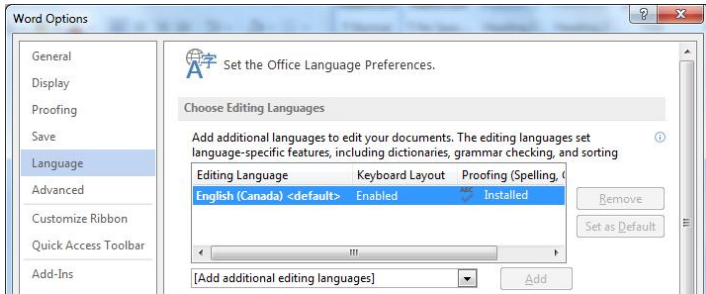
Word has an automatic language detection mechanism, which can automatically detect the language of your text. If you type a section of text in a different language than the rest of your document, Word should programmatically mark the language of that section of text appropriately.
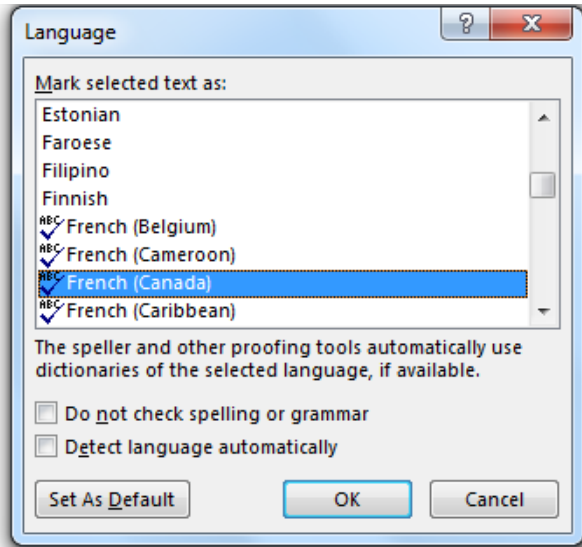
*To turn on automatic language detection*

1. Go to menu item: **Review**.
2. In the **Language** section, select the **Language** button.
3. Select **Set Proofing Language**.
4. In the **Language** dialog, select the **Detect language automatically** check box.
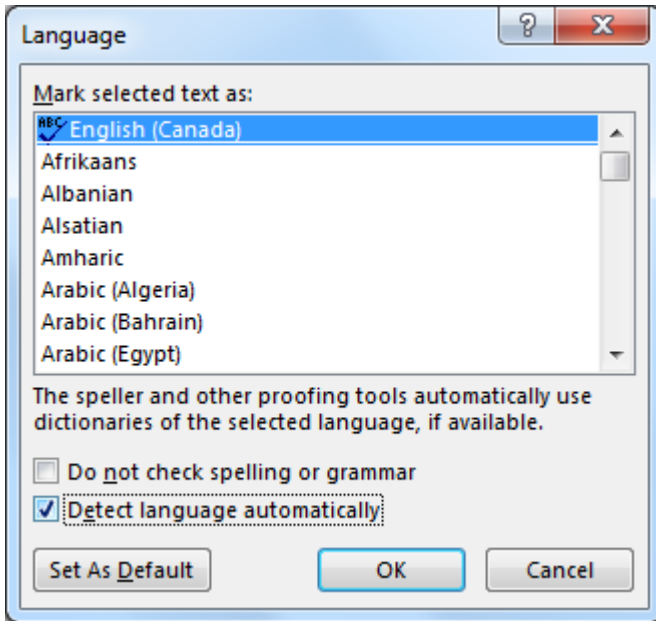
*To apply a language directly to selected text*

1. Select the text.
2. Go to menu item: **Review**.
3. In the **Language** section, select the **Language** button.
4. Select **Set Proofing Language**.
5. In the **Mark selected text as** box, select the language from the list.
6. Select **OK**.

Francais

**Language**

Mark selected text as:

Estonian
Faroese
Filipino
Finnish
French (Belgium)
French (Cameroon)
French (Canada)
French (Caribbean)

The speller and other proofing tools automatically use dictionaries of the selected language, if available.

☐ Do not check spelling or grammar
☐ Detect language automatically

Set As Default    OK    Cancel

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

**WCAG 2.0 Applicability:**

- 1.1.1 Non-text Content

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This is done by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (e.g., artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

**Curb Cuts:** Sometimes it may not be clear what a particular image is meant to convey and alternative text can provide that clarity. Also, alternate text has been shown to be included in search engines rankings.

*Tips for writing alternative text*

- Try to answer the following question: "What information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank.
- If the image contains meaningful text, include all of the text in the alternative.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences.
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below.
- Test by having others review the document with the images replaced by the alternative text.

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question: "What information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone.
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click* the object.
2. Select **Format Picture...**
3. Select the **Layout & Properties** tab.

4. Select the **Alt Text** option from the list under that tab.
5. Fill in the **Description** field (*not* the "Title" field).
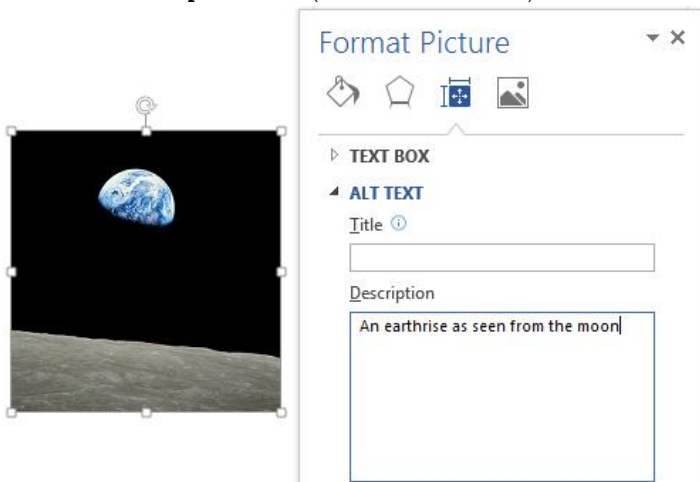


When inserting a very small image (or resizing a larger image to be much smaller) and following it with text, Word sometimes assumes that the image is intended to be a bullet-point for a bulleted list. Once Word defines the image as a bullet, the option to add alternative text disappears. Select **Undo**, to redefine the bullet as an image.

**Editor's note:** For later versions of Word, the **Alt Text** menu is also available in the right-click, pop-up menu that appears when you right-click on an image.

For more information, see these resources:

- [Microsoft: How to add alt text](#)
- [Microsoft: How to improve accessibility with alt text (video)](#)

# Technique 4. Avoid "Floating" Elements

**WCAG 2.0 Applicability:**

- 1.3.2 Meaningful Sequence

When certain elements (e.g., images, objects, text boxes) are inserted into Word documents they default to being an "inline object". Inline objects keep their position on the page relative to a position in the text. This is beneficial for users of assistive technologies (e.g., screen readers), because the position of the object in the document order is clear, so the screen reader can read the object's alternative content (e.g., Description field) when the user moves keyboard focus to that position. However, Word also provides the option to have these elements "float" outside of the text order, with text flowing around, under or over it. This is a problem because the position of the object in the document is no longer clear and the screen reader will often read the alternative text out of context, which can be confusing. These text flow options should be avoided. Similarly, avoid placing drawing objects such as arrows, lines and shapes directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects (e.g., pictures).
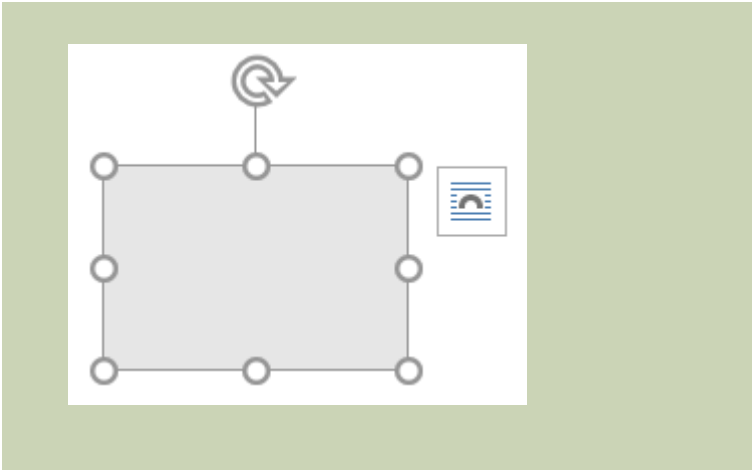
**Curb Cuts:** In-line elements are often easier to work with than floating elements, which can end up being shifted into strange positions as editing earlier parts of a document cause repagination.

*To prevent an image or object from "floating"*

1. Select the object.
2. Go to menu item: **Page Layout**.
3. Select **Position** from the **Arrange** section.
4. Select **In Line with Text**.



**Editor's note:** In later versions of Word, you can also keep pictures in-line with text by selecting the object and choose a wrapping option from the pop-up icon.

# Technique 5. Use Headings

**WCAG 2.0 Applicability:**

- 1.3.1 Info and Relationships
- 2.4.1 Bypass Blocks
- 2.4.6 Headings and Labels
- 2.4.10 Section Headings

Any documents that are longer than a few paragraphs require structuring to make them easier for readers to understand. One of the simplest ways to do this is to use **"True Headings"** to create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centred text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

**Curb Cuts:** Using true headings provides several important benefits: (1) Headings are used by Word to auto-generate a table of contents (see [Technique 6.5 Use a Table of Contents](#)); (2) Headings are used by the "Navigation Pane" which is especially helpful for long documents (see [Word's "Navigation" Feature](#)); and you can update all of the headings of a particular type at once, which keeps them consistent.

*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", ..., "Heading 9").
- Nine levels of headings are supported.
- Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.).
- If you plan to create a Word document that will have an automatically generated table of contents, remember that text marked with "Heading 1" will appear in the table of contents. Therefore, you may want to mark the top-level title of the document, which typically wouldn't be included in the document's table of contents, with the "Title" style. On the other hand, if you plan to convert to HTML, the main title is usually marked with a "Heading 1" which will be mapped to an `<h1>`

HTML element.

## To apply headings to selected text

1. Select text.
2. Right-click* and select **Styles**.
3. Select the heading style (Heading 1, Heading 2, and so on) from the list.

## To apply headings using the Styles toolbar

1. Select text.
2. Go to menu item: **Home**.
3. In the **Styles** section, select the heading style that you wish to apply
   *Note*: You can scroll through the multiple heading styles using the arrows on the right side of the **Styles** section. You can also change the **Style** design by selecting the **Change Styles** button on the right.

## To modify heading styles

1. Go to menu item: **Home**.
2. In the **Styles** section, right-click* the style you wish to modify from the **Styles Gallery**.
3. Select **Modify**.

4.  In the **Modify Style** dialog, make your desired changes to style characteristics.
5.  Select **OK**.
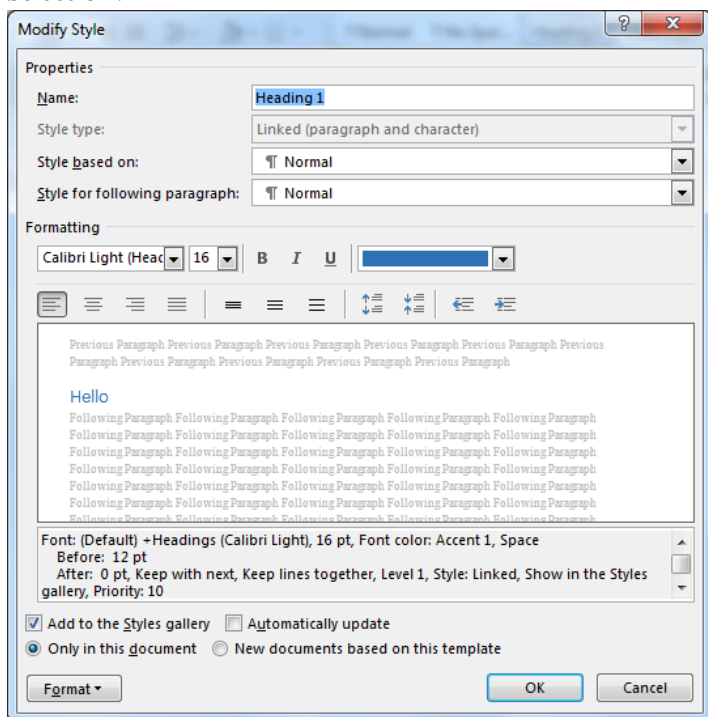


## Adding heading style that is not listed

Sometimes heading levels may not appear in lists described above. For example, the list might contain "Heading 1" and "Heading 2", but not "Heading 3". In this case, it is still possible to apply the unlisted style:

1.  Select text.
2.  Go to menu item: **Home**.
3.  In the **Styles** section, select the arrow to expand the list of

style options.

4. Select **Apply Styles**.
5. In the **Style Name**, enter the heading style ("Heading 1" to "Heading 9").
6. Select **Apply** button.



# Technique 6. Use Built-In Document Structuring Features

**WCAG 2.0 Applicability:**

- 1.3.1 Info and Relationships
- 1.3.2 Meaningful Sequence
- 2.4.2 Page Titled

**Curb Cuts:** Using built-in structural features is much more reliable that trying to use typography for formatting (e.g., tabs to separate table cells, repeated new lines for a page break).

## 6.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.

- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g. "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page (see Technique 4. Avoid "Floating" Elements).

*To insert a table*

1. Go to menu item: **Insert**.
2. In the **Tables** section, select **Insert Table**.
3. Select the **Number of columns** and the **Number of rows** you would like your table to have.
4. Select the **OK** button.

## To a heading row

1. Place the cursor in the top-row of the table that you would like to make into the heading row.
2. The **Table Tools** menu item should appear.
3. Go to menu item: **Table Tools > Layout**.
4. In the Table section, select **Properties**.
5. Select the **Row** tab.
6. Select the **Repeat as header row at the top of each page** checkbox.

## 6.2. Lists

When you create lists, it is important to format them as "real lists." Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

## To create an ordered or unordered list

1. Go to menu item: **Home**.
2. In the **Paragraph** section, select the **Bullets** icon for unordered lists or select the **Numbering** icon for ordered lists.

## To modify list styles

1. Go to menu item: **Home**.
2. In the **Paragraph** section, select the arrow beside the **Bullets** icon for unordered lists or select the arrow beside the **Numbering** icon for ordered lists.

3. Select **Define New Bullet...** to create a new unordered list format.
4. Select **Define New Number Format...** to create a new ordered list format.
5. In the **New Bullet** dialog or the **New Number Format** dialog, select the list characteristics.
6. Select **OK**.

## 6.3 Columns

Use the **Columns** feature for placing text in columns. *Note:* Because columns can be a challenge for some users with disabilities (e.g., people using magnifiers), consider whether a column layout is really necessary.

## 6.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

### *To add a page break*

1. Go to menu item: **Page Layout**.
2. In the **Page Setup** section, select the arrow beside the **Breaks** icon.
3. Select the type of break to add. **Page break** is used to start a new page with the same page layout (page orientation, headers, page numbering, etc.). **Section break** is used if you want to start a new section of the document with a differing page layout.

# 6.5 Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content. The best way to generate a table of contents is after applying the predefined heading styles (e.g., "Heading 1," "Heading 2," "Heading 3") as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents. *Note:* If you do not want the main title of the document to appear in the generated table of contents, mark it with the "Title" style.

### *To insert a table of contents*

1. Place the cursor in your document where you want to create the table of contents.
2. Go to menu item: **References**.
3. In the **Table of Contents** section, select **Table of Contents**.
4. Select the style that you want to use.

### *To update a table of contents*

1. Select the table of contents.
2. Go to menu item: **References**.
3. In the **Table of Contents** section, select the **Update Table** button.

# 6.6 Page Numbering

Numbering the pages of you document helps those reading and

editing your document effectively navigate and reference its content. For users of assistive technologies, it can provide a valuable point of reference within the document.

*To insert page numbers*

1. Go to menu item: **Insert**.
2. In the **Header & Footer** section, select **Page Number**.
3. Select where you would like to insert your page numbers.
4. Select the style of page number you would like to use.

*To format page numbers*

1. Go to menu item: **Insert**.
2. In the **Header & Footer** section, select **Page Number**.
3. Select **Format Page Numbers…**
4. In the **Page Number Format** dialog, select the page format characteristics you would like to use.
   *Note*: These changes are applied to the predefined page format styles. It does not create a new page format style.

## 6.7 Document Title

If you plan to convert the document into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File.**

2. Select **Info** from the list in the left window pane
3. In the right window pane, select the **Title** text box and enter an appropriate title.
   *Note*: The **Title** defined in the properties is different than the file name.

**Editor's note:** For later versions of Word, follow these steps:

1. Select **Info**, then click on **Properties** in the right-most pane.
2. Next, select **Advanced Properties**.
3. From there, the **Title** text box can be updated.
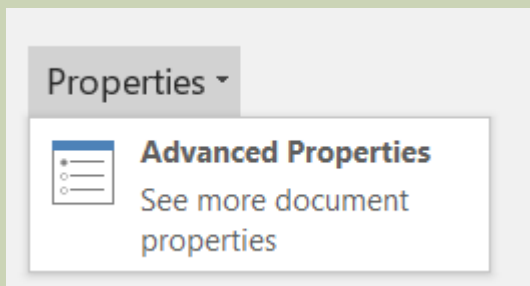
Properties ▾

▤ **Advanced Properties**
   See more document properties

# Technique 7. Create Accessible Charts

**WCAG 2.0 Applicability:**

- 1.1.1 Non-text Content

- 1.3.1 Info and Relationships

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All the basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information.
  - When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind.
  - When creating bar charts, it is helpful to apply textures rather than colours to differentiate the bars
- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colours, ensuring that they align with sufficient contrast requirements (see Technique 8.2 Use Sufficient Contrast)
- Consider providing the data that you used to create the chart in tabular form (e.g., as an appendix).

 **Curb Cuts:** If the chart data is also provided in an appendix, it will be easier for all users to make use of the data.

# Technique 8. Make Content Easier to See

**WCAG 2.0 Applicability:**

- 1.3.3 Sensory Characteristics
- 1.4.1 Use of Color
- 1.4.3 Contrast (Minimum)
- 1.4.5 Images of Text
- 2.2.2 Pause, Stop, Hide

**Curb Cuts:** All users will benefit from content that is easier to see.

## 8.1 Format of Text

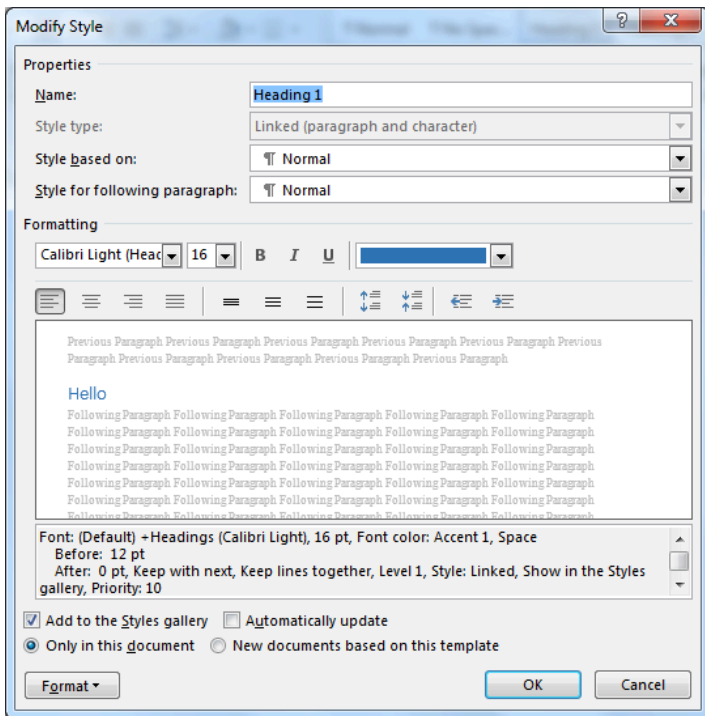When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) are typically easier to read than serif fonts (e.g. Times New Roman, Garamond).

- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such as the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable default level of accessibility.

## To change the text size for a default named style

1. Go to menu item: **Home**.
2. In the **Styles** section, right-click* the **Style** you wish to modify.
3. Select **Modify Style**.
4. Under **Formatting** in the **Modify** dialog box, select the appropriate font size.
5. Exit with **OK**.

## Modify Style

**Properties**

Name: Heading 1

Style type: Linked (paragraph and character)

Style based on: ¶ Normal

Style for following paragraph: ¶ Normal

**Formatting**

Calibri Light (Head | 16 | **B** *I* U

> Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph
>
> Hello
>
> Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph

Font: (Default) +Headings (Calibri Light), 16 pt, Font color: Accent 1, Space
Before:  12 pt
After:  0 pt, Keep with next, Keep lines together, Level 1, Style: Linked, Show in the Styles gallery, Priority: 10

☑ Add to the Styles gallery    ☐ Automatically update
◉ Only in this document    ○ New documents based on this template

Format ▾                    OK            Cancel

## 8.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least **4.5:1**.

   To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid colour for a text background rather than a pattern. In order to determine whether the colours in your document have sufficient contrast, you can consult an online contrast checker, such as the [TPG Contrast Analyser](#) or the [WebAIM: Contrast Checker](#).

## 8.3 Avoid Relying on Color or Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the colour or shape of content elements. Here are two examples:

- Do not track changes by simply changing the colour of text you have edited and noting the colour. Instead use Word's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 8.4 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or colour combination), consider whether you can achieve the same result by styling "real text." If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

# Technique 9. Make Content Easier to Understand

WCAG 2.0 Applicability

- 2.4.4 Link Purpose (In Context)
- 3.1.4 Abbreviations
- 3.1.5 Reading Level
- 3.2.3 Consistent Navigation
- 3.2.4 Consistent Identification

## 9.1 Write Clearly

**Curb Cuts:** By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users.

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g. headings, footings, etc.), it should occur consistently each time it is repeated.

## 9.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

### *To add hyperlinks with meaningful text*

1. Type (or paste in) a web address and press spacebar or "Enter" to convert into a hyperlink.
2. Select the link and right-click*.
3. Select **Edit Hyperlink** (Ctrl + K).
4. Edit the text in the **Text to display** box.

## Technique 10. Check Accessibility

If you wish to check the accessibility of your document or template (see [Technique 1. Use Accessible Templates](#)), Word offers an "Accessibility Checker" to review your document against a set of possible issues that users with disabilities may experience in your file.

**Important Note:** No checker can detect all types of accessibility issues. For example it can tell if alternative text is missing, but it cannot tell if alternative text is actually correct. It also doesn't test for some issues, including colour contrast. The Office website

provides more information about the [Accessibility Checker](#), including the rules it uses to identify and classify accessibility issues. The "Accessibility Checker" classifies issues as

- **Error** – content that makes a file very difficult or impossible for people with disabilities to understand
- **Warning** – content that in most, but not all, cases makes a file difficult for people with disabilities to understand
- **Tip** – content that people with disabilities can understand, but that might be better organized or presented in a way that would maximize their experience

### *To use the "Accessibility Checker"*

1. Make sure the file is saved as a DOCX. (*Note*: Older DOC files are not compatible with the checker).
2. Go to menu item: **File.**
3. Select **Info** in the left window pane.
4. Select the **Check for Issues** dropdown.
5. Select the **Check Accessibility** item.

6. An **Accessibility Checker** task pane will open, showing the inspection results.
7. Select a specific issue to see **Additional Information**.
8. Follow the steps provided to fix or revise the content.

## Technique 11. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

### *Saving to PDF*

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility.

To evaluate the accessibility of your PDF document, see [Technique 10. Check Accessibility](#).

1. Go to menu item: **File**.
2. Select **Save As**.
3. In the **File name** box, type a name for the file.
4. In the **Save as type** list, select **PDF** (*.pdf).
5. Select the **Options** button.
6. Ensure that the **Document structure tags for accessibility** checkbox is selected.
7. Select **OK** and **Save**.
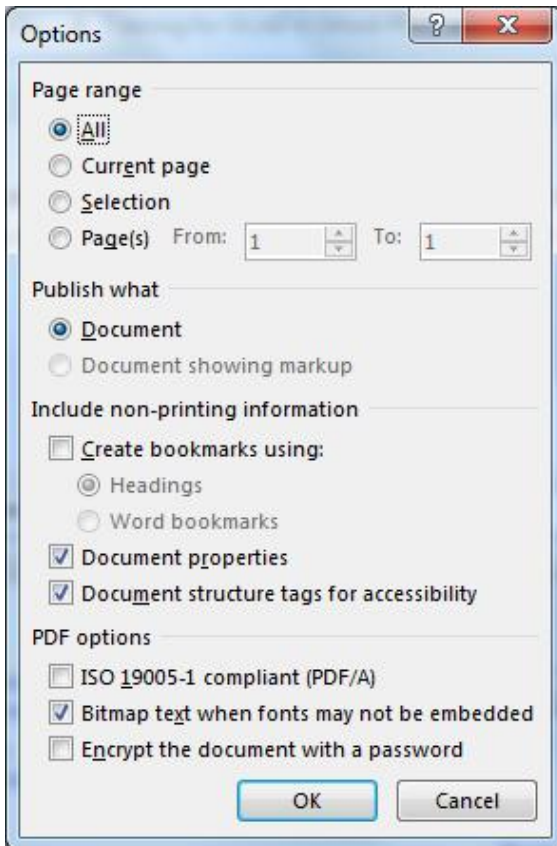
*Saving to HTML*

1. Go to menu item: **File**.
2. Select **Save As**.
3. In the **File name** box, type a name for the file.
4. In the **Save as type** box, select **Web Page** (*.htm).
5. Check the title in the **Title** text box. To change it, select the **Change Title...** to open an "Enter Text" dialog box.
6. Select **Save**.
7. Check the HTML file for accessibility (see [Technique 10. Check Accessibility](#)).

*To clean up your HTML file*

1. Remove unnecessary styles, line breaks, etc.
2. Remove unnecessary id, class, and attributes.
3. Remove font tags.
4. Remove styles in the <head> tag.
5. Ensure the <th> tags have a scope attribute.
6. Remove <p> tags nested inside <th> and <td> tags.
7. Check for accessibility (see [Technique 11](#), above).
   *Note*: you may wish to use HTML editors or utilities to help with this process.

## Other Application Features

## Word's "Navigation" Feature

After you have populated your document with content and true headings have been applied, you may wish to rearrange the content.

In order to maintain the integrity and accessibility of the altered sequence, you will need to ensure that structural information (e.g. heading levels) is adjusted accordingly. Word provides a "Navigation" mechanism which displays all parts of the document, such as headings, paragraphs, objects, etc. in sequential order. It helps you navigate, access, and manipulate the content. You can move headings or subordinate text up or down, rearranging their sequence in a way that can be programmatically determined and therefore accessible to assistive technologies.

## To use the "Navigation" feature

1. Go to menu item: **View.**
2. In the **Show** section, select the **Navigation Pane** check box.
3. The **Navigation** pane will open to the left of your document.

## To jump to a location in a document

1. Select one of three navigation options:
   1. Select **Headings**Note: select the heading to view hierarchical headings and content below it.
   2. Select **Pages.**
   3. Select the (Search) **Results**.



2. Scroll through the sequential list and double-click* on the location you would like to jump to

*To move content up or down in a document*

- Select and drag the content to a new location in the list.

## Accessibility Help

If you are interested in what features are provided to make using Word more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **File.**
2. Select **Help** from the list on the left.
3. Under the **Support** section, select the **Help** icon.
4. Enter "Accessibility" as your search term in the **Help** dialog box.

## References and Resources

1. [Microsoft Accessibility Page](#)
2. [Microsoft: Use a screen reader to explore and navigate Word](#)
3. [Microsoft Accessibility Tutorials](#)
4. [Microsoft: Keyboard shortcuts in Word](#)
5. [Ryerson University: Microsoft Word Accessibility Tipsheet (PDF)](#)
6. [Microsoft Word: Video Tutorials](#)

## Acknowledgments

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UNESCO
United Nations
Educational, Scientific and
Cultural Organization

Ontario

Inclusive Design
Research Centre
(OCAD
University)

# Microsoft Word for Mac 2011, 2016, and 2019

## Usage Notes

At the time of testing (December 2019), Word for Mac provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, Word 2011 for Mac does not include an accessibility checking feature.

> **Editor's note:** Later versions of Word for Mac include an accessibility checker (for 2016 and later versions). For more information, see Technique 11 or review how to make your Word documents accessible to people with disabilities.

This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

For more information on creating forms, web pages, applications, or other dynamic and/or interactive content that are accessible, you should consult the W3C-WAI Web Content Accessibility Guidelines ([WCAG 2.0](#)) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.

## File Formats

**The default file format for Word for Mac is Office Open XML (DOCX).**

In addition, Word for Mac offers many other word processor and web format saving options, however most of these have not been checked for accessibility.

## Disclaimer and Testing Details

- The following techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Microsoft Word 2011:Mac and Microsoft Word for Mac 2016 (version 16.16.16) while creating a DOCX document.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca).

# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content.

Microsoft Word for Mac's default template for a new documents is a blank page. It is possible to create your own accessible templates from scratch in Word for Mac. As well, you can edit and modify the existing prepackaged templates, ensuring accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1.  Create a new document (*from the default blank template or from one of the prepackaged templates*)
2.  Follow the techniques in this guide.
3.  Go to menu item: **File** > **Save As**.
4.  In the Save As box, insert a name for the template.*Tip: Using a descriptive File name (e.g., "Accessible Memo Template") may increase the prominence of the accessibility status.*
5.  In the **Format box**, select **Word Template**.
6.  Select **Save**.
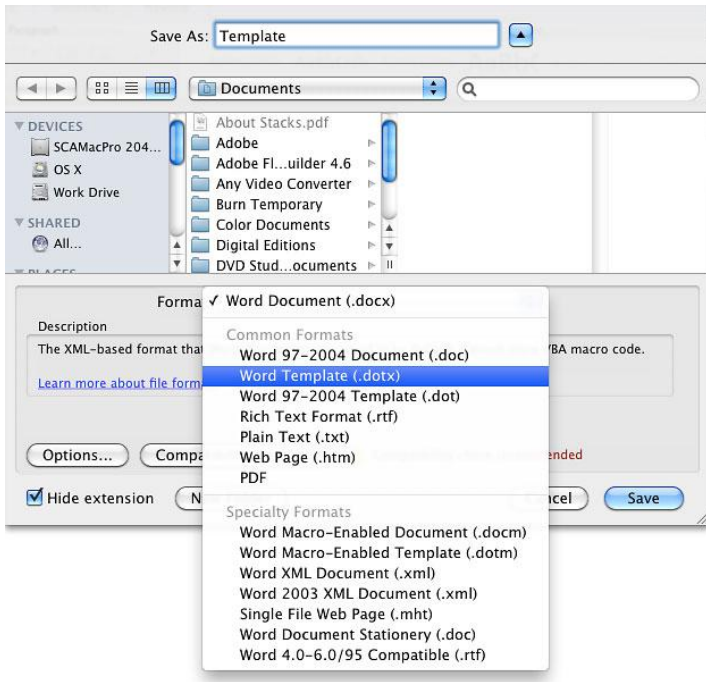
## To select an accessible template

Only use the following steps if an accessible template is available (e.g. a previous templates that is already created). Otherwise, simply open a new blank document.

1. Select the template icon (*top left corner*).



2. Under Templates, select **My Templates** (*in the word document gallery*).
3. Select the template from the scrolling gallery.
4. Select **Choose**.
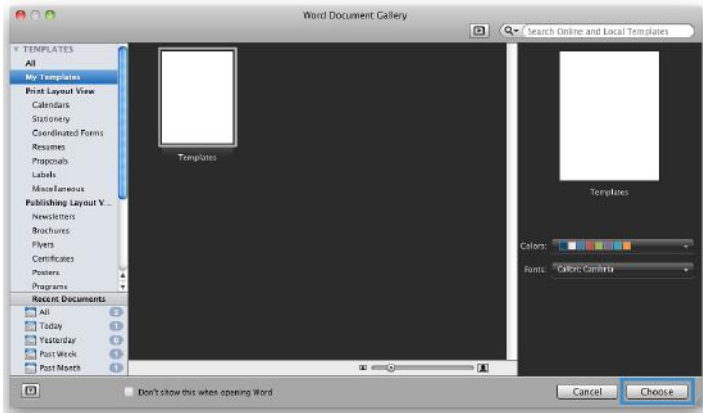
## Technique 2. Specify Document Language

In order for assistive technologies (e.g., screen readers) to be able to present the document accurately, it is important to indicate the natural language of the document (e.g., English, French). If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

*To change the default language*

1. Go to menu item: **Tools** >**Language...**
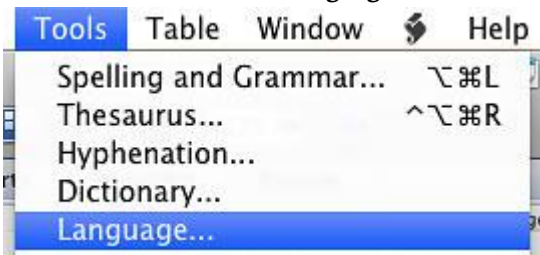


2. In the **Mark selected text as:** box, select the language.

3. Select **Default...**



*To apply a language directly to selected text*

1. Select the text.
2. Go to menu item: **Tools** > **Language...**
3. In the **Mark selected text as:** box, select the language.
4. Select **OK**.

## Technique 3. Provide Alternatives Text for Images and Graphical Objects

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful

information, leave the alternative text blank.

- If the image contains meaningful text, ensure all of the text is replicated.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences.
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below.
- Test by having others review the document with the images replaced by the alternative text.

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing

the image to a person over the phone.

- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## To add alternative text to images and graphical objects

1. Select Image.
2. (*Right click or Control+click*) Select **Format Picture...**
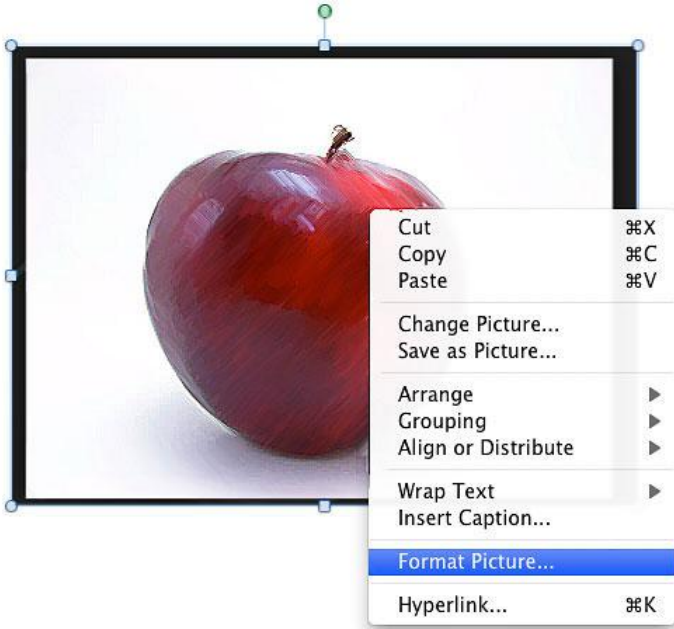
3. In the "**Format Picture**" window left menu, select **Alt Text**.
4. Insert description.
5. Select **OK**.
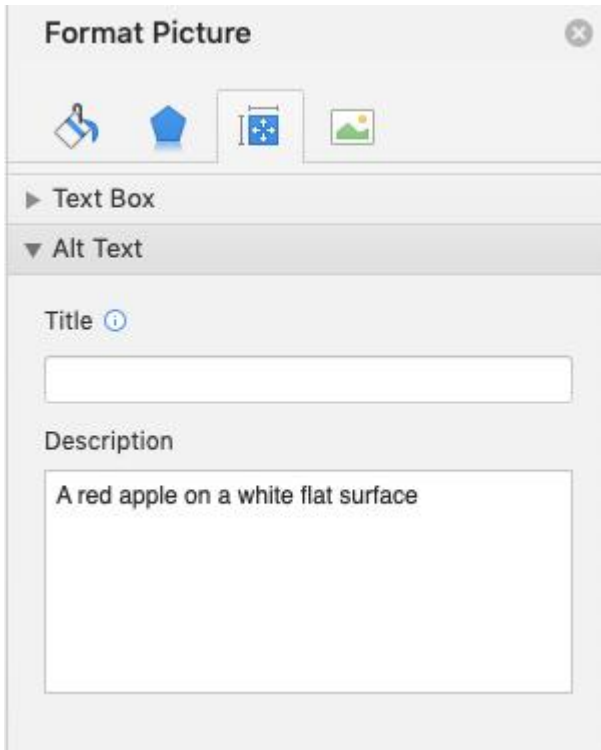
**Format Picture** ✕

▶ Text Box

▼ Alt Text

Title ⓘ

[                    ]

Description

A red apple on a white flat surface

## Technique 4. Avoid "Floating" Elements

When images and objects are inserted into Word for Mac documents, they default to being an "in line with text." In this case, you do not need to change anything.

However, if you are editing a document that includes a "floating" image or object, use the procedure below:

*To prevent an image or object from "floating"*

1. Under **Arrange** (*top navigation bar*).
2. Select **Wrap text**.
3. Select **In Line with Text**.
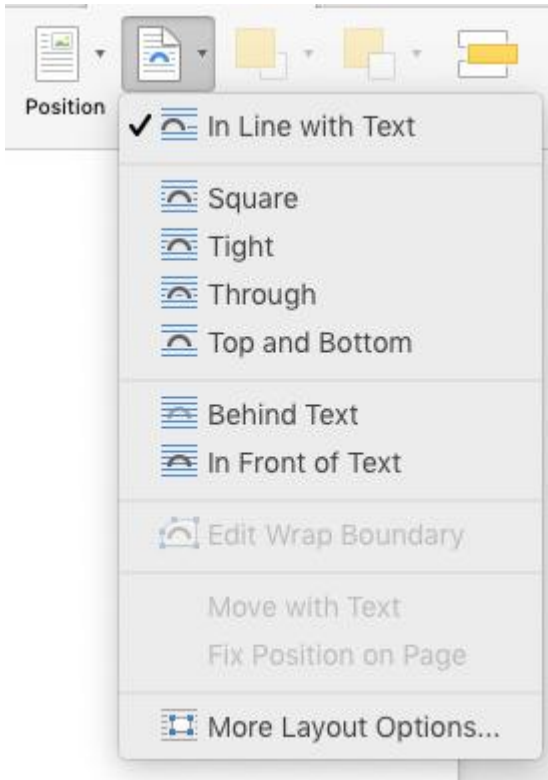
**Editor's note:** For later versions of Word, the instructions are simplified slightly, as follows:

1. Select the image.
2. Under the Picture Format tab, you'll see the drop-down menu for **Wrap text**.

# Technique 5. Use Headings

Any documents that are longer than a few paragraphs require structuring to make them more straightforward for readers to understand. One of the easiest ways to do this is to use "True Headings". True headings are more than just bolded, enlarged, or centred text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

## *To apply headings*

1. Select text.
2. In the **Styles** panel select the heading you wish to apply (in the Home bar)



*Note*: If the Styles panel is not in view, go to menu item: **View** > **Toolbox**, **Styles**.
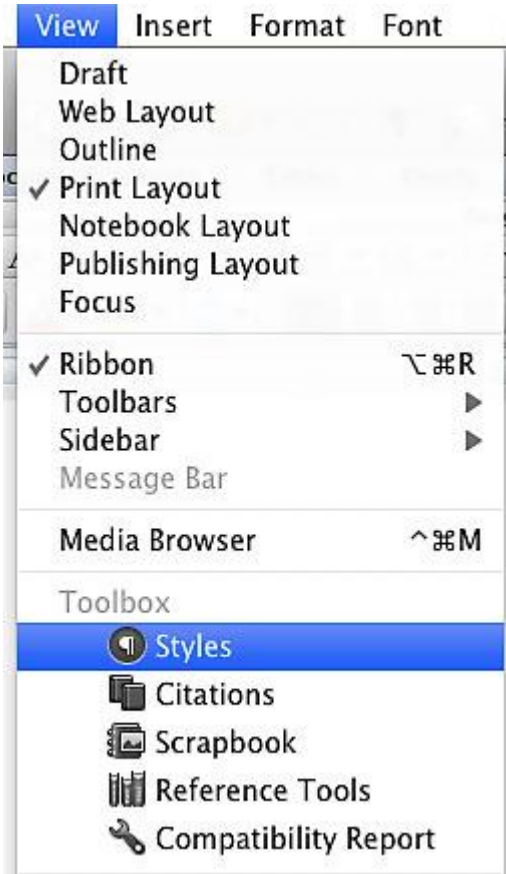
## To modify heading styles

This refers to changing the appearance of all text marked with a certain style.

1. In the **Styles** dialog box, select the **heading** you want to modify.
2. Select the drop down menu on the side of the selected heading.
3. Select **Modify Style...**
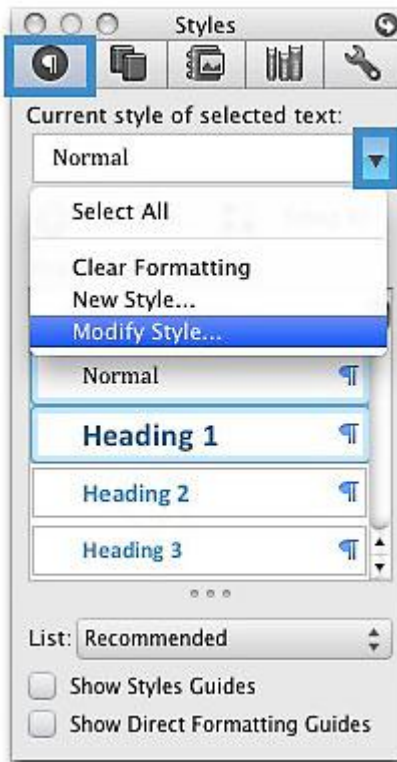


4. In the **Modify Style** dialog, make the appropriate changes to style characteristics.
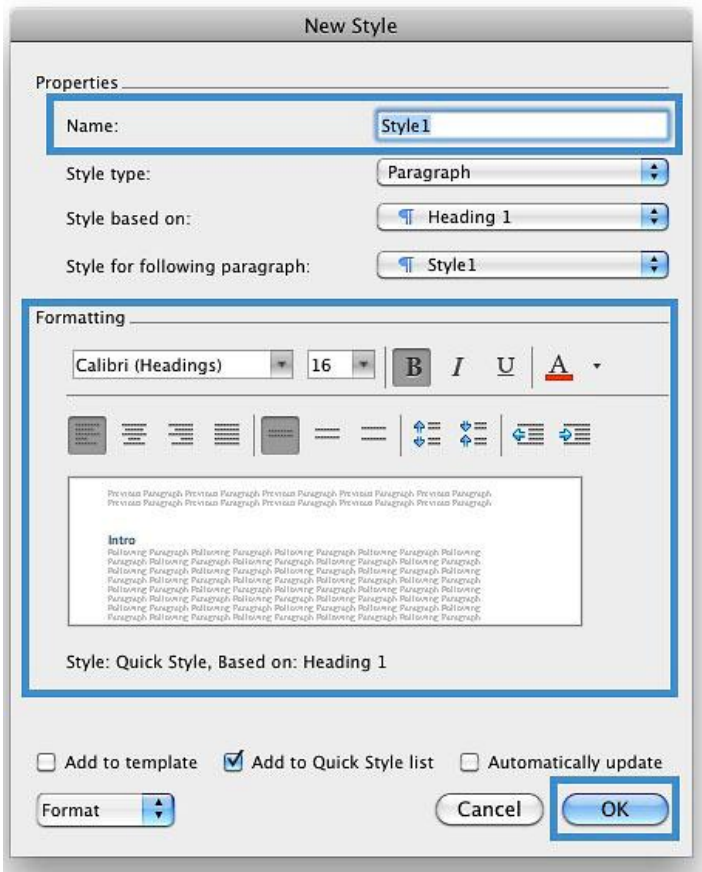5. Select **OK.**
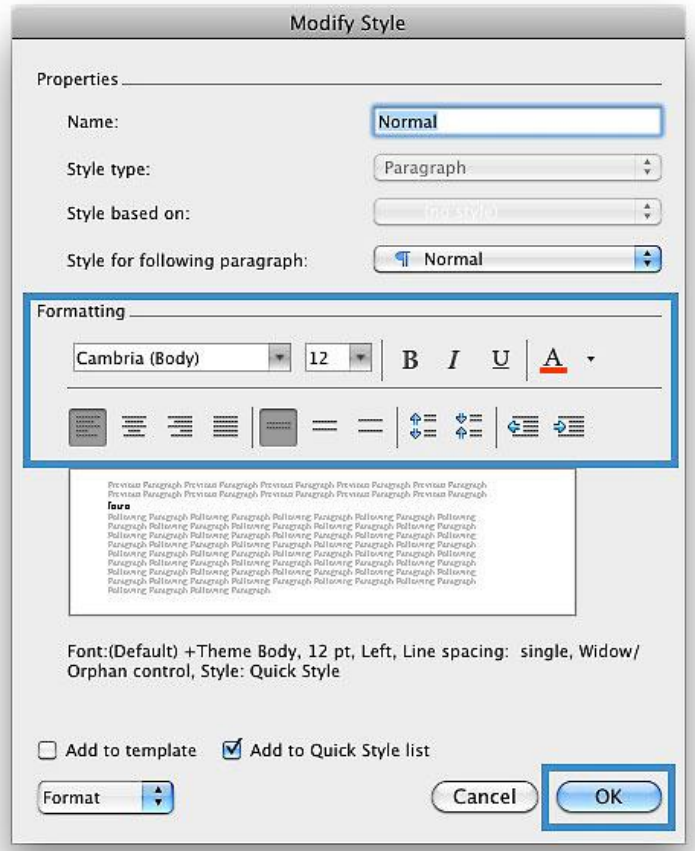
*To create a new style*

1. In the **Styles** dialog box (*View* > *Toolbox*, *Styles*).
2. Select **New Style...**
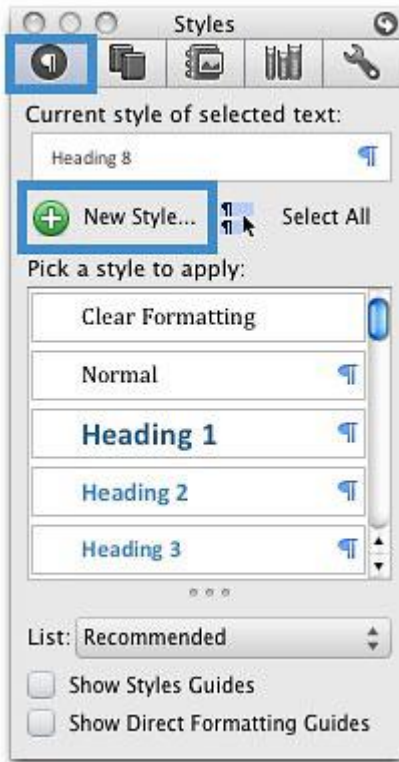
3. In the **Name** box, enter a name for the new style.
4. Format the characteristics of the new style.
5. Select **OK.**

## Technique 6. Use Named Styles

Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

Default named styles can be applied the same way as headings (see [Technique 5](#)).

## Technique 7. Use Built-In Document Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

> *Tips for tables*
>
> - Only use tables for tabular information, not for formatting, such as to position columns.
> - Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
> - Keep tables simple by avoiding merged cells and

dividing complex data sets into separate smaller tables, where possible. Whenever possible, use just one row of headings.

- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- For more complicated tables, consider creating a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (*e.g.*, "A *sample order form with separate columns for the item name, price and quantity*").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page.

## *Adding a table*

1. Go to Table (*top navigation bar*).
2. Under **Table Options** select **New**.
3. In the "**New**" drop down menu drag the columns and rows need.
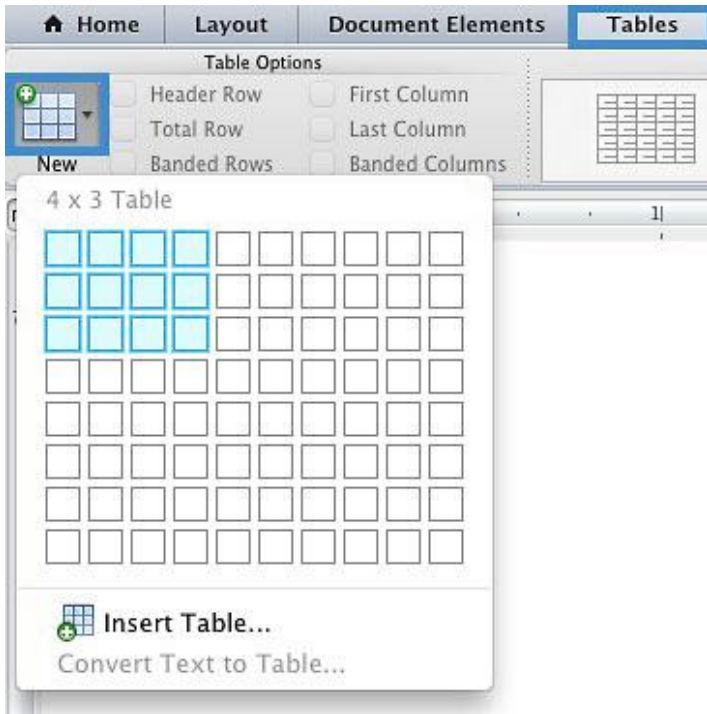
*Note*: To style the table select the table on the page and choose the design available in the **Table Styles** panel.



**Editor's note:** For later versions of Word for Mac, the insert table functions are in found in the **Insert** tab.
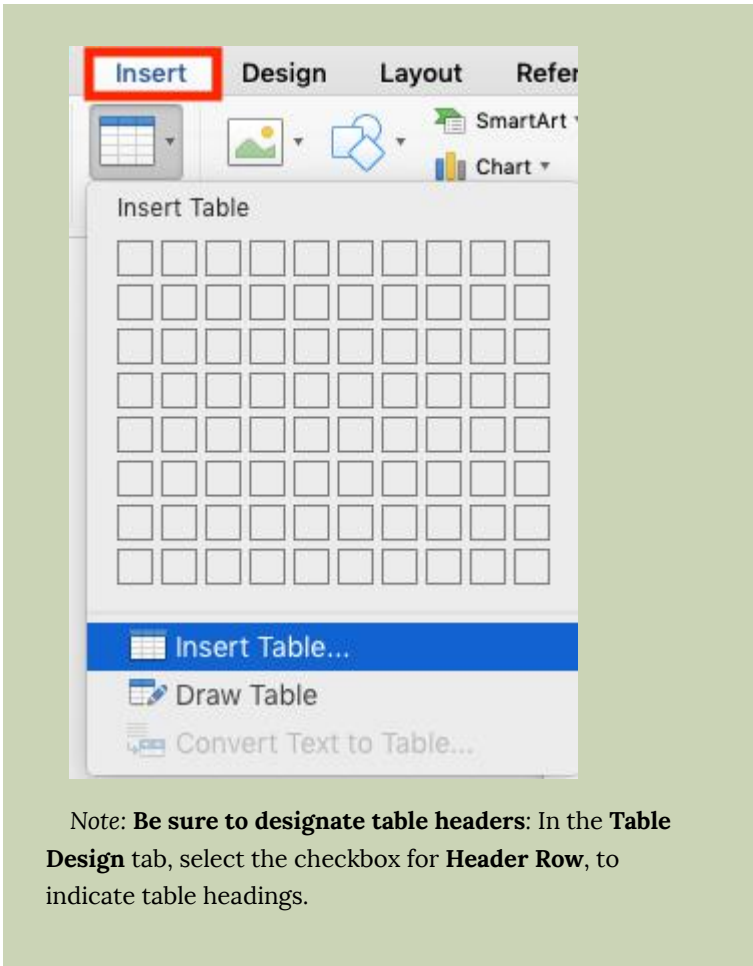
*Note*: **Be sure to designate table headers**: In the **Table Design** tab, select the checkbox for **Header Row**, to indicate table headings.

## 7.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Select Home (*top navigation bar*).
2. Under **Paragraph** select the style (*e.g., bullets, number*).
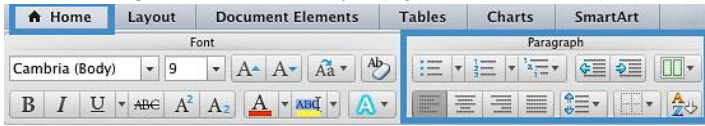


## 7.3 Columns

Use Columns feature for placing text in columns. However, because columns can be a challenge for users of some assistive technologies, you should consider whether a column layout is really necessary.

## 7.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

## 7.5 Use a Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content.

*To insert a table of contents*

1. Place the cursor in your document where you want to create the table of contents.
2. **Document Elements** > **Table of Contents**.
3. In the **Table of Contents** select the style you want to use.
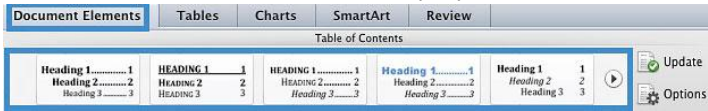


*Note*: in order for the table of content to automatically set up the user must change all the heading to Heading 1.
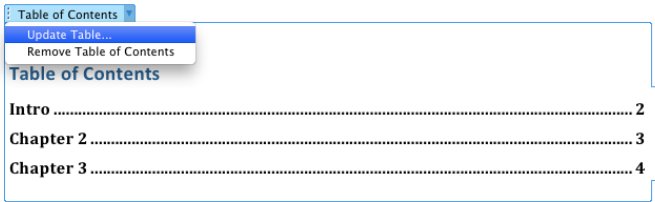


**Editor's note:** In later versions of Word for Mac, the **Table of Contents** drop-down menu is located under the **References** menu.
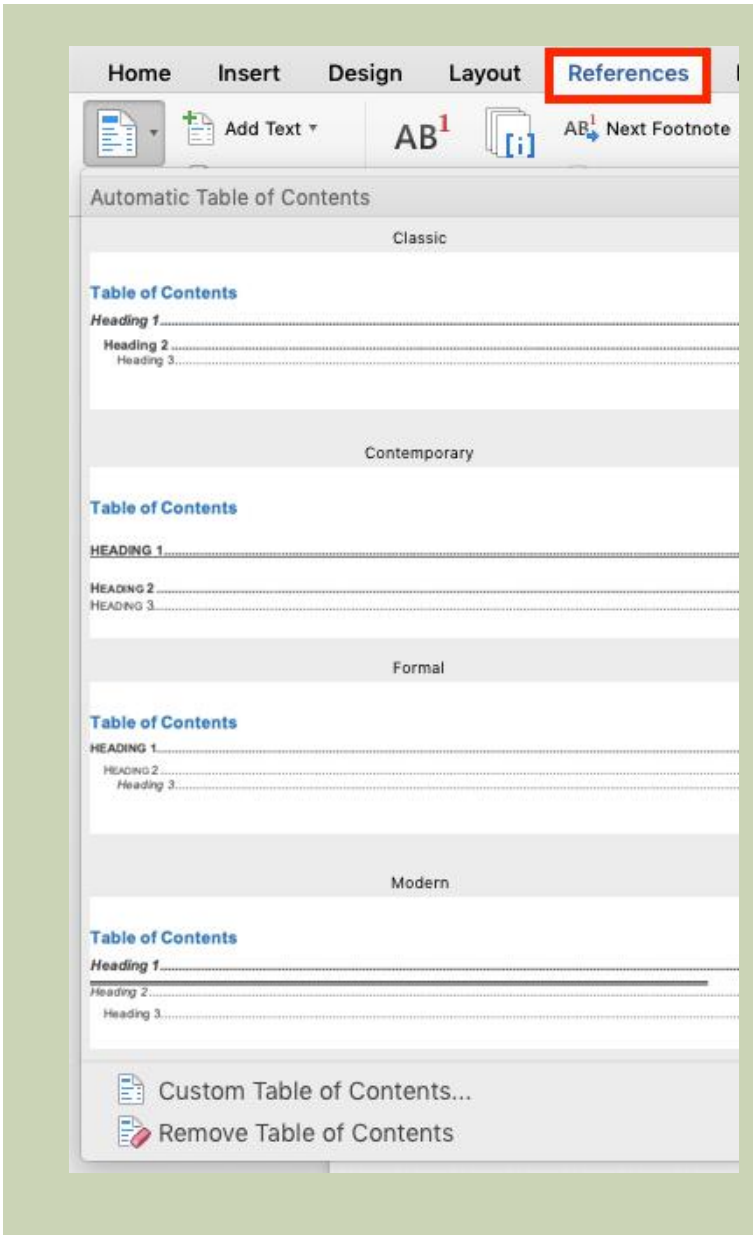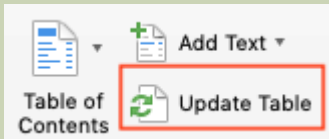
*To update table of contents*

1. Select the table.
2. Select the drop down menu beside **Table of Contents**.
3. Select **Update Table...**



**Editor's note:** In later versions of Word for Mac, the **Update Table** button is located under the **References** tab.
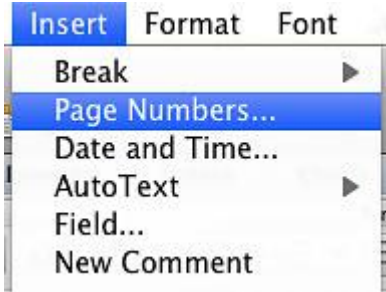


# 7.6 Use Page Numbering

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.
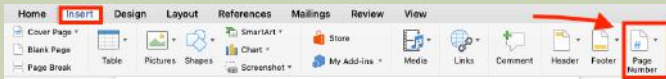
*Insert page numbers*
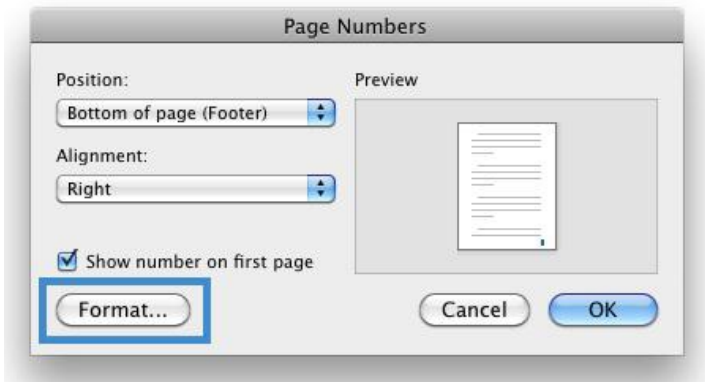
1. Go to menu item: **Insert** >**Page Numbers...**



2. In the **Page Numbers** dialog, select the page number characteristics (*Position, Alignment, Show number on first page*).
3. Select **OK**.

**Editor's note:** For later versions of Word for Mac, go to the **Insert** tab to find the **Page Number** button.



*Formatting page numbers*

1. In the Page Numbers dialog, select **Format...**

**Page Numbers**

Position:

Bottom of page (Footer)

Alignment:

Right

☑ Show number on first page

Format...

Preview

Cancel    OK

2. Select the format characteristics in the Page Number Format dialog.
3. Select **OK**.
   *Note*: These changes are applied to the predefined page format styles. It does not create a new page format style.

## 7.7 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change title*

1. Go to menu item: **File** > **Properties**.
2. In the Document **Properties** dialog, select **Summary**.
3. Enter the title in the **Title** text box.
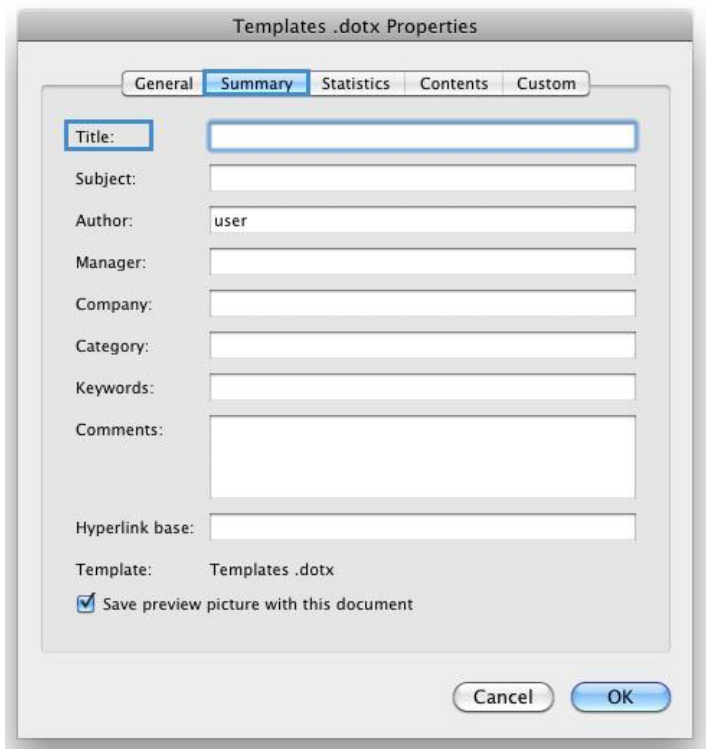
*Tip*: you can also fill in the subject, author and other descriptions if necessary

## Technique 8. Make Charts Accessible

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information.

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind.
- When creating bar charts, it is helpful to apply textures rather than colors to differentiate the bars.

- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2).
- Consider providing the data that you used to create the chart in tabular form (e.g. as an appendix).

## Technique 9. Make Content Easier to See

Here are some other things to keep in mind:

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 15 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).

- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern. In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Comparison
- TPG Contrast Analyser

## 9.3 Avoid Relying on Color or other Sensory Characteristics

Content should not rely solely on sensory characteristics such as the colour or shape of content elements. Here are two examples:

- Do not track changes by simply changing the colour of text you have edited and noting the colour. Instead use Word for Mac's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.4 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or colour combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colours, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

## Technique 11. Check Accessibility

At this time, Word 2011 for Mac does not offer a mechanism to check for potential accessibility errors in your document prior to publishing.

**Editor's note:** For later versions of Word for Mac, there is

an accessibility checker, located under the **Tools** menu. For detailed instructions, see the following resources:

- [Microsoft: Improve accessibility with the Accessibility Checker](#)
- [Microsoft: Make your Word documents accessible to people with disabilities](#)
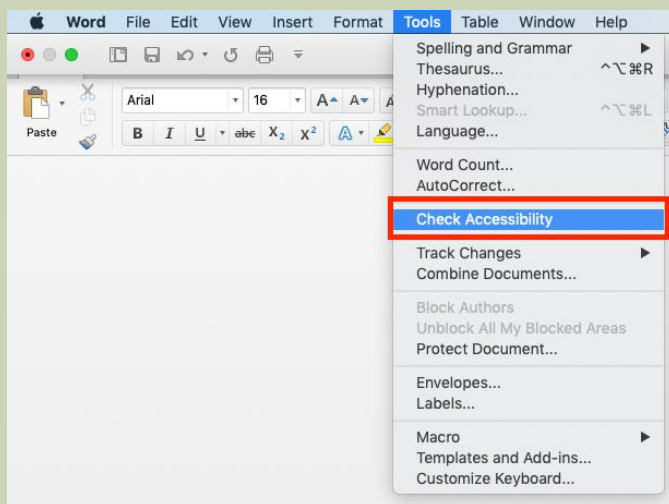


It is also possible possible to **create tagged PDFs** using later versions of Word for Mac:

1. Select File: **Save As** (or press Command+Shift+S)
2. Enter the file name in the **Save As** field, then choose where you want the file to be saved.
3. In the Save As dialog, go to the **File Format** drop down box and select PDF.
4. Select the radio button **Best for electronic distribution and accessibility (uses Microsoft online service)**. This ensures the PDF is tagged.

> *Note*: If you do not see this option, you may need to update your version of Word.
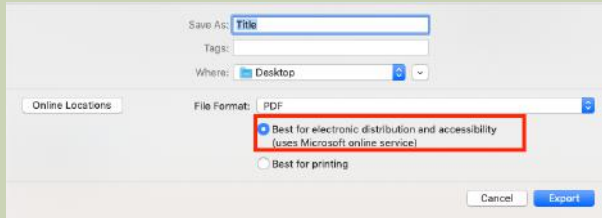


5. Select **Save**.

## Accessibility Help

If you are interested in what features are provided to make using Word more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **File.**
2. Select **Help** from the list on the left.
3. Under the **Support** section, select the **Help** icon.
4. Enter "Accessibility" as your search term in the **Help** dialog box.

## References and Resources

1. Microsoft Accessibility Page
2. Microsoft: Use a screen reader to explore and navigate Word
3. Microsoft Accessibility Tutorials
4. Microsoft: Keyboard shortcuts in Word

5. Ryerson University: Microsoft Word Accessibility Tipsheet (PDF)
6. Microsoft Word: Video Tutorials

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**Authors:** Vellicia Christanto, Jan Richards

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United Nations Educational, Scientific and Cultural Organization

Inclusive Design Research Centre (OCAD University)

# Microsoft Word 2010

## Usage Notes

 This icon highlights "curb cut" opportunities in these techniques. "Curb cuts" are situations in which accommodations made for accessibility reasons will also result in significantly better and more efficient outcomes for everyone. The name comes from sidewalk "curb cuts" that were added for people in wheelchairs, but are commonly used by people with baby strollers, handcarts, wheeled luggage, and others.

At the time of testing (September 30, 2010), Word 2010 provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. In addition, Word 2010 includes an [accessibility checking feature](#).

This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and

- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

The default file format for Word 2010 is **Office Open XML (DOCX)**.

In addition, Word 2010 offers many other word processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in Technique 12 (below).

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or (2) Shift+F10.

# Disclaimer and Testing Details

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Microsoft Word 2010 (ver.14.0.4762.1000, Windows XP, Aug. 2010) while creating a DOCX document.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca).

## Technique 1. Use Accessible Templates

**WCAG 2.0 Applicability:**

- All success criteria

All office documents start with a template. These can be as simple as a blank standard-sized page or complex nearly-complete document with text, graphics and other content (e.g., a "Meeting Minutes" template). Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document

produced when the template is used (see [Technique 10. Check Accessibility](#)).

Word 2010's default template for new documents is a blank page. The basic installation also includes blank business card, blank label templates, and other blank office-related documents. These are all accessible by virtue of being blank. It is possible to create your own accessible templates.

**Curb Cuts:** Updating templates is also a good opportunity to improve document consistency, copy-editing, and branding.

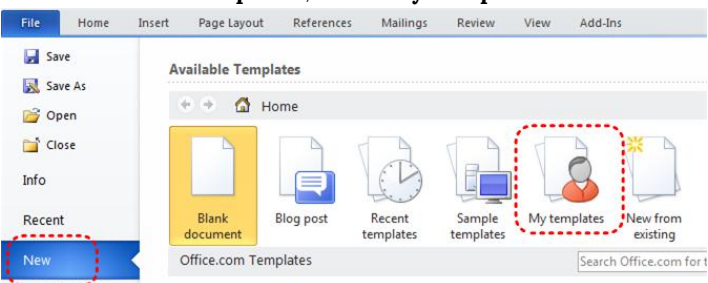## *To create an accessible template*

1. Create a new document (from the default blank template or from one of the prepackaged templates).
2. Ensure that you follow all of the techniques in this document.
3. When you are finished, check the accessibility of the document (see [Technique 10. Check Accessibility](#))
4. Go to menu item: **File > Save As.**
5. Select **Templates.**
6. In the **Save as type** list, select **Word Template.**
7. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g. "Accessible Memo Template") may increase the prominence of the accessibility status. As well, filling in the text box labeled Tags with the term "accessibility" may improve its discoverability as an accessible file.
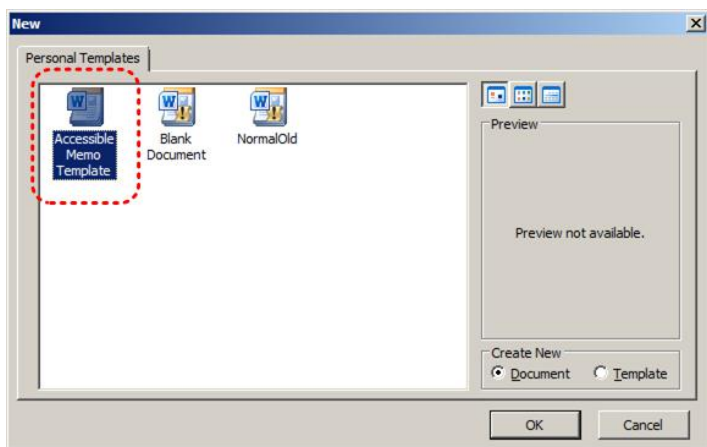8. Select **Save.**
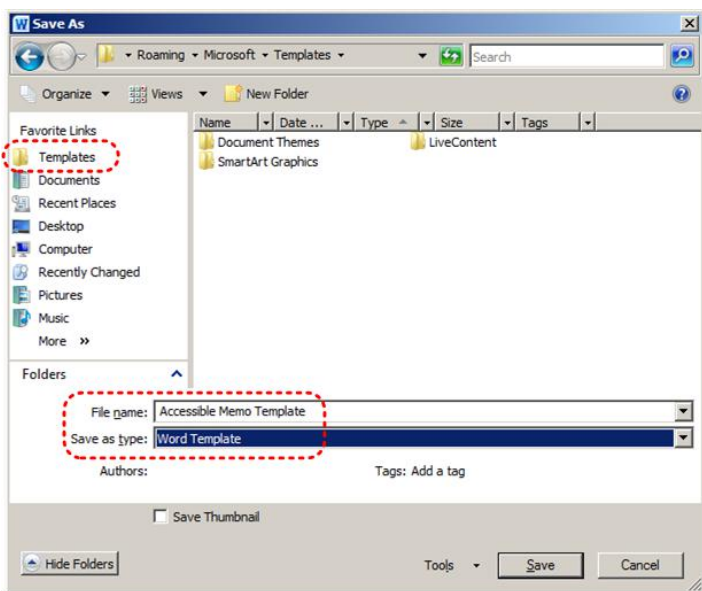
*To select an accessible template*

Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New.**
2. Under **Available Templates**, select **My Templates.**

3. In the **New** document dialog, select your accessible template from the list.
4. Select **OK.**



5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point.
6. **As you add your content (e.g. text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Specify Document Language

**WCAG 2.0 Applicability:**

- 3.1.1 Language of Page
- 3.1.2 Language of Parts

In order for assistive technologies (e.g. screen readers) to be able to present your document accurately, you must indicate the natural

(human) language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

**Curb Cuts:** The specified document language is also used by the spelling and grammar checker. In Canada, make sure to choose "English (Canada)" to avoid having to override American spellings of words such as "colour."

To change the default language

1. Go to menu item: **File.**
2. Select **Options** from the list in the left window pane.
3. Select **Language** from the list in the left of the **Options** dialog.
4. Under **Choose Editing Languages**, select the editing language you want to use*Note*: to add an editing language, select the language from the drop down list labeled "**Add additional editing languages**."
5. Select **Set as Default.**
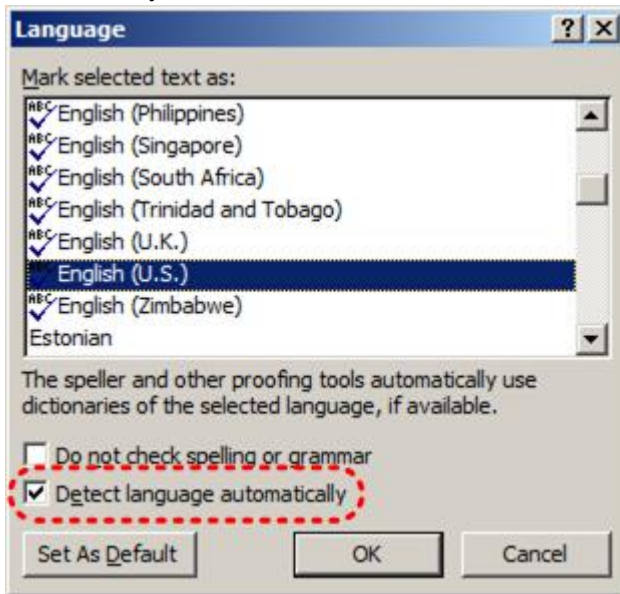6. Close all Office 2010 programs and open them again for the changes to take effect.
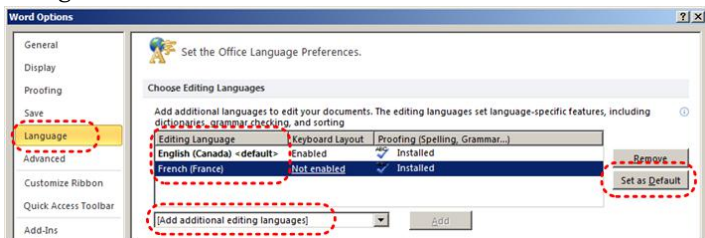


Word 2010 has an automatic language detection mechanism, which can automatically detect the language of your text. If you type a section of text in a different language than the rest of your

document, Word 2010 will programmatically mark the language of that section of text appropriately.

## To turn on automatic language detection
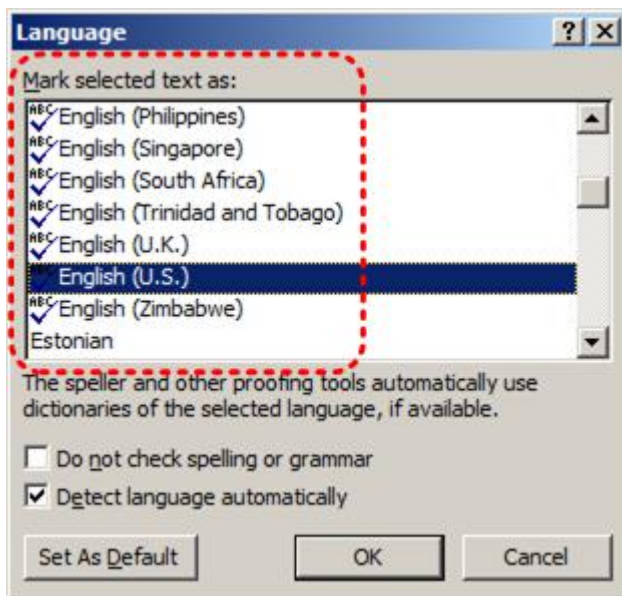
1. Go to menu item: **Review.**
2. In the **Language** section, select the **Language** button.
3. Select **Set Proofing Language.**
4. In the **Language** dialog, select the **Detect language automatically** check box.



## To apply a language directly to selected text

1. Select the text.
2. Go to menu item: **Review.**
3. In the **Language** section, select the **Language** button.

4. Select **Set Proofing Language.**
5. In the **Mark selected text as** box, select the language from the list.
6. Select **OK.**



## Technique 3. Provide Text Alternatives for Images and Graphical Objects

**WCAG 2.0 Applicability:**

- 1.1.1 Non-text Content

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend

to convey by the image is also conveyed to people who cannot see the image. This is done by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (e.g. artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

**Curb Cuts:** Sometimes it may not be clear what a particular image is meant to convey and alternative text can provide that clarity. Also, alternate text has been shown to be included in search engines rankings.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?".
- If the image does not convey any useful information, leave the alternative text blank.
- If the image contains meaningful text, include all of the text in the alternative.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences.
- If more description is required (e.g. for a chart or graph), provide a short description in the alternative text (e.g. a summary of the trend) and more detail in the long description, see below.

- Test by having others review the document with the images replaced by the alternative text.

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?".
- In some situations, the information being conveyed will be how an image looks (e.g. an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone.
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click\* the object.
2. Select **Format Picture...**
3. Select the **Alt Text** option from the list.
4. Fill in the **Description**.

If a Word 2010 document is saved to HTML, the **Title** and **Description** fields are combined into a single entry within the HTML <alt> tag. **[Tested: September 30th, 2010]**
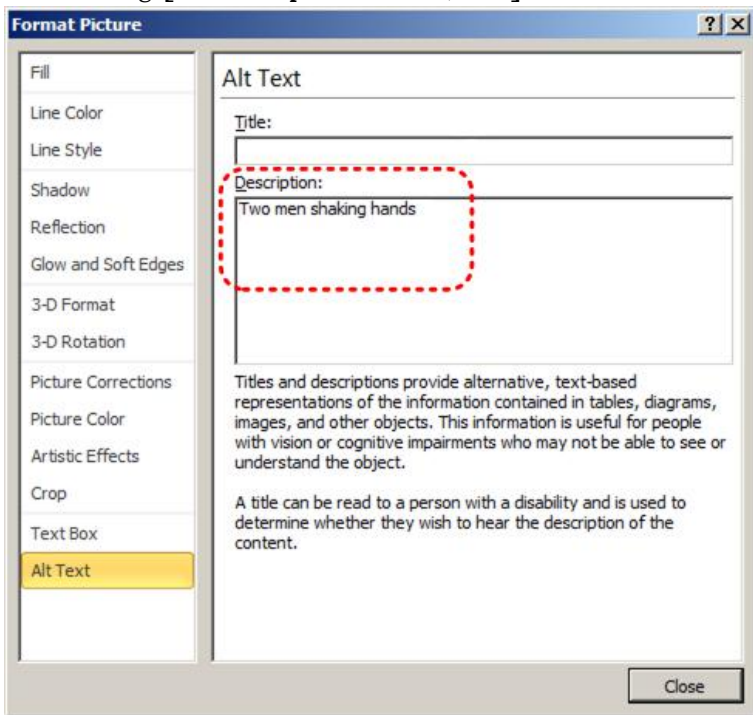


When inserting a very small image, or resizing a larger image to be much smaller, Word 2010 assumes that the image is intended to be a bullet-point for a bulleted list. Once Word 2010 defines the image as a bullet, the option to add alternative text disappears. Select **Undo**, to redefine the bullet as an image. When you right-click\* the image,

select **Format Picture…** and select the **Alt Text** tab in the **Format Picture** dialog. Alternative text can be found, or can be entered, into the **Alternative text** box.

# Technique 4. Avoid "Floating" Elements

**WCAG 2.0 Applicability:**

- 1.3.2 Meaningful Sequence

When certain elements (e.g., images, objects, text boxes) are inserted into Word 2010 documents they default to being an "inline object". Inline objects keep their position on the page relative to a position in the text. This is beneficial for users of assistive technologies (e.g., screen readers), because the screen reader can simply read the object (or its alternative text) when it reaches that point in the text flow, so the context is clear.

However, Word 2010 also provides the option to have these elements "float" outside of the text order, with text flowing around, under or over it. This is a problem for screen reader users because their screen reader will often read the text (or alternative text) out of context, which can be confusing. These text flow options should be avoided.

Similarly, avoid placing drawing objects such as arrows, lines and shapes directly into the document (e.g. as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects (e.g., pictures).

> **Curb Cuts:** In-line elements are often easier to work with than floating elements, which can end up being shifted into strange positions as editing earlier parts of a document cause re-pagination.

*To prevent an image or object from "floating"*

1. Select the object.
2. Go to menu item: **Page Layout.**
3. Select **Position** from the **Arrange** section.
4. Select **In Line with Text.**

# Technique 5. Use Headings

**WCAG 2.0 Applicability:**

- 1.3.1 Info and Relationships
- 2.4.1 Bypass Blocks
- 2.4.6 Headings and Labels
- 2.4.10 Section Headings

Any documents that are longer than a few paragraphs require structuring to make them easier for readers to understand. **One of the simplest ways to do this is to use "True Headings" to** create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centered text; they are structural elements

that order and levels provide a meaningful sequence to users of assistive technologies.

**Curb Cuts:** Using true headings provides several important benefits: (1) Headings are used by Word 2010 to auto-generate a table of contents (see <u>Technique 6.5 Use a Table of Contents</u>); (2) Headings are used by the "Navigation Pane" which is especially helpful for long documents (see <u>Word 2010's "Navigation" Feature</u>); and you can update all of the headings of a particular type at once, which keeps them consistent.

*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", etc.)
- Nest headings properly (e.g. the sub-headings of a "Heading 1" are "Heading 2", etc.)

*To apply headings to selected text*

1. Select text.
2. Right-click* and select **Styles.**
3. Select the heading style from the list.

## *To apply headings using the Styles toolbar*

1. Select text.
2. Go to menu item: **Home.**
3. In the **Styles** section, select the heading you wish to apply*Note:* You can scroll through the multiple heading styles using the arrows on the right side of the **Styles** section. You can also change the **Style** design by selecting the **Change Styles** button on the right.

## *To modify heading styles*

1. Go to menu item: **Home.**
2. In the **Styles** section, right-click* the style you wish to use from the **Styles Gallery.**
3. Select **Modify.**
4. In the **Modify Style** dialog, make the appropriate changes to style characteristics.
5. Select **OK.**

## *To return to the default heading styles:*

1. Go to menu item: **Home.**
2. In the **Styles** section, select **Change Styles.**
3. Select **Style Set.**
4. Select **Word 2010** from the list.

# Technique 6. Use Built-In Document Structuring Features

**WCAG 2.0 Applicability:**

- 1.3.1 Info and Relationships
- 1.3.2 Meaningful Sequence
- 2.4.2 Page Titled

**Curb Cuts:** Using built-in structural features is much more reliable that trying to use typography for formatting (e.g. tabs to separate table cells, repeated new lines for a page break).

## 6.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g. screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g. "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page

(see [Technique 4. Avoid "Floating" Elements](#)).

## *To add a table with headings*

1. Go to menu item: **Insert.**
2. In the **Tables** section, select the **Tables** icon.
3. Select the number of rows and columns you would like your table to have.
4. Select the table and a **Table Tools** menu item should appear.
5. Go to menu item: **Table Tools > Design.**
6. In the **Table Style Options** section, select the **Header Row** check box*Note*: Whenever possible, keep tables simple with just one row of headings.

## 6.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

## *To create an ordered or unordered list*

1. Go to menu item: **Home.**
2. In the **Paragraph** section, select the **Bullets** icon for unordered lists or select the **Numbering** icon for ordered lists.

3. To choose a different list format, select the arrow beside the icon.
4. Select a format from the format **Library** that appears in the drop-down menu.

*To modify list styles*

1. Go to menu item: **Home.**
2. In the **Paragraph** section, select the arrow beside the **Bullets** icon for unordered lists or select the arrow beside the **Numbering** icon for ordered lists.
3. Select **Define New Bullet...** to create a new unordered list format.
4. Select **Define New Number Format...** to create a new ordered list format.
5. In the **New Bullet** dialog or the **New Number Format** dialog, select the list characteristics.
6. Select **OK.**

## 6.3 Columns

Use the **Columns** feature for placing text in columns.

*Note:* Because columns can be a challenge for some users with disabilities (e.g., people using magnifiers), consider whether a column layout is really necessary.

## 6.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

*To add a page break*

1. Go to menu item: **Page Layout.**
2. In the **Page Setup** section, select the arrow beside the **Breaks** icon.
3. Select the type of break to add. **Page break** is used to start a new page with the same page layout (page orientation, headers, page numbering, etc.). **Section break** is used if you want to start a new section of the document with a differing page layout.

## 6.5 Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

*To insert a table of contents*

1. Place the cursor in your document where you want to create the table of contents.
2. Go to menu item: **References.**
3. In the **Table of Contents** section, select **Table of Contents.**
4. Select the style that you want to use.

## To update a table of contents

1. Select the table.
2. Go to menu item: **References.**
3. In the **Table of Contents** section, select the **Update Table** button.

# 6.6 Page Numbering

Numbering the pages of you document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.

## To insert page numbers

1. Go to menu item: **Insert.**
2. In the **Header & Footer** section, select **Page Number.**
3. Select where you would like to insert your page numbers.
4. Select the style of page number you would like to use.

## To format page numbers

1. Go to menu item: **Insert.**
2. In the **Header & Footer** section, select Page Number.
3. Select **Format Page Numbers...**
4. In the **Page Number Format** dialog, select the page format characteristics you would like to use
   *Note*: These changes are applied to the predefined page format styles. It does not create a new page format style.

## 6.7 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File.**
2. Select **Info** from the list in the left window pane.
3. In the right window pane, select on the **Title** text box.
4. Enter the **Title***Note:* The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## Technique 7. Create Accessible Charts

**WCAG 2.0 Applicability:**

- 1.1.1 Non-text Content
- 1.3.1 Info and Relationships

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and

color, rather than color alone, to convey information.

- ◦ When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind.
- ◦ When creating bar charts, it is helpful to apply textures rather than colors to differentiate the bars
- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 8.2 Use Sufficient Contrast)
- Consider providing the data that you used to create the chart in tabular form (e.g., as an appendix).

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**Curb Cuts:** If the chart data is also provided in an appendix, it will be easier for all users to make use of the data.

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## Technique 8. Make Content Easier to See

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**WCAG 2.0 Applicability:**

- 1.3.3 Sensory Characteristics
- 1.4.1 Use of Color
- 1.4.3 Contrast (Minimum)

---

- 1.4.5 Images of Text
- 2.2.2 Pause, Stop, Hide

**Curb Cuts:** All users will benefit from content that is easier to see.

## 8.1 Format of Text

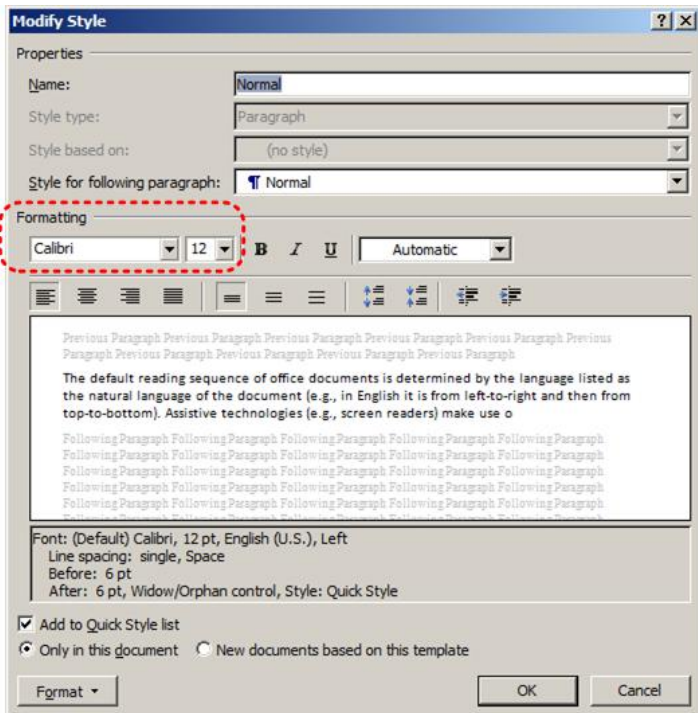When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) are typically easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because

printing is an important aspect of many workflows and changing font sizes directly will change documents details such as the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## *To change the text size for a default named style*

1. Go to menu item: **Home.**
2. In the **Styles** section, right-click* the **Style** you wish to modify.
3. Select **Modify Style.**
4. Under **Formatting** in the **Modify** dialog box, select the appropriate font size.
5. Exit with **OK.**

## 8.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as the TPG Contrast Analyser or the WebAIM: Contrast Checker.

## 8.3 Avoid Relying on Color or Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Word 2010's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

## 8.4 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g. to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 9. Make Content Easier to Understand

**WCAG 2.0 Applicability:**

- 2.4.4 Link Purpose (In Context)
- 3.1.4 Abbreviations
- 3.1.5 Reading Level
- 3.2.3 Consistent Navigation
- 3.2.4 Consistent Identification

## 9.1 Write Clearly

**Curb Cuts:** By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users.

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g. headings, footings, etc.), it should occur consistently each time it is repeated.

## 9.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

*To add hyperlinks with meaningful text*

1. Type (or paste in) a web address and press spacebar or "Enter" to convert into a hyperlink.
2. Select the link and right-click*.
3. Select **Edit Hyperlink** (Ctrl + K).
4. Edit the text in the **Text to display** box.

# Technique 10. Check Accessibility

If you wish to check the accessibility of your document or template (see Technique 1. Use Accessible Templates), Word 2010 offers an "Accessibility Checker" to review your document against a set of possible issues that users with disabilities may experience in your file.

   **Important Note:** No checker can detect all types of accessibility issues. For example it can tell if alternative text is missing, but it cannot tell if alternative text is actually correct. It also doesn't test for some issues, including colour contrast.

   The Office website provides more information about the Accessibility Checker, including the rules it uses to identify and classify accessibility issues.

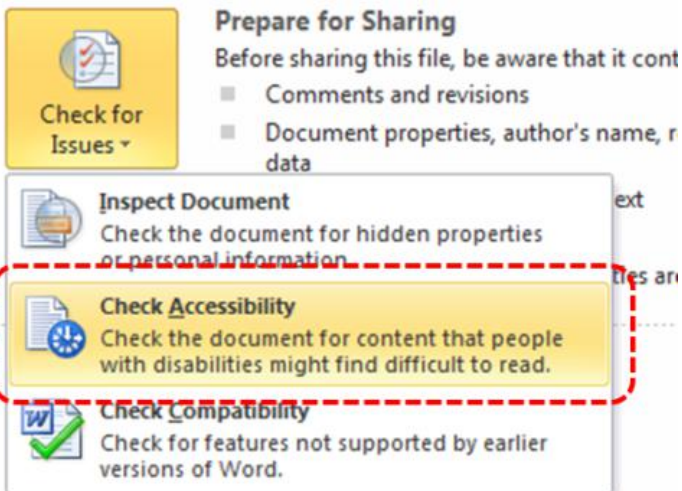   The "Accessibility Checker" classifies issues as

- **Error** – content that makes a file very difficult or impossible for people with disabilities to understand
- **Warning** – content that in most, but not all, cases makes a file difficult for people with disabilities to understand
- **Tip** – content that people with disabilities can understand, but that might be better organized or presented in a way that would maximize their experience
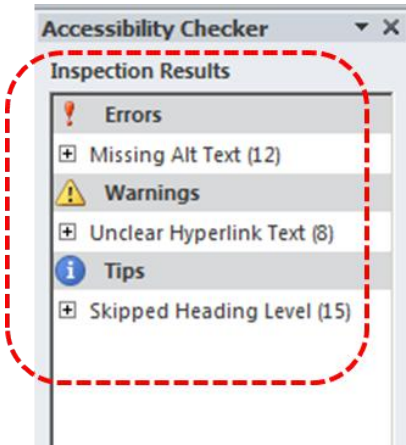
## *To use the "Accessibility Checker"*

1. Make sure the file is saved as a DOCX (Older DOC files are not compatible with the checker).
2. Go to menu item: **File.**
3. Select **Info** in the left window pane.
4. Under **Prepare for Sharing**, an alert will appear if a potential accessibility issue has been detected.
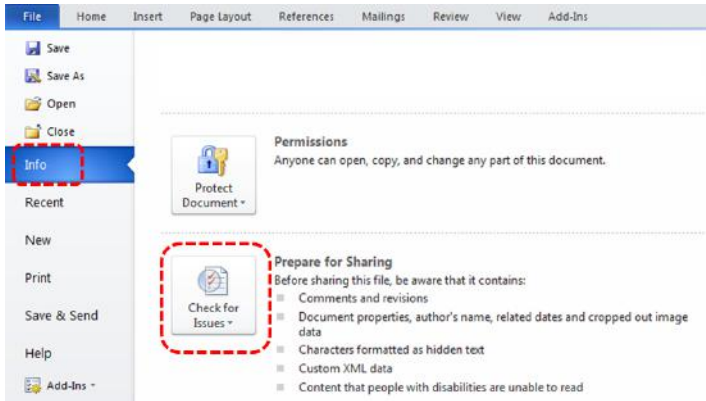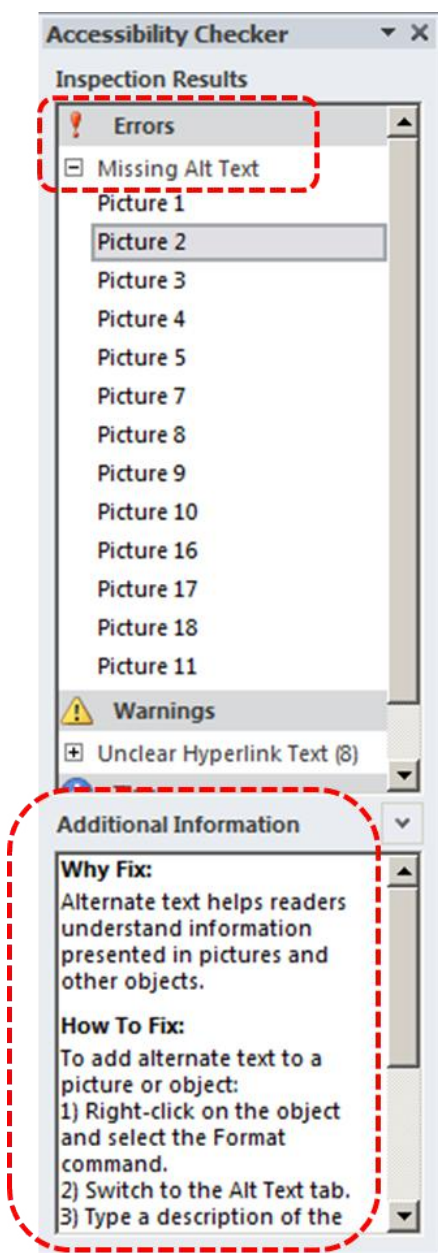
5.  To view and repair the issues, select **Check for Issues** and then **Check Accessibility.**



6.  An **Accessibility Checker** task pane will open, showing the inspection results.

7.  Select a specific issue to see **Additional Information.**
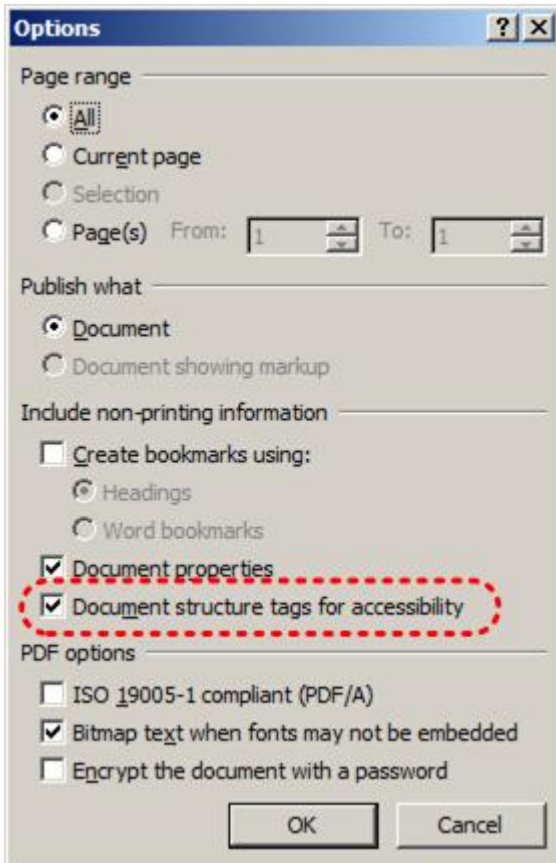8.  Follow the steps provided to fix or revise the content.

Accessibility Checker

**Inspection Results**

⚠ **Errors**

⊟ Missing Alt Text

    Picture 1

    Picture 2

    Picture 3

    Picture 4

    Picture 5

    Picture 7

    Picture 8

    Picture 9

    Picture 10

    Picture 16

    Picture 17

    Picture 18

    Picture 11

⚠ **Warnings**

⊞ Unclear Hyperlink Text (8)

**Additional Information**

**Why Fix:**

Alternate text helps readers understand information presented in pictures and other objects.

**How To Fix:**

To add alternate text to a picture or object:
1) Right-click on the object and select the Format command.
2) Switch to the Alt Text tab.
3) Type a description of the

# Technique 11. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## *Saving to PDF*

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 10. Check Accessibility.

1. Go to menu item: **File.**
2. Select **Save As.**
3. In the **File name** box, type a name for the file.
4. In the **Save as type** list, select **PDF or XPS Document.**
5. Select the **Options** button.
6. Under **Include non-printing information** in the **Options** dialog, ensure that the **Document structure tags for accessibility** check box is selected.
7. Select **OK** and **Save.**

*Saving to HTML*

1. Go to menu item: **File.**
2. Select **Save As.**
3. In the **File name** box, type a name for the file.
4. In the **Save as type** box, select **Web Page.**
5. Select **Save.**
6. Check the HTML file for accessibility (see <u>Technique 10. Check Accessibility</u>).

*To clean up your HTML file*

1. Remove unnecessary styles, line breaks, etc.
2. Remove unnecessary id, class, and attributes.
3. Remove font tags.
4. Remove styles in the <head> tag.
5. Ensure the <th> tags have a scope attribute.
6. Remove <p> tags nested inside <th> and <td> tags.
7. Check for accessibility (see Technique 11, above).
   *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 12. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- Microsoft Accessibility Page
- Office 2010 Accessibility Tutorials
- Keyboard shortcuts for Word 2010
- Customize keyboard shortcuts for Word 2010
- Accessibility features in Word 2010

# Other Application Features

# Word 2010's "Navigation" Feature

After you have populated your document with content and true headings have been applied, you may wish to rearrange the content. In order to maintain the integrity and accessibility of the altered sequence, you will need to ensure that structural information (e.g., heading levels) is adjusted accordingly.

Word 2010 provides a "Navigation" mechanism which displays all parts of the document, such as headings, paragraphs, objects, etc. in sequential order. It helps you navigate, access, and manipulate the content. You can move headings or subordinate text up or down, rearranging their sequence in a way that can be programmatically determined and therefore accessible to assistive technologies.

## To use the "Navigation" feature

1. Go to menu item: **View.**
2. In the **Show** section, select the **Navigation Pane** check box.
3. The **Navigation** pane will open to the left of your document.

## To jump to a location in a document:

1. Select one of three navigation options:
    1. Select the **Browse headings** icon
       *Note*: select the heading to view hierarchical headings and content below it.
    2. Select the **Browse pages** icon
    3. Select the **Search text**
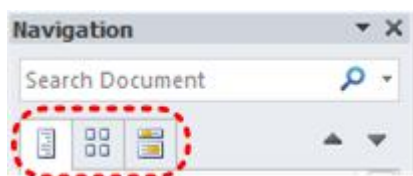
2. Scroll through the sequential list and double-click* on the location you would like to jump to

*To move content up or down in a document:*

- Select and drag the content to a new location in the list

## Accessibility Help

If you are interested in what features are provided to make using Word 2010 more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **File.**
2. Select **Help** from the list on the left.
3. Under the **Support** section, select the **Help** icon.
4. Enter "Accessibility" as your search term in the **Help** dialog box.

## References and Resources

1. Microsoft Word Help Center
2. WebAIM: "Alternative Text"
3. Microsoft Accessibility
4. Andrew Godwin, Mail Archive, Thread: [JAWS-Users] Re: Tables

in Word
5. [Ryerson University: Microsoft Word Accessibility Tipsheet (PDF)](#)
6. [Microsoft Word: Video Tutorials](#)

# Acknowledgments

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# Microsoft Word 2008 for Mac

## Usage Notes

At the time of testing (January 26, 2011), Word 2008 for Mac lacks several features that enable accessible office document authoring, most notably: the ability to add alternative text to image and objects. As a result, some of the other features that might otherwise support accessibility, such as its extensive templates are not as effective. In addition, Word 2008 for Mac does not include an accessibility checking feature.

This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

# File Formats

The default file format for Word for Mac is **Office Open XML (DOCX)**.

   In addition, Word 2008 for Mac offers many other word processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 11](#) (below):

- DOC (MS Word 97–2004)
- PDF
- HTML

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is

recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using Microsoft Word 2008 for Mac (ver.12.0.0 (071130), Mac OS X, Jan. 2011) while creating a DOCX document. Files are also easily saved as other file formats, which is useful for checking accessibility (see Technique 12, below).

This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: adod-comments@idrc.ocad.ca.


# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used.

Word for Mac's default template for new documents is a blank page. The basic installation also includes blank business card, blank label templates, and other blank office-related documents. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in Word for Mac. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.
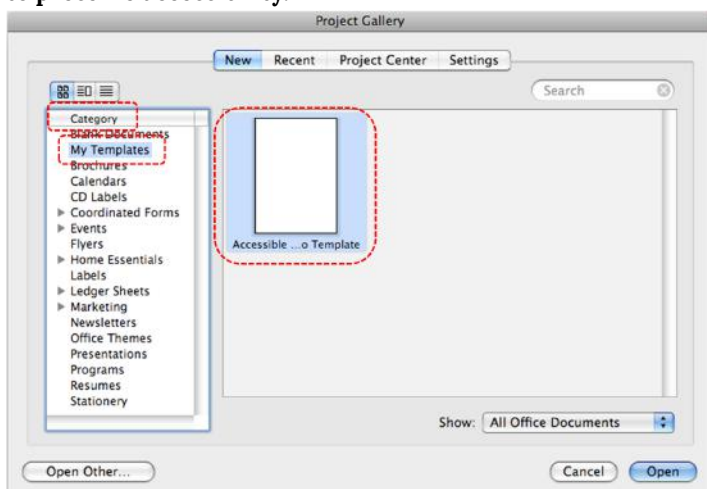
*To create an accessible template*

1. Create a new document (from the default blank template or from one of the prepackaged templates).
2. Ensure that you follow the techniques in this document.
3. When you are finished you should also check the accessibility of the document (see Technique 10, below).
4. Go to menu item: **File > Save As.**
5. In the **Save As** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Memo Template") may increase the prominence of the accessibility status.
6. In the **Format** box, select **Word Template.**
7. Select **Save.**
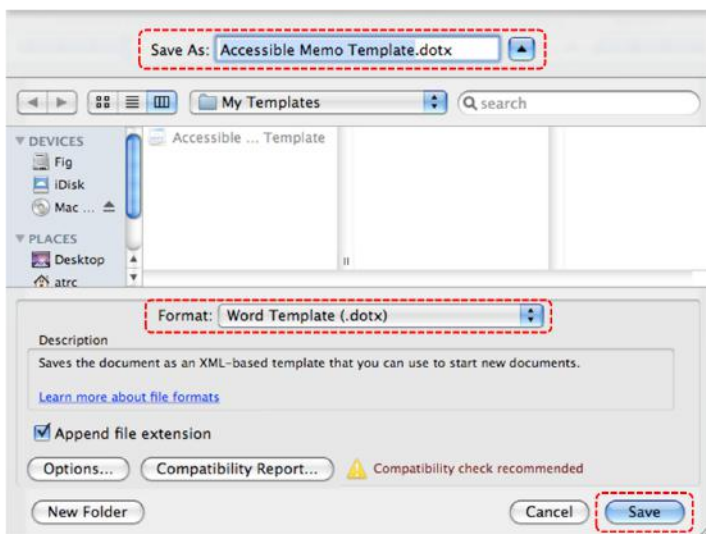


*To select an accessible template*

Note: Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > Project Gallery...**
2. Under **Category**, select **My Templates** (or select the location you saved your accessible template).
3. Select the template from the scrolling gallery.
4. Select **Open.**
5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**



## Technique 2. Specify Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.
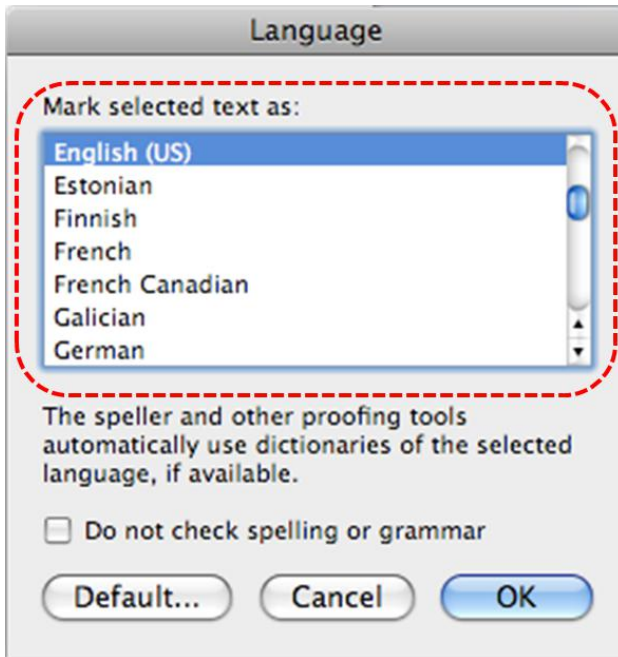
## To change the default language

1. Go to menu item: **Tools > Language...**
2. In the **Language** dialog, select the language.
3. Select **Default...**



## To apply a language directly to selected text

1. Select the text.
2. Go to menu item: **Tools > Language...**
3. In the **Mark selected text as** box, select the language from the list.
4. Select **OK.**

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

At this time, Word 2008 for Mac does not offer a mechanism which enables the user to add alternative text descriptions to images or objects. **[Tested: January 26, 2011]**

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

# Technique 4. Avoid "Floating" Elements

When images and objects are inserted into Word 2008 for Mac documents they default to being an "inline object". Inline objects keep their position on the page relative to a portion of the text.
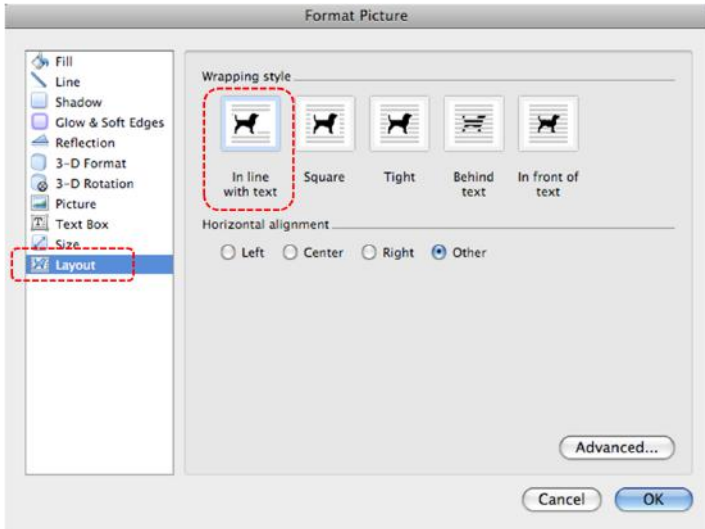
A "floating" object keeps its position relative to the page, while text flows around it. As content moves up or down on the page, the object stays where it was placed. To ensure that images and objects remain with the text that references it, always position it as an inline object.

Similarly, avoid placing drawing objects directly into the

document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

*To prevent an image or object from "floating"*

1. Select the object.
2. Go to menu item: **Format > Picture...**
3. Select **Layout.**
4. Under **Wrapping style**, select **In Line with Text**
5. Select **OK.**



# Technique 5. Use Headings

Any documents that are longer than a few paragraphs require structuring to make them more straightforward for readers to understand. **One of the easiest ways to do this is to use "True**

**Headings" to** create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centered text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", etc.)
- Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.)
- Do not skip heading levels

*To apply headings*

1. Select text.
2. If the **Formatting Palette** is not in view, go to menu item: **View > Toolbox, Formatting Palette.**
3. In the **Formatting Palette**, if the **Styles** section is not open, select **Styles.**
4. Headings can be found under **Pick style to apply.**
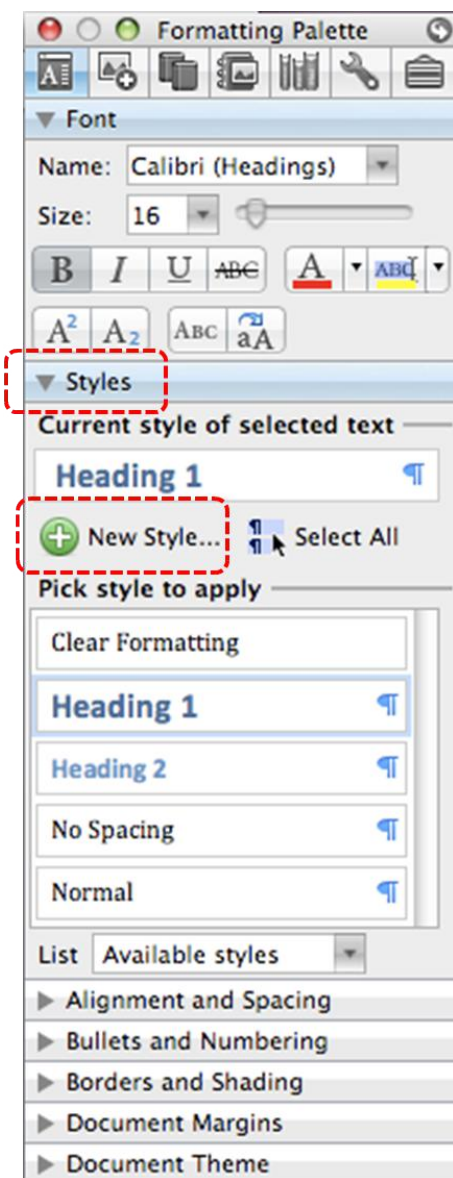5. Select the heading you wish to apply.
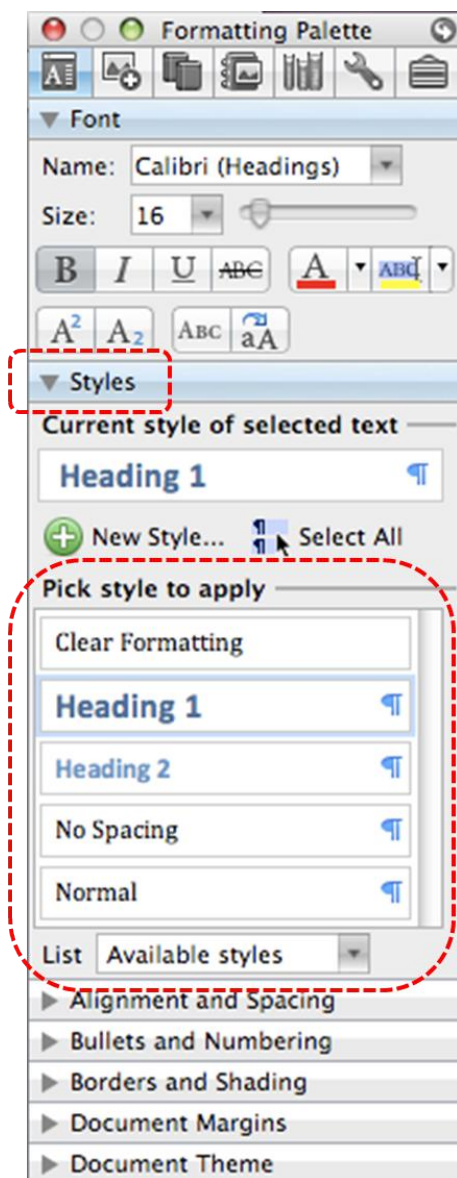
## *To modify heading styles*

1. If the **Formatting Palette** is not in view, go to menu item: **View > Toolbox, Formatting Palette.**
2. In the **Formatting Palette,** if the **Styles** section is not open, select **Styles.**
3. Headings can be found under **Pick style to apply.**
4. Select the menu icon beside the heading you want to modify.
5. Select **Modify Style...**
6. In the **Modify Style** dialog, make the appropriate changes to style characteristics.
7. Select **OK.**

## *To create a new style*

1. If the **Formatting Palette** is not in view, go to menu item: **View > Toolbox, Formatting Palette.**
2. In the **Formatting Palette,** if the **Styles** section is not open, select **Styles.**
3. Headings can be found under **Pick style to apply.**
4. Select **New Style...**
5. In the **Name** box, enter a name for the new style.
6. Format the characteristics of the new style.
7. Select **OK** and the new style will be added to the **Pick style to apply** scrolling list.

# Technique 6. Use Named Styles

As with "True Headings" (see [Technique 5](#)), you should attempt to make use of the named styles that are included with the office application (e.g., "emphasis", "caption", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

For more information on formatting using named styles, see Technique 9.

*Note*: While office application suites support headings in much the same way, the named styles often differ.

## *To use default named styles*

- Default named styles can be applied the same way as headings (see [Technique 5)](#).

# Technique 7. Use Built-In Document Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g.,

screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible. Whenever possible, use just one row of headings.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the

other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 4](#)).

## *To add a table with headings*

1. Go to menu item: **Table > Insert > Table...**
2. Select the characteristics of the table and select **OK.**
3. Go to menu item: **Table > Table Properties...**
4. In the **Table Properties** dialog, select **Row.**
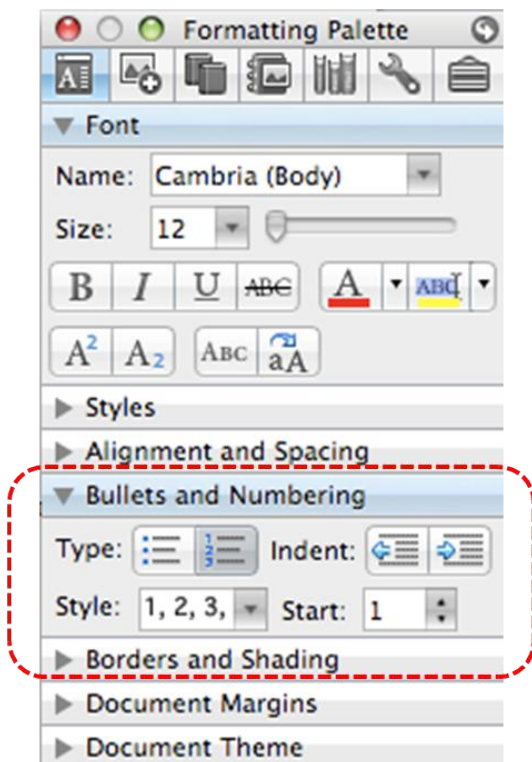5. Under **Options**, select the **Repeat as header row at the top of each page** check box
6. Select **OK.**
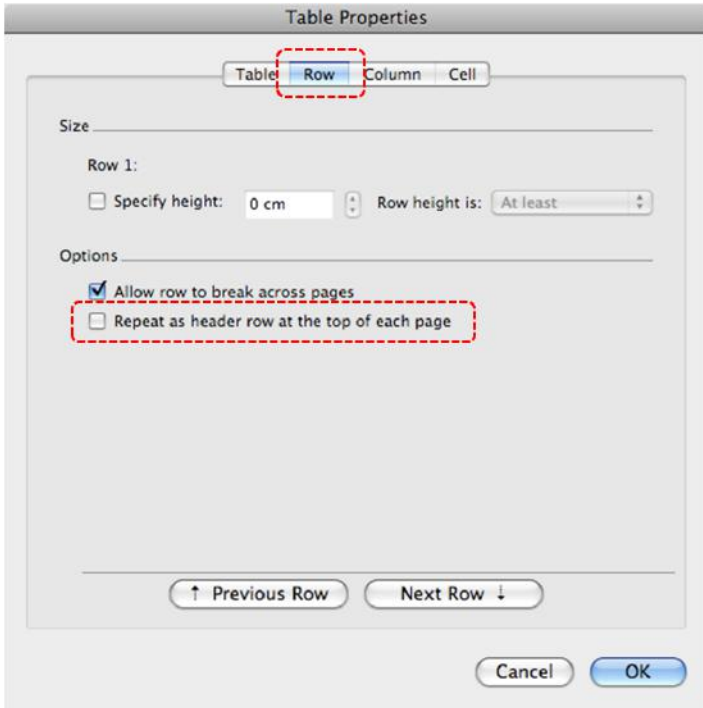
## 7.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Select the text.
2. If the **Formatting Palette** is not in view, go to menu item: **View > Toolbox, Formatting Palette.**

3. In the **Formatting Palette**, select **Bullets and Numbering** if it is not already open.
4. In the **Bullets and Numbering** dialog, select **Type, Bullets** for bulleted lists or **Type, Numbering** for numbered lists.
5. To change the style, select a list style from the **Style** drop-down list.



At this time, it is not possible to modify pre-formatted list styles or to create your own list styles. **[Tested: January 26, 2011]**

## 7.3 Columns

Use **Columns** feature for placing text in columns. However, because

columns can be a challenge for users of some assistive technologies, you should consider whether a column layout is really necessary.

## 7.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

## 7.5 Use a Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

*To insert a table of contents*

1. Place the cursor in your document where you want to create the table of contents.
2. Go to menu item: **Insert > Document Elements > Table of Contents.**
3. In the **Table of Contents** section that opens above the document pane, select the style you want to use.
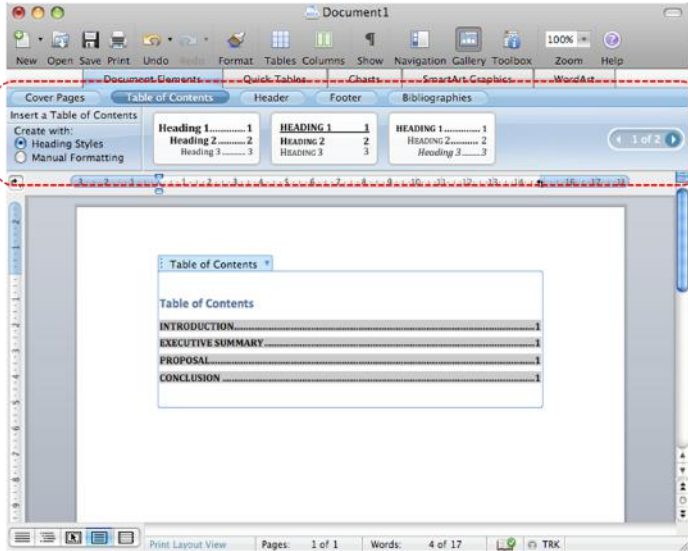
*To update a table of contents*

1. Select the table,
2. Select the icon beside **Table of Contents,**
3. Select **Update Table...**
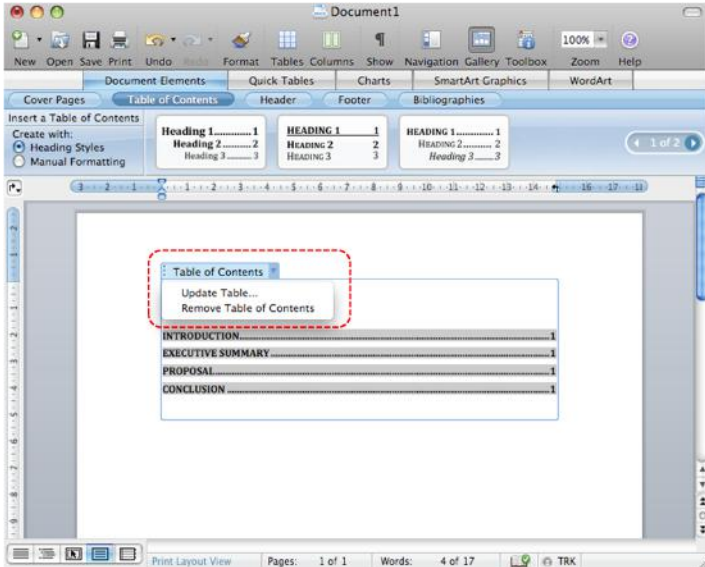
## 7.6 Use Page Numbering

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.

*To insert page numbers*

1. Go to menu item: **Insert > Page Numbers...**
2. In the **Page Numbers** dialog, select the page number characteristics (**Position**, **Alignment**, **Show number on first page**),
3. Select **OK.**
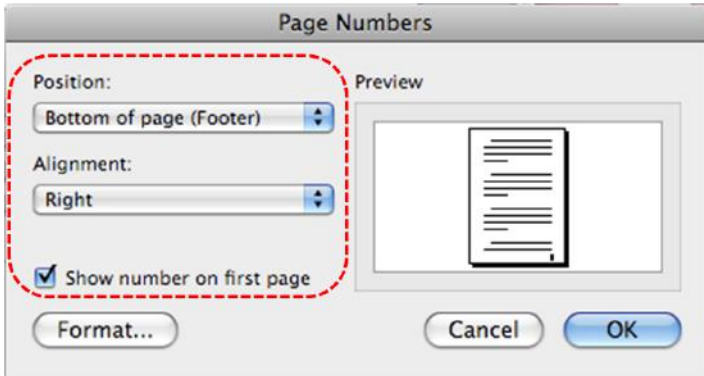
*To format page numbers*

1. In the **Page Numbers** dialog, select **Format...**
2. Select the format characteristics in the **Page Number Format** dialog.
3. Select **OK**
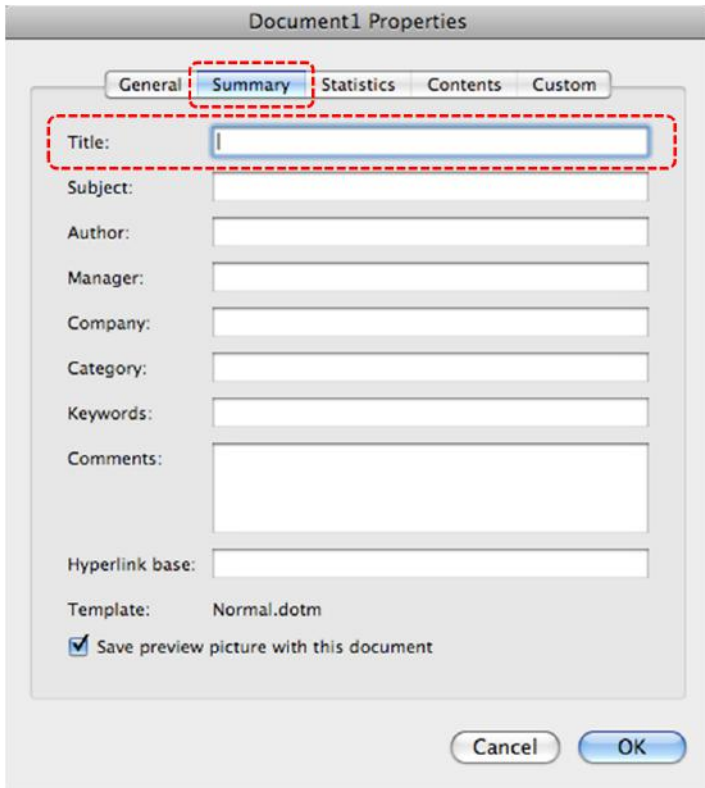4. Note: These changes are applied to the predefined page format styles. It does not create a new page format style.
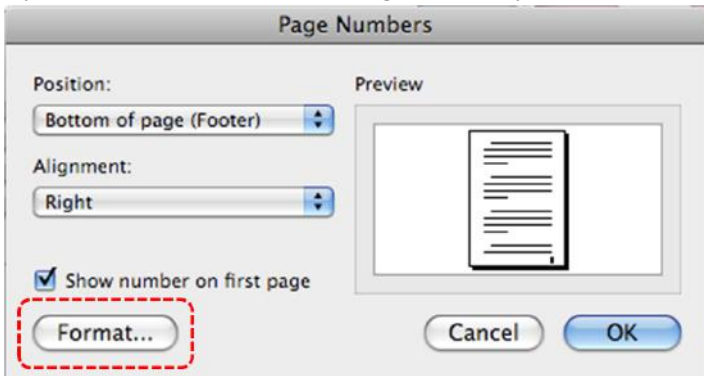
## 7.7 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File > Properties.**
2. In the **Document Properties** dialog, select **Summary.**
3. Enter the **title** in the **Title** text box.
   *Note*: The **title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information.

  - When creating line charts, use the formatting options to

create different types of dotted lines to facilitate legibility for users who are color blind.

- ◦ When creating bar charts, it is helpful to apply textures rather than colors to differentiate the bars
- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2).
- Consider providing the data that you used to create the chart in tabular form (e.g. as an appendix).

# Technique 9. Make Content Easier to See

Here are some other things to keep in mind:

## 9.1 Format of Text

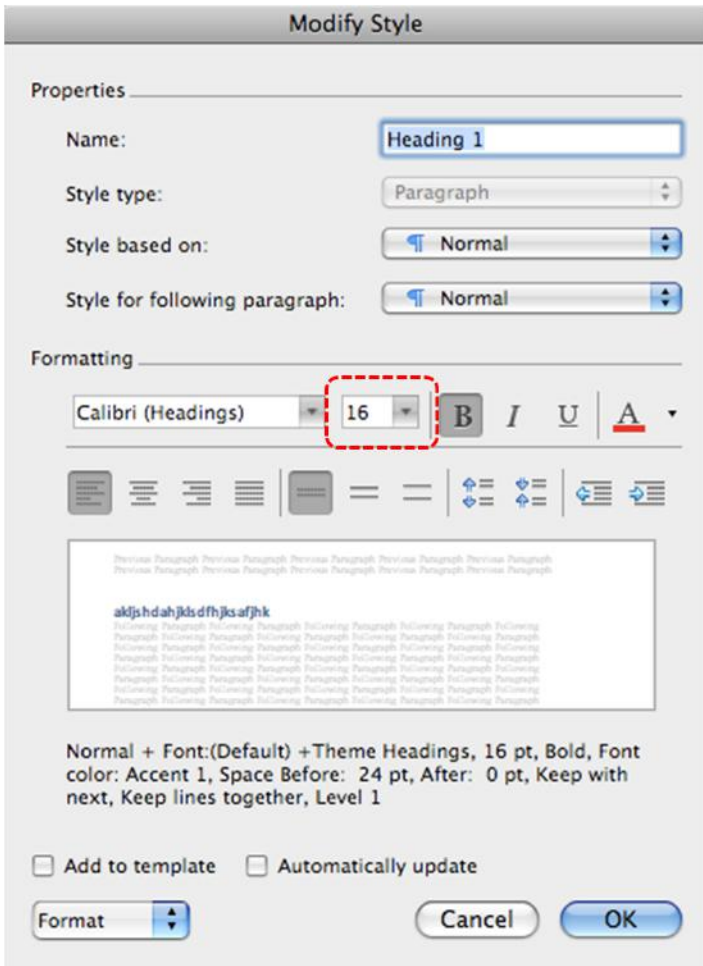When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.

- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## To change the text size for a default named style

1. Go to menu item: **View > Formatting Palette.**
2. If the Styles section is not open, select **Styles**.
3. Under Pick Style to the **Style** you wish to modify.
4. Select **Modify...**
5. Under **Formatting** in the **Modify** dialog box, select the appropriate font size.
6. Exit with **OK.**

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available.

However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Word 2008 for Mac's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to Understand

# 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.
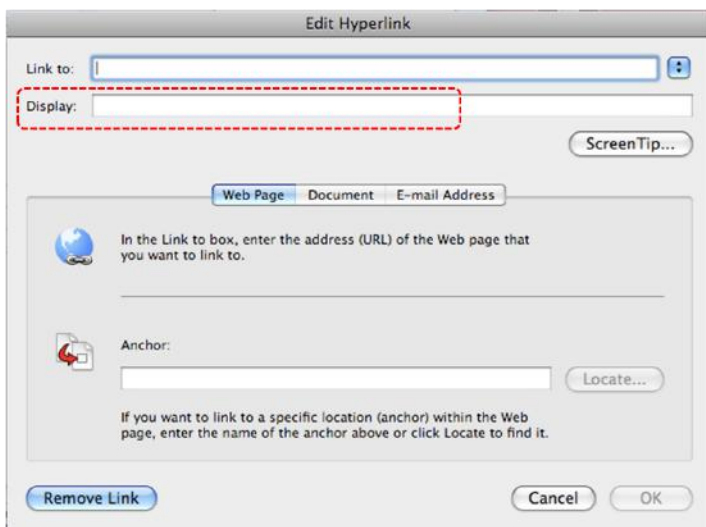
# 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

*To add hyperlinks with meaningful text*

1. Type (or paste in) a web address and press spacebar or "Enter" to convert into a hyperlink.
2. Highlight the link.
3. Go to menu item: **Insert > Hyperlink...**
4. Edit the text in the **Display** box
5. Select **OK.**



## Technique 11. Check Accessibility

At this time, Word 2008 for Mac does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: January 26th, 2011]**

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

*Note*: Before saving in other formats, you may want to run the **Compatibility Report** feature by selecting **Compatibility Report...** from the **Save As** dialog. This checks the compatibility of your existing document with the format you have selected save your document as. The results of this check are revealed in the **Compatibility Report** dialog, where you have explanations of errors and options to fix them. To run this check at any time, go to menu item: **View > Toolbox, Compatibility Report**.

## DOC

1. Go to menu item: **File > Save As...**
2. In the **Save As** box, type a name for the file.
3. In the **Format** box, select **Word 97–2004 Document (.doc).**
4. Select **Save.**

## PDF

While Word 2008 for Mac allows you to save documents in the PDF format. However, at this time, it does not offer an explicit option to save your document in the tagged PDF format. **[Tested: January 26th, 2011]**

## To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

> **Editor's note:** For detailed instructions, see our section on how to check accessibility using Adobe Acrobat Professional.

# HTML

1. Go to menu item: **File > Save as Web Page…**
2. In the **Save As** box, type a name for the file.
3. Select **Save.**
4. Check the HTML file for accessibility (see below).

## To clean up your HTML file

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes.
- Remove font tags.
- Remove styles in the <head> tag.

- Ensure the <th> tags have a scope attribute.
- Remove <p> tags nested inside <th> and <td> tags.
- Check for accessibility.
  *Note*: you may wish to use HTML editors or utilities to help with this process.

## *To evaluate HTML accessibility*

Use one of the web accessibility checkers available online, such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results by the IDRC.

- Coming soon...

# Accessibility Help

If you are interested in what features are provided to make using Word 2008 for Mac more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help**

2. Enter "Accessibility" as your search term in the **Search** box

## References and Resources

1. Microsoft Word 2008 for Mac
2. [GAWDS Writing Better Alt Text](#)
3. [Ryerson University: Microsoft Word Accessibility Tipsheet (PDF)](#)
4. [Microsoft Word: Video Tutorials](#)

## Acknowledgments

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# Microsoft Word 2007

## Usage Notes

At the time of testing (January 10, 2011), Word 2007 provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, Word 2007 does not include an accessibility checking feature.

This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

# File Formats

The default file format for Word 2007 is **Office Open XML (DOCX)**.

   In addition, Word 2007 offers many other word processor and web format saving options. Most of these have not been checked for accessibility.

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Microsoft Word 2007 (ver.12.0.6545.5000, Windows 7, Jan. 2011) while creating a

DOCX document. Files are also easily saved as other file formats (see [Technique 11](#)).

- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca).

# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see [Accessibility Checking](#), below).

Word 2007's default template for new documents is a blank page. The basic installation also includes blank business card, blank label templates, and other blank office-related documents. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in Word 2007. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

### *To create an accessible template*

1. Create a new document (from the default blank template or

from one of the prepackaged templates)
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (See [Technique 10](#), below)
4. Go to menu item: **Office > Save As > Word Template**
5. Save the template in the **Microsoft > Templates** folder
6. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Memo Template") may increase the prominence of the accessibility status. As well, filling in the text box labeled **Tags** with the term "accessibility" may improve its searchability as an accessible file.
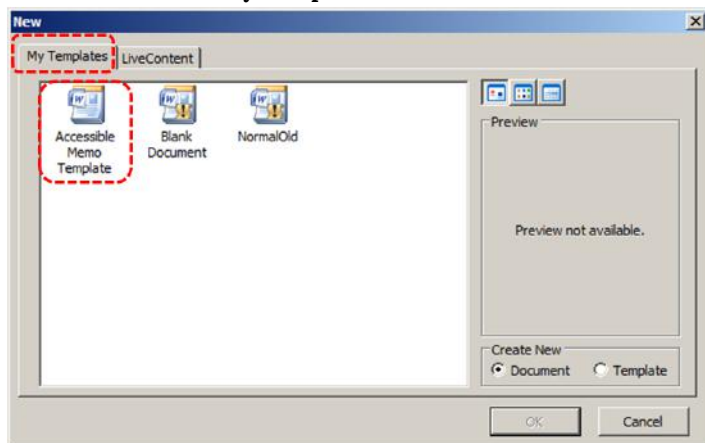7. Select **Save**
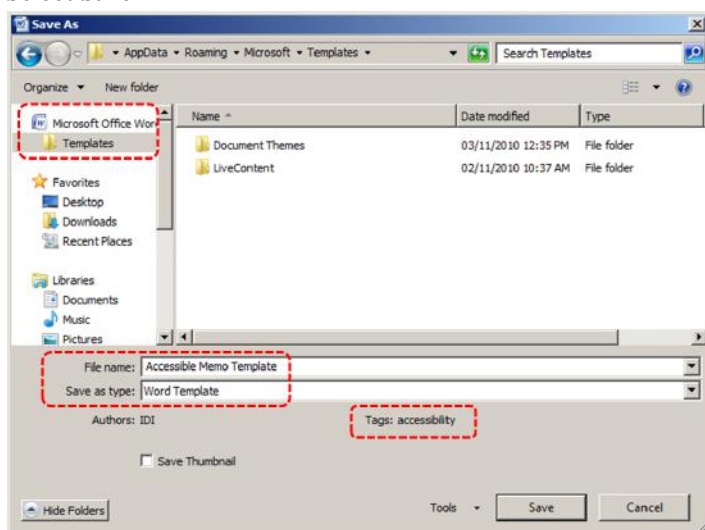


*To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **Office > New**
2. Under **Templates**, select **My templates...**
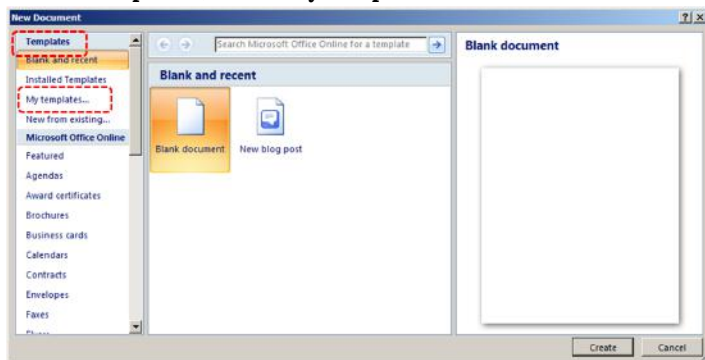


3. In the **New** document dialog, select your accessible template from the list in the **My Templates** tab
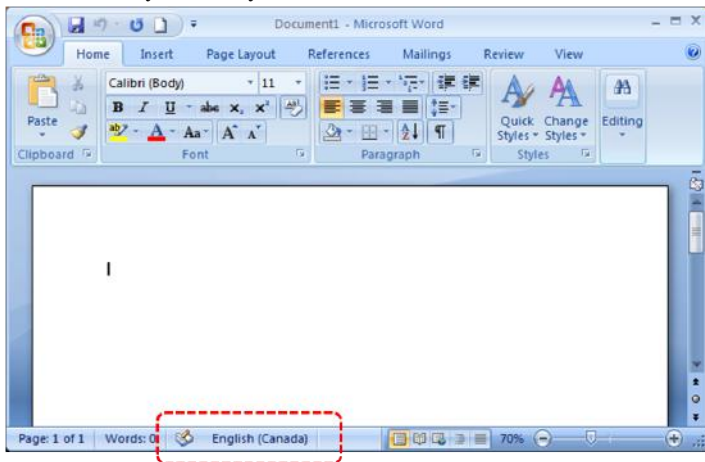


4. Select **OK**
5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

# Technique 2. Specify Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.
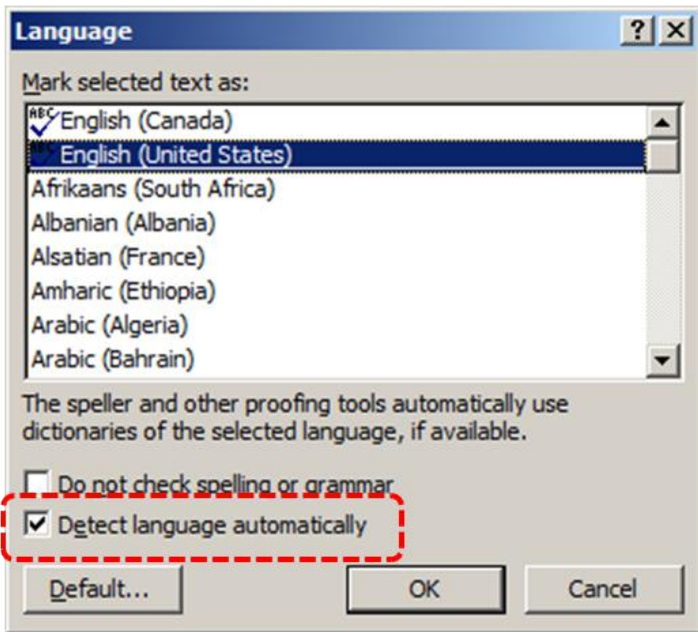
## *To change the default language*

1.  In the operating system, activate the keyboard layout for the language in which you want to create and edit text
2.  Right-click* the status bar at the bottom of the window, ensure that **Language** is selected, this displays a reminder of the active keyboard layout in the status bar



Word 2007 has an automatic language detection mechanism, which can automatically detect the language of your text. If you type a section of text in a different language than the rest of your document, Word 2007 will programmatically mark the language of that section of text appropriately.
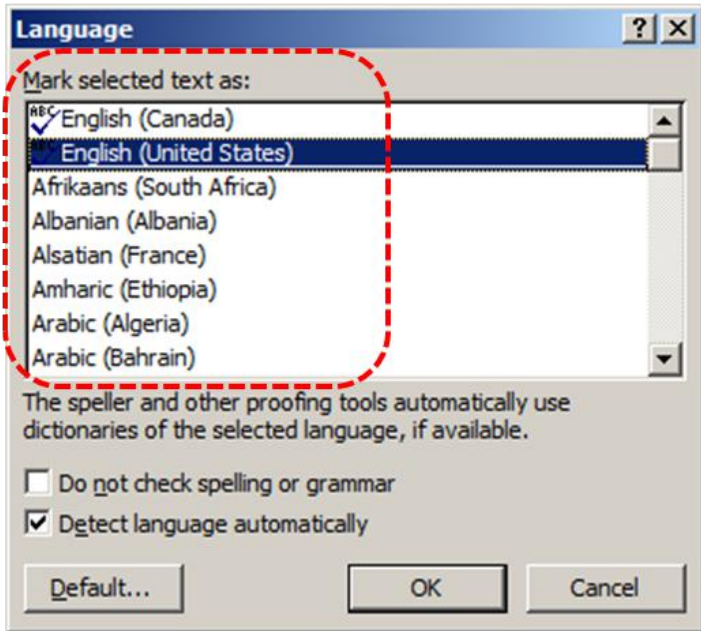
*To turn on automatic language detection*

1. Go to menu item: **Review**
2. In the **Proofing** section, select the **Set Language** button
3. In the **Language** dialog, select the **Detect language automatically** check box



*To apply a language directly to selected text*

1. Select the text
2. Go to menu item: **Review**
3. In the **Proofing** section, select the **Set Language** button
4. In the **Mark selected text as** box, select the language from the list
5. Select **OK**

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## *To add alternative text to images and graphical objects*

1. Right-click* the object
2. Select **Size...**
3. Select the **Alt Text** tab in the **Size** dialog
4. Fill in the **Alternative Text**
5. Select **Close**
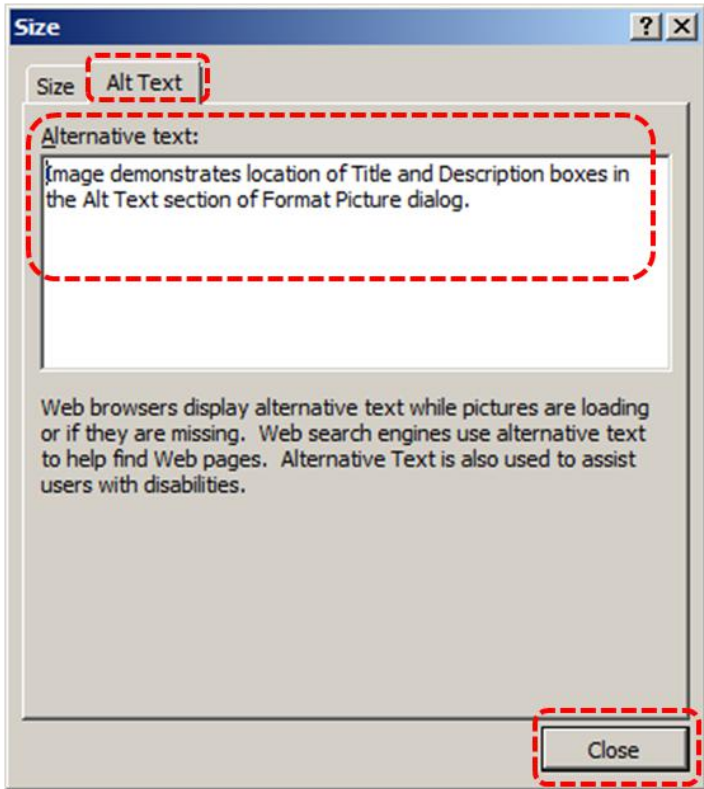
When inserting a very small image, or resizing a larger image to be much smaller, Word 2007 assumes that the image is intended to be a bullet-point for a bulleted list. Once Word 2007 defines the image as a bullet, the option to add alternative text disappears. Select **Undo**, to redefine the bullet as an image. When you right-click* the image, select **Format Picture...** and select the **Alt Text** tab in the **Format Picture** dialog. Alternative text can be found, or can be entered, into the **Alternative text** box.

# Technique 4. Avoid 'Floating' Elements

When images and objects are inserted into Word 2007 documents they default to being an "inline object". Inline objects keep their position on the page relative to a portion of the text. A "floating" object keeps its position relative to the page, while text flows around it. As content moves up or down on the page, the object stays where it was placed. To ensure that images and objects remain with the text that references it, always position it as an inline object.

Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

*To prevent an image or object from "floating"*

1. Select the object
2. Go to menu item: **Page Layout**
3. Select **Position** from the **Arrange** section
4. Select **In Line with Text**

# Technique 5. Use Headings

Any documents that are longer than a few paragraphs require structuring to make them more straightforward for readers to understand. **One of the easiest ways to do this is to use "True Headings" to** create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centered text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

> *Tips for headings*
>
> - Use the default headings styles provided ("Heading ", "Heading 2", etc.)
> - Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.)
> - Do not skip heading levels

## *To apply headings using the Styles toolbar*

1. Select text
2. Go to menu item: **Home**
3. In the **Styles** section, select the heading you wish to apply
   *Note*: You can scroll through the multiple heading styles using the arrows on the right side of the **Styles** section. You can also change the **Style** design by selecting the **Change Styles** button on the right.

## *To modify heading styles*

1. Go to menu item: **Home**
2. In the **Styles** section, right-click* the style you wish to use from the **Styles Gallery**
3. Select **Modify**
4. In the **Modify Style** dialog, make the appropriate changes to style characteristics

5. Select **OK**

*To return to the default heading styles*

1. Go to menu item: **Home**
2. In the **Styles** section, select **Change Styles**
3. Select **Style Set**
4. Select **Word 2007** from the list

## Technique 6. Use Built-In Document Structuring Features

## 6.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

> *Tips for tables*
>
> • Only use tables for tabular information, not for formatting, such as to position columns.

- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible. Whenever possible, use just one row of headings.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page (see Technique 4).

*To add a table with headings*

1. Go to menu item: **Insert**
2. In the **Tables** section, select the **Tables** icon
3. Select the number of rows and columns you would like your table to have
4. Select the table and a **Table Tools** menu item should appear
5. Go to menu item: **Table Tools > Design**
6. In the **Table Style Options** section, select the **Header Row** check box

## 6.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the **Bullets** icon for unordered lists or select the **Numbering** icon for ordered lists
3. To choose a different list format, select the arrow beside the icon
4. Select a format from the format **Library** that appears in the drop-down menu

## *To modify list styles*

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the arrow beside the **Bullets** icon for unordered lists or select the arrow beside the **Numbering** icon for ordered lists
3. Select **Define New Bullet...** to create a new unordered list format
4. Select **Define New Number Format...** to create a new ordered list format
5. In the **New Bullet** dialog or the **New Number Format** dialog, select the list characteristics
6. Select **OK**

## 6.3 Columns

Use **Columns** feature for placing text in columns. However, because columns can be a challenge for users of some assistive technologies, you should consider whether a column layout is really necessary.

## 6.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

## 6.5 Use a Table of Contents

Creating an index or table of contents to outline office document

content can provide a means of navigating the meaningful sequence of content.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

### To insert a table of contents

1. Place the cursor in your document where you want to create the table of contents
2. Go to menu item: **References**
3. In the **Table of Contents** section, select **Table of Contents**
4. Select the style that you want to use

### To update a table of contents

1. Select the table
2. Go to menu item: **References**
3. In the **Table of Contents** section, select the **Update Table** button

## 6.6 Use Page Numbering

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.

## To insert page numbers

1. Go to menu item: **Insert**
2. In the **Header & Footer** section, select **Page Number**
3. Select where you would like to insert your page numbers
4. Select the style of page number you would like to use

## To format page numbers

1. Go to menu item: **Insert**
2. In the **Header & Footer** section, select **Page Number**
3. Select **Format Page Numbers...**
4. In the **Page Number Format** dialog, select the page format characteristics you would like to use
   *Note*: These changes are applied to the predefined page format styles. It does not create a new page format style.

# 6.7 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

## To change the title of the current document

1. Go to menu item: **Office > Prepare > Properties**
2. In the **Document Properties** section that appears, select the **Title** text box
3. Enter the **Title**
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed

above.

# Technique 7. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information.
  - When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind.
  - When creating bar charts, it is helpful to apply textures rather than colors to differentiate the bars
- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9.2](#))
- Consider providing the data that you used to create the chart in tabular form (e.g. as an appendix).

# Technique 8. Make Content Easier to See

Here are some other things to keep in mind:

## 8.1 Format of Text

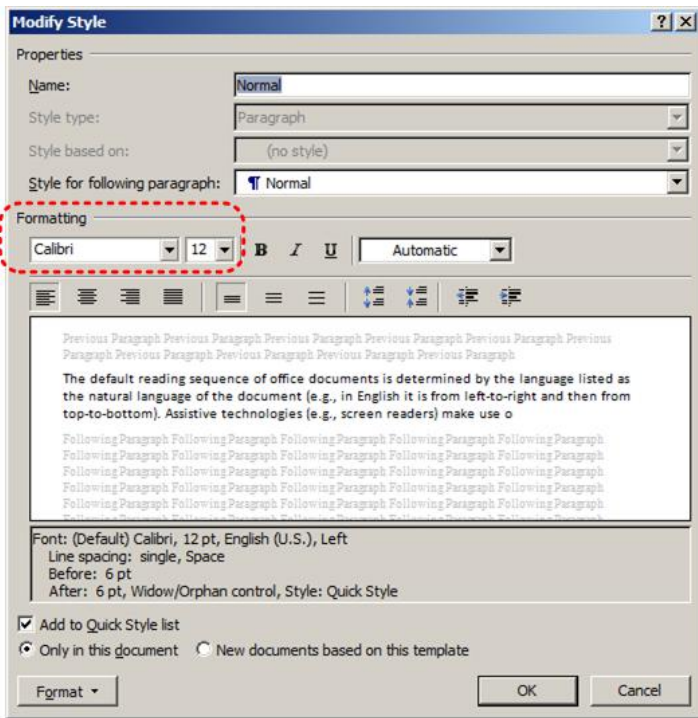When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

### To change the text size for a default named style

1. Go to menu item: **Home**
2. In the **Styles** section, right-click* the **Style** you wish to modify
3. Select **Modify Style**
4. Under **Formatting** in the **Modify** dialog box, select the appropriate font size

5. Exit with **OK**



## 8.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- [WebAIM: Contrast Checker](#)
- [Juicy Studio: Luminosity Color Contrast Ratio Analyzer](#)
- [Joe Dolson Color Contrast Spectrum Tester](#)
- [Joe Dolson Color Contrast Comparison](#)

## 8.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 8.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Word 2007's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 8.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 9. Make Content Easier to Understand

## 9.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.

- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 9.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

*To add hyperlinks with meaningful text*

1. Type (or paste in) a web address and press spacebar or "Enter" to convert into a hyperlink
2. Select the link and right-click*
3. Select **Edit Hyperlink** (Ctrl + K)
4. Edit the text in the **Text to display** box

# Technique 10. Check Accessibility

At this time, Word 2007 does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: January 10th, 2011]**

In order to get some indication of the accessibility of your document or template, then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

Save the document into HTML format and use one of the web accessibility checkers available online, such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option.
3. Select the **Start Checking** button.

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 11. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility.
To evaluate the accessibility of your PDF document, see below.

1. Make sure the file is saved as a DOCX (Older DOC files are not compatible with the checker).
2. Go to menu item: **Office > Save As > PDF or XPS**

3. In the **File name** box, type a name for the file
4. Select the **Options** button
5. Under **Include non-printing information**, ensure that the **Document structure tags for accessibility** check box is selected
6. Under **PDF options**, ensure that **Bitmap text when fonts may not be embedded** check box is de-selected
7. Select **OK** and **Save**



If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## HTML

1. Go to menu item: **Office > Save As > Other Formats**
2. In the **File name** box, type a name for the file
3. In the **Save as type** box, select **Web Page**
4. Select **Save**
5. Check the HTML file for accessibility (see [Technique 10](#), above)

### *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 10](#), above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

*To evaluate HTML accessibility*

Save the document into HTML format and use one of the web accessibility checkers available online, such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## Technique 12. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- [Office 2007 Accessibility Tutorials](#)
- [Save as DAISY](#)

## Accessibility Help

If you are interested in what features are provided to make using Word 2007 more accessible to users, documentation is provided in the Help system:

1. Select the **Help** icon from the right corner of the **Toolbar** or select **F1**
2. Enter "Accessibility" as your search term in the **Help** dialog box

# References and Resources

1. Microsoft Word 2007 Help
2. [Ryerson University: Microsoft Word Accessibility Tipsheet (PDF)](#)
3. [Microsoft Word: Video Tutorials](#)

# Acknowledgments

# Pages for Mac

## Usage Notes

At the time of testing (September 30, 2010), Pages '09 lacks several features that enable accessible office document authoring, most notably: the ability to add alternative text to image and objects. As a result, some of the other features that might otherwise support accessibility, such as its extensive templates are not as effective.

> **Editor's note:** In later versions of Pages, users have the ability to add alt text to images and graphical objects. Apple has added significant accessibility improvements to its iWork applications, but an accessibility checker is not a feature yet.

In addition, Pages does not include an accessibility checking feature.

## What's an "Office Document"?

You should use these techniques when you are using Pages to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not

include audio, video, or embedded interactivity)**,**

- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

The default file format for Pages is the native **iWork format**.

In addition, Pages offers many other word processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#):

- MS Word
- PDF
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language

is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using iWork Pages '09 (ver.4.0.3 (766), Mac OS X, Sept. 2010) and Pages (version 8.1) while producing a document in the native iWork file format. Files are also easily saved as other file formats (see [Technique 12](#)).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a
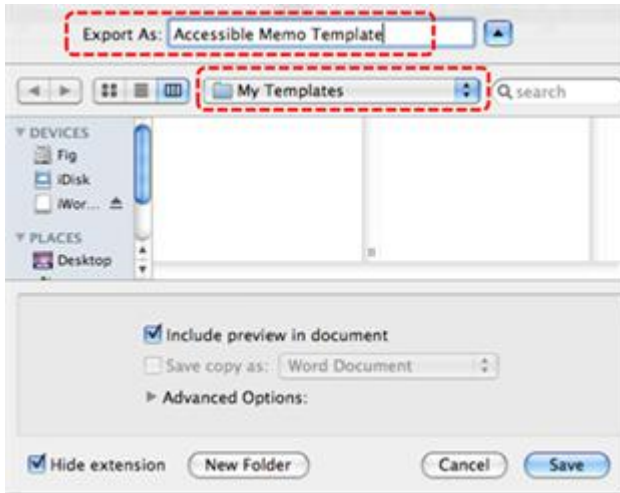
template is accessible, you should check a sample document produced when the template is used (see [Technique 11](#)).

The default template for new documents in Pages is a blank page. The basic installation also includes blank letter templates and blank business reports. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in Pages. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1. Go to menu item: **File > New** or **File > New from Template Chooser...** (Shift+Apple+N).
2. In the **Template Chooser** dialog, select the **Blank template** or select one of the other existing template designs.
3. A new document in your selected template style will open.
4. Ensure that you follow the techniques in this document.
5. When you are finished you should also check the accessibility of the document (See Accessibility Checking, below).
6. Go to menu item: **File > Save as Template...**
7. In the **Export As** box, type a name for the template. Using a descriptive template name (e.g., "Accessible Memo Template") will increase the prominence of the accessibility status.
8. Specify a folder in which to save your template. To save the template in a different location than the default, create a new folder in the **Templates** folder. The folder name is then used as a template category in the **Template Chooser**.
Note: By default, it will be saved in your home folder in Library/Application Support/iWork/Pages/Templates/My Templates pane of the **Template Chooser**.
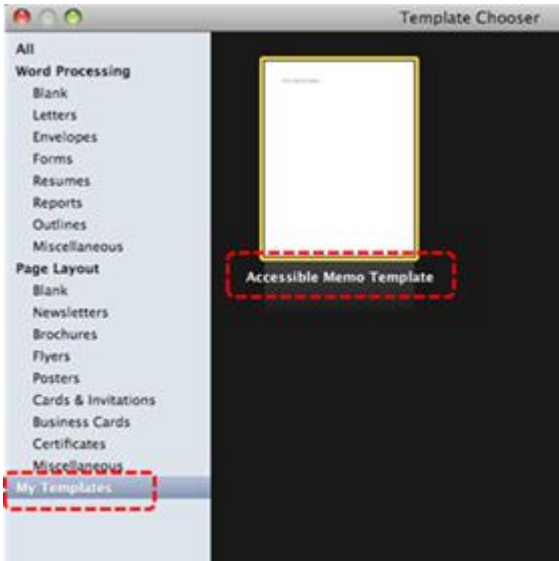
9. Click **Save**.

## To select an accessible template

*Note*: Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New from Template Chooser...** (Shift+Apple+N).
2. In the **Template Chooser** dialog, select **My Templates** from the left pane.

3.  Select your accessible template and click **Choose**.

## Technique 2. Specify Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

*To apply a language directly to selected text*

1.  Highlight the text
    Note: To change the language of the entire document, do a select all to select all the text in the document.
2.  Go to menu item: **View > Show Inspector**.
3.  In the **Inspector** dialog, select the **Text** button.

4. In the **Text** section, click the **More** tab.
5. In the **Language** section, select the language from the drop-down list.



Editor's note: In later versions of Pages, instructions for applying language to specific text is not specified. Users can, however, change a document's formatting and language.

For detailed instructions, see how to format a document for another language in the Pages User Guide for Mac.

# Technique 3. Provide Text Alternatives for Images and Graphical Objects

At this time, Pages '09 does not offer a mechanism which enables the user to add alternative text descriptions to images or objects. **[Tested: September 28, 2010]**

**Editor's note:** In later versions of Pages, users can add alternative text descriptions for images and objects:

1. Click the image to select it, then, in the **Format** sidebar, click the **Image** tab.
2. Click the **Description** text box, then enter your text.

For more details, see the section on how to [add an image description](#) in the Pages User Guide for Mac.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## Technique 4. Avoid "Floating" Elements

Pages will default the position of an inserted image or object depending on the method that is used to insert it. If you use a method that requires you to simply drag-and-drop the image or object onto the document, it will automatically be positioned as "floating".

A "floating" object keeps its position relative to the page, while text flows around it. As content moves up or down on the page, the object stays where it was placed. To ensure that images and objects

remain with the text that references it, press the Command key and then drag the image onto the document or follow the steps below.

## *To import image as an inline object*

1. Place the insertion point wherever you want the image to appear.
2. Go to menu item: **Insert > Choose.**
3. Select the image file.
4. Click **Insert.**
   Note: You can always ensure your image or object is positioned with the text that references it. Select the image or object, then go to the **Format** bar and ensure that **Inline** button is selected.

> **Editor's note:** For later versions of Pages, the instructions for adding an image inline is slightly different:
>
> 1. Click the **Media** button in the toolbar.
> 2. Choose **Photos**, then drag an image from a photo library to the page or to a media placeholder.
>
> For more details, see how to [place objects inline with text](#) in the Pages User Guide for Mac.

# Technique 5. Use Headings

Any documents that are longer than a few paragraphs require structuring to make them more straightforward for readers to

understand. **One of the easiest ways to do this is to use "true headings" to** create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centered text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", etc.)
- Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.)
- Do not skip heading levels

## *To apply headings to selected text*

1. Highlight selected text.
2. Go to the **Format Bar** and select the **Choose a paragraph style** button.
3. Select the style you would like to apply from the drop-down menu.

*To create new heading styles*

1. Highlight text and format with the characteristics you would like to apply to a new heading.
2. Go to menu item: **Format > Create New Paragraph Style from Selection...**
3. In the **New paragraph style** dialog, enter a heading style name in the **Name** text box.
4. Select **OK.**

**Editor's note:** For later versions of Pages, after selecting text, follow these steps to create new heading styles:

1. From the **Format** sidebar, click the paragraph style name at the top of the sidebar.
2. Click the **New Style** button at the top of the **Paragraph Styles** menu. A new style with a placeholder name appears in the menu.
3. The **Paragraph Styles** menu with a callout to the **New Style** button.
4. Type a name for the new style, then click outside the menu to close it.

For more details, see how to create a paragraph style in the Pages User Guide for Mac.

## Technique 6. Use Named Styles

As with "True Headings" (see Technique 5), you should attempt to make use of the named styles that are included with the office application (e.g., "emphasis", "caption", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

*Note:* While office application suites support headings in much the same way, the named styles often differ.

### *To use default named styles*

- Default named styles can be applied the same way as headings

(see [Technique 5](#)).

## Technique 7. Use Built-In Document Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to

break between rows instead of in the middle of rows.

- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.
- Ensure the table is not "floating" on the page (see Technique 4).

*To add a table with headings*

1. Position the cursor at the location in the document you would like to add the table.
2. Go to menu item: **Insert > Table.**
3. Go to menu item: **View > Show Inspector.**
4. In the **Inspector** dialog, select **Table inspector.**
5. Select the **Table** tab.
6. In the **Headers & Footer** section, click the **Choose the number of header columns** button or the **Choose the number of header rows** button.

7. Select the number of header rows or columns you would like your table to have.
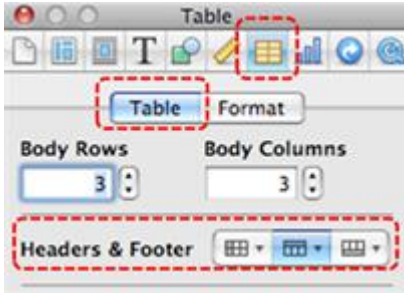


## 7.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

### *To create an ordered or unordered list*

1. Place the cursor where you would like to insert the list or highlight the text of a list you already entered into your document.
2. In the **Toolbar**, click the **Inspector** button to show the inspector window.
3. In the **Inspector** dialog, click the **Text inspector** button.
4. Select the **List** tab.
5. In the **Bullets & Numbering** section, format your list style using the drop-down menus.

**Editor's note:** In later versions of Pages, follow these instructions to create an ordered or unordered list:

1. Select the text you want to format.
2. In the **Format** sidebar, click the **Style** button near the top.
   *Note*: If the text is in a text box, table, or shape, first click the Text tab at the top of the sidebar, then click the **Style** button.
3. Click the pop-up menu next to **Bullets & Lists**, then choose a list style.

For more details, see [how to format a list](#) in the Pages User Guide for Mac.

## 7.3 Columns

Use **Columns** feature for placing text in columns.
*Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

# 7.5 Use a Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

### *To generate a Table of Contents*

1. In the **Toolbar**, click **Inspector.**
2. In the **Inspector** dialog, click the **Document** button.
3. Select the **TOC** tab.
4. Select the checkboxes next to the paragraph styles whose text you want to appear in the table of contents.
5. In the **#'s** column, select those paragraph styles for which you want page numbers to appear.
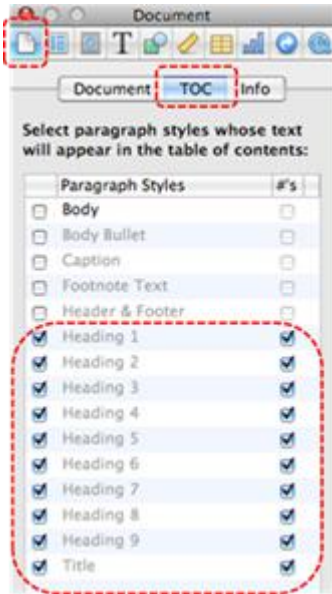
6. Place the insertion point at the beginning of the line where you want the table of contents to appear
Note: Table of contents created in Pages list only the content that follows it, up until the next table of contents. To create a master table of all the contents in your document, it must be the only table of contents and must be placed at the beginning of the document.

7. Go to menu item: **Insert > Table of Contents.**

**Editor's note:** In later versions of Pages, follow these instructions to generate a table:

1. If you haven't already done so, apply paragraph styles to the text you want to appear in the table of contents.

2. Click the **View** menu button in the toolbar, then

choose **Table of Contents**.

3.      Click Edit at the top of the sidebar, then select the paragraph styles you want to include.

4.      Place the insertion point where you want the table of contents to appear, then do one of the following:

   ◦   *Add a TOC for the whole document:* Click the **Insert Table of Contents** button at the bottom of the **Table of Contents** sidebar. Entries are gathered from the entire document.

   ◦   *Add a TOC for this section:* Choose **Insert** > **Table of Contents** > **Section**. Entries are gathered from only the section where you're inserting the table of contents.

   ◦   *Add a TOC for content up to the next TOC:* Choose **Insert** > **Table of Contents** > **To Next Occurrence**. Entries are gathered between this table of contents and the next table of contents.

5.      To format the text and add leader lines, click the table of contents to select it. When the table of contents is selected, a blue line appears around it and its text is highlighted in blue.

For more details, see how to insert a [table of contents into a word-processing document](#) in the Pages User Guide for Mac.

## *To update a Table of Contents*

1.   In the **Toolbar**, click **Inspector.**
2.   In the **Inspector** dialog, click the **Document** button.

3. Select the **TOC** tab.
4. Click **Update Now** at the bottom of the dialog.
   Note: You can also automatically update by clicking any entry in the table of contents.

## 7.6 Use Page Numbering

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content.

### To Insert Page Numbers

1. Go to menu item: **Insert > Auto Page Numbers...**
2. In the **Insert Page Numbers** dialog, format the page number using the available options.
3. Select **Insert.**

## 7.7 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

### To change the title of the current document

1. In the **Toolbar**, select **Inspector.**
2. In the **Inspector** dialog, select the **Document inspector** button.

3. Click the **Info** tab.
4. In the **Title** box, type a descriptive name for the document.
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.



# Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

## To create a chart

1. Go to menu item: **Insert > Chart.**
2. Select a chart type from the list.
3. Update the **Chart Data Editor** with the data you would like to display in the chart.
4. Close the **Chart Data Editor.**

## To add titles and labels

1. Select the chart.
2. Go to menu item: **View > Show Inspector.**
3. In the **Chart Inspector**, select **Chart.**
4. Ensure the **Show Title** and **Show Legend** check boxes are selected.
5. Select **Axis.**
6. Under **Value Axis (Y)** and **Category Axis (X)**, select **Show Title** and **Show Value Labels** from their respective drop-down menus.

## To change to a different predefined Chart Type

1. Select the chart.
2. Go to menu item: **View > Show Inspector.**
3. Select a chart type from the **Choose a chart type** drop-down menu.

# Other Chart Considerations

- When creating line charts, use the formatting options to create

different types of dotted lines to facilitate legibility for users who are color blind.

- When creating bar charts, it is helpful to apply texture instead of color to differentiate the bars.
- Change the default colors to a color safe or gray-scale palette.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9.2](#)).

## Technique 9. Make Content Easier to See

### 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because

printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.
In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying

information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

> **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Pages' "Change Tracking" functionality to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Images of Text

Before you use an image to control the presentation of text (e.g.,

to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the steps noted in [Technique 3](#).

# Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this

list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

## *To add hyperlinks with meaningful text*

1. In the **Toolbar**, click Inspector.
2. Click the **Link inspector** button.
3. Select the **Hyperlink** tab.
4. Select the **Make all hyperlinks inactive** checkbox.



5. Edit the hyperlink text
   *Note*: While editing the hyperlink text, you have deactivated all hyperlinks in the document. To reactive the hyperlinks, deselect the **Make all hyperlinks inactive** checkbox.

## Technique 11. Check Accessibility

At this time (December 2019), Pages does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. As well, it is not currently possible to export Pages documents as HTML.

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

### *To evaluate HTML accessibility*

Save the document into HTML format and use one of the web accessibility checkers available online, such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

*To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option.
3. Select the **Start Checking** button.

> **Editor's note:** For detailed instructions, see our section on how to check accessibility using Adobe Acrobat Professional.

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when exporting to formats other than the default.

At this time (December 2019), it is not possible to export Pages documents as HTML files.

## PDF, Word, RTF, or plain text

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11.

1. Go to menu item: **File > Export.**
2. Select the type of format you would like to export, click **Next.**
3. In the **Save A**s box, type a name for the document.
4. Choose where you want to save the document.
5. Click **Export.**
   *Note*: Exporting a plain text file removes all formatting. Pages documents may not export identically in Word, due to text layout differences.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- Apple Pages Support
- Apple: Create accessible documents with Pages

# Accessibility Help

If you are interested in what features are provided to make using Pages more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help**
2. Enter a search term into the **Search** box

# References and Resources

1. [Pages User Guide for Mac](#)
2. [GAWDS Writing Better Alt Text](#)

# Acknowledgments

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**Source:** [Authoring Techniques for Accessible Office Documents: iWork Pages '09](#) by the [Inclusive Design Research Centre (IDRC)](#) used under [CC-BY-SA 3.0](#).

# OpenOffice Writer and LibreOffice Writer

## Usage Notes

The techniques described in this document apply both to [OpenOffice Writer 3.4.0](#) and [LibreOffice 4.0.4.2](#). There are sometimes minor differences in the toolbars and dialogs between the two office suites, but these differences do not require different instructions.

At the time of testing (July 2013), Writer provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. An accessibility checking feature is available by installing the [AccessODF extension](#).

> **Editor's note:** For later versions of OpenOffice Writer and LibreOffice, the accessibility checking features made available through **AccessODF** is no longer stable (tested on OpenOffice 4.1.7 and LibreOffice 6.3.1.2).
>
> We recommended using other applications, such as current versions of Microsoft Word, which has a robust suite of tools available for creating accessible documents.

This guide is intended to be used for documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),

- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

## File Formats

The default file format for Writer is **Open Document Text (ODT)**. In addition, Writer offers many other word processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#).

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

Several techniques refer to the **Styles and Formatting** dialog. By default, this is a floating dialog but it can also be docked, so it becomes a panel. When the dialog or panel is open, keyboard users can navigate to it using the key F6. The same applies to the **Navigator**, which can either float over the editing area or be docked next to it.

## Disclaimer and Testing Details:

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Writer (ver. 3.4.0, Windows 7, 32 bits, July 2013) while creating an ODT document.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple

as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11).

Writer's default template for new documents is a blank page. The basic installation also includes blank business card and blank label templates. These are all fairly accessible by virtue of being blank. However, you should make the default language of a template unambiguous (see Technique 2).

It is possible to create your own accessible templates from scratch in Writer. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1. Create a new document (either blank or from an existing template).
2. Ensure that you follow the techniques in this document.
3. When you are finished you should also check the accessibility of the document (See Accessibility Checking, below).
4. Go to menu item: **File > Properties.**
5. Use the **Title** and/or **Comments** to indicate the accessibility status of the template. Using **Title** (e.g., "Accessible Memo Template") will increase the prominence of the accessibility status because this is used in place of the template's file name. **Comments** can be used to add more information if necessary (e.g., "This memo template has been checked for accessibility.").
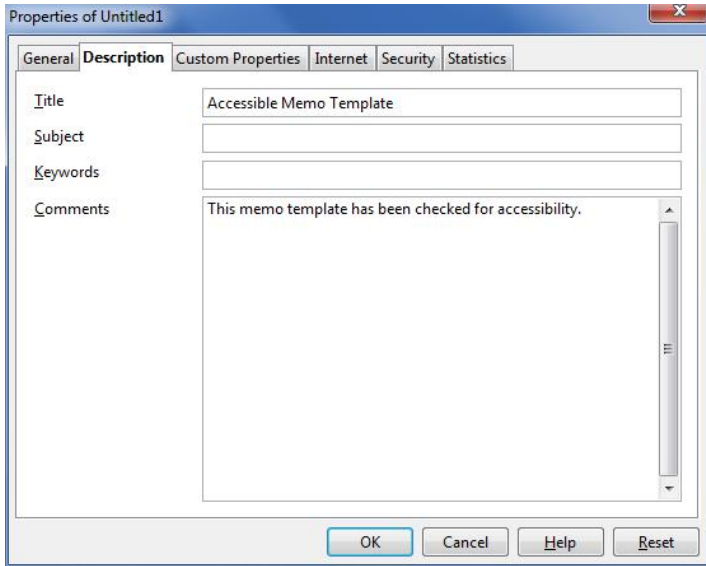
6. Close the dialog with **OK.**
7. Go to menu item: **File > Templates > Save.**
8. In the **New Template** box, type a name for the template.
9. Select the category you would like to save it in, under
   **Categories.**
   *Note*: the category is simply the folder into which you are
   saving the template.



10. Close the dialog with **OK.**

## To select an accessible template

Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New > Templates and Documents.**
2. Select the **Templates** icon.
3. Select a template document from the list.
   *Note*: A properties pane appears on the right side of the window, where you can read the document properties (Title, By, Date, Modified by, Modified on, Description, and Size). If you placed information about the accessibility of the template in the **Title** and/or **Comments** when you created the template (see above), this will be displayed in the **Title** and/or **Description**, respectively.



4. Select **Open.**
5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow**

**to preserve accessibility.**

# Technique 2. Specify Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

*To select a language for the whole document*

1. Go to menu item: **Tools > Options.**
2. Select **Language Settings > Languages.**
3. Under **Default languages for documents**, select the document language for all newly created documents.
   *Note*: Writer uses three categories of languages: "Western languages", "Asian languages" and CTL languages (complex text layout). For monolingual documents in a Western language, you should change the values for Asian languages and CTL languages from their defaults to "None". Under default languages for documents, enable "Show UI elements for UI elements for East Asian languages" and "Show UI elements for Bi-Directional writing". Then set the values for Asian and CTL to "None". You can then again disable the UI elements for these languages again.
   *Tip*: Do this for all your templates.
4. Close the dialog with **OK.**
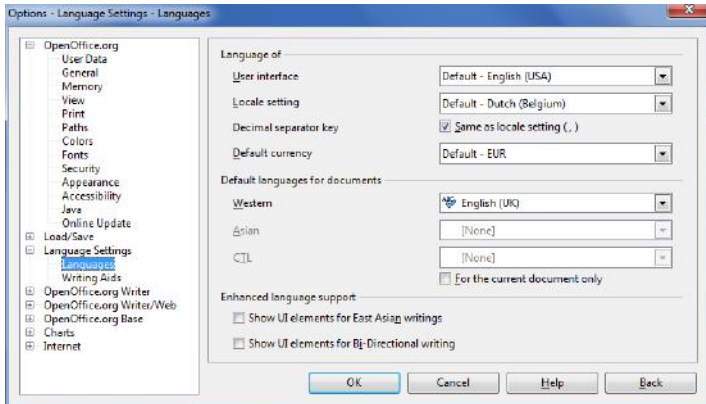
*To select a language for a paragraph style*

1. Place the cursor in the paragraph using the paragraph style you want to edit.
2. Right-click* and go to menu item: **Edit Paragraph Style.**
3. Select the **Font** tab.
4. Select the **Language** and select **OK.**
   *Note*: All paragraphs formatted with the current paragraph style will have the selected language.
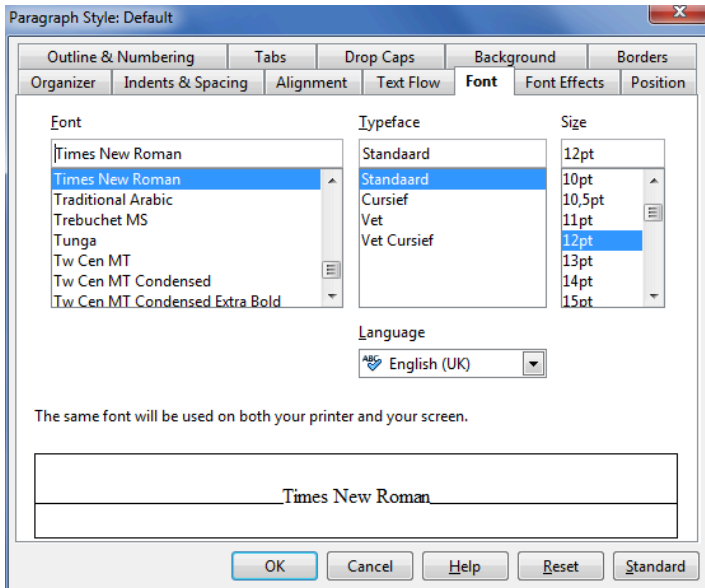
## To select a language for hyperlinks

The default language of hyperlinks in Writer is "None". If all or most hyperlinks in a document are in the same language, you should modify the style for hyperlinks.

1. Go to menu item: **Format** > **Styles and Formatting.**
2. In the **Styles and Formatting** dialog, select the **Character Styles** icon.
3. Right-click* on the style **Internet Link.**
4. Select **Modify…**
5. Select the **Font** tab.
6. Set the language to **English** (or the Western language that you use most). If the UI for non-Western languages is enabled, set the non-Western languages to "None".
   *Tip*: Set the language for the style Internet Link in all your templates.

*To apply a language directly to selected text*

1. Select the text to which you want to apply a language.
2. Go to menu item: **Format > Character.**
3. Select the **Font** tab.
4. Select the **Language.**
5. If the UI for non-Western languages is enabled, set the non-Western languages to "None".
6. Select **OK.**

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

Some issues have been observed with Writer involving the loss of alternative text and longer descriptions (e.g., when images anchored to a paragraph are changed to anchor as characters, when a caption is added). We suggest that you guard against this data loss by keeping backups and by setting image anchoring and captions before adding the alternative text.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank.
- If the image contains meaningful text, ensure all of the text is replicated.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences.
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below.
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone.
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*Note:* When inserting a new image or object in place of an existing image or object, the alternative text and description will remain the same. This is helpful if you are inserting an updated version of an image, whose meaning and context has not change. However, when inserting an entirely new image or object, you will be required to change the title and description fields accordingly.

*Note:* When inserting a picture or object that is too large for the height or width of the page, it is best to reduce the size before inserting it into the document. This results in a smaller file size and usually better image quality.

## *To add alternative text to images and graphical objects*

1. Right-click* the object.

2. Go to menu item: **Picture.**
3. Select the **Options** tab in **Picture** dialog.
4. Fill in **Alternative Text** box.
   *Note:* the **Alternative Text** is also the **Title** of the object.
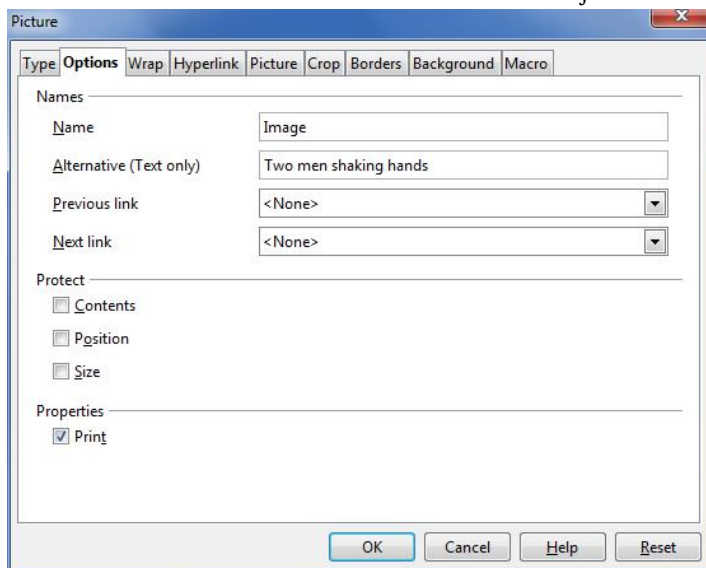


*To add long descriptions to images*

1. Right-click\* on object.
2. Select **Description...** option.
3. Enter description in **Description** box.
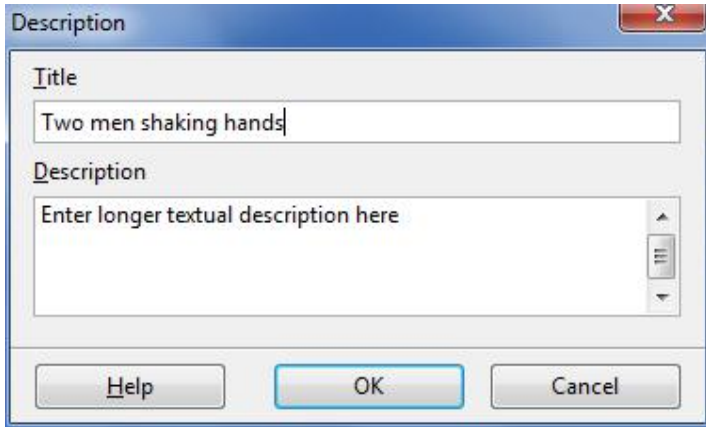
## Technique 4. Avoid "Floating" Elements

When images and objects are inserted into Writer documents they default to "floating" with an anchor "To Paragraph". This makes them difficult to select with the keyboard, so "floating" should be prevented by anchoring them "As Character".

A "floating" object keeps its position relative to the page, while text flows around it. As content moves up or down on the page, the object stays where it was placed. To ensure that images and objects remain with the text that references it, always position it has attached to a character at the end of the in-text reference.

Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

*To prevent an image or object from "floating"*

1. Right-click* the object.

2.  Select **Anchor > As Character** option.

# Technique 5. Use Headings

Any documents that are longer than a few paragraphs require structuring to make them more straightforward for readers to understand. **One of the easiest ways to do this is to use "True Headings" to** create logical divisions between paragraphs. True headings are more than just bolded, enlarged, or centered text; they are structural elements that order and levels provide a meaningful sequence to users of assistive technologies.

*Tips for headings*

- Use the default headings styles provided ("Heading ", "Heading 2", etc.).
- Nest headings properly (e.g., the sub-headings of a "Heading 1" are "Heading 2", etc.).
- Do not skip heading levels.

*To apply headings from the Formatting Toolbar*

1.  Highlight the text that you want to make into a navigational heading.
2.  Select the desired heading from the dropdown list in the **Formatting Toolbar.**
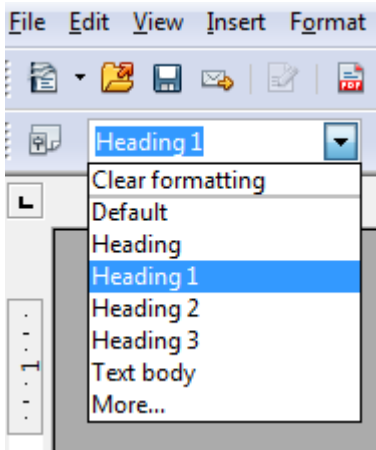
## *To apply headings using the Styles and Formatting panel*

1.  Highlight the text that you want to make into a navigational heading.
2.  Go to menu item: **Format > Styles and Formatting.**
3.  Double-click* the desired heading style.
    Note: If a heading style is modified in the **Styles and Formatting** panel, the modification will apply to every heading of that style.

## *To apply headings using keyboard shortcuts (up to Heading 5)*

1.  Highlight the text that you want to make into a navigational heading.
2.  Select Ctrl+1 (for Heading 1), Ctrl+2 (for Heading 2), ... Ctrl+5 (for Heading 5).

*To modify heading styles*

1. Go to menu item: **Format > Styles and Formatting** (F11).
2. Select the style to modify from the list.
3. Right-click* and select: **Modify...**
4. In the **Paragraph Style** dialog, select the **Organizer** tab.
5. In the **Name** box, enter a unique style name.
6. Format the heading style using the available formatting options in the various tabs. Make sure your selections align with the techniques in this document.
7. Select **OK.**

# Technique 6. Use Named Styles

As with "True Headings" (see <u>Technique 5</u>), you should attempt to make use of the named styles that are included with the office application (e.g., "emphasis", "caption", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

*Note*: While office application suites support headings in much the same way, the named styles often differ.

Writer provides named "paragraph styles" for "caption", "endnote", etc. Styles for strong emphasis, emphasis, source code and quotations are not paragraph styles but "character styles". You can access character styles by selecting the **Character Styles** icon in the **Styles and Formatting** dialog.

*To use default named styles*

- Default named styles can be applied the same way as headings (see [Technique 5](#)).

## Technique 7. Use Built-In Document Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

> *Tips for tables*
>
> - Only use tables for tabular information, not for formatting, such as to position columns.
> - Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
> - Keep tables simple by avoiding merged cells and

dividing complex data sets into separate smaller tables, where possible.

- Always set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cell labels should be concise and clear.

*To add a table with headings*

1. Go to menu item: **Insert > Table** (Ctrl+F12).
2. Enter a name for the table.
3. Specify the number of columns and rows in the table.
4. Select the **Heading** check box.
5. Select the **Repeat heading** check box.
6. Indicate the number of rows you want to use for the heading in **The first...rows** spinner box.
   *Note*: Whenever possible, keep tables simple with just 1 row of
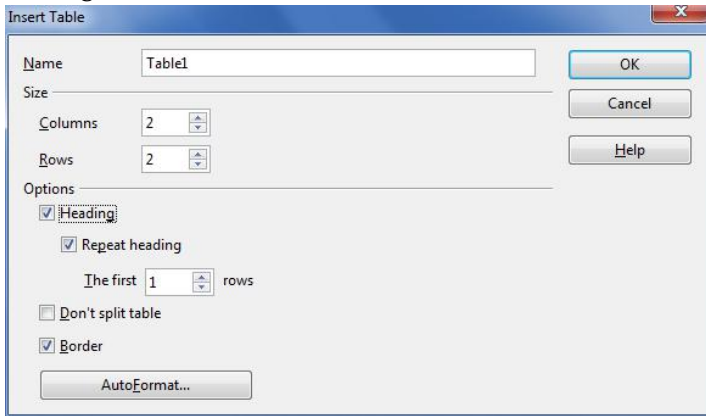
headings.



## *To add table headings manually*

1. Highlight the table cells that should be headers.
2. Go to menu item: **Format >Styles and Formatting** (F11).
3. Select the **Heading** check box and make sure that **Repeat heading** is checked.

## *To make tables break between rows instead of in the middle of rows*

1. Place the cursor inside the table.
2. Go to menu item: **Table** > **Table Properties.**
3. Select the **Text Flow** tab.
4. Unselect the check box **Allow row to break across pages and columns.**
5. Select **OK.**

## 7.2. Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

### *To create an ordered or unordered list*

This applies a paragraph style for lists that makes sure that assistive technology and other software can recognize the content as a list.

1. Select text.
2. Go to menu item: **Format > Styles and Formatting.**
3. In the **Styles and Formatting** dialog, select a list style such as List 1 or Numbering 1.
   *Note:* Do not select the style "List": this style is reserved for modifying all list styles or numbering styles at once.

There are two methods for adding visual list formatting to this list: the first one modifies the applied paragraph style:

1. Go to menu item: **Format** > **Styles and Formatting.**
2. Right-click* the paragraph style you applied to the content (e.g., List 1 or Numbering 1).
3. Select **Modify...**
4. In the **Paragraph Style** dialog, select the **Outline & Numbering** tab.
5. Select a **Numbering Style** (this drop-down list also contains styles for unordered lists).
6. Select the **Indents and Spacing** tab.
7. Set the indent values you would like to use for this list type.
8. Select **OK.**

The second method changes the visual formatting of a list without changing all lists based on the same style:

1. Select the list
2. Go to menu item: **Format** > **Bullets and Numbering.**
3. In the **Bullets and Numbering** dialog, select the **Bullets** tab for unordered lists or the **Numbering type** tab for ordered lists.
4. Select a list style from the **Selection** gallery.
5. Select **OK.**

## To create sublists

This is the only way to create a true sublist (i.e. a list that is (internally) a child list of the list item above it) instead of a list that is merely indented more from the margin.

1. Select the list items that should become a sublist.
2. On the **Bullets and Numbering** toolbar, select the button **Demote One Level** or the button **Demote One Level with Subpoints.**
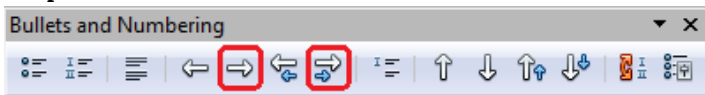


## To create new list styles

1. Go to menu item: **Format > Styles and Formatting.**
2. In the **Styles and Formatting** dialog, select the **List Styles** icon.
3. Right-click* a style from the list.
4. Select **New...**
5. In the **Numbering Style** dialog, enter a name for the list style in the **Name** box.
6. Format the list using the available formatting options in the

various tabs.

7. Select **OK.**

*Note*: This does not create new paragraph styles but new formatting styles that you can apply to paragraph styles for lists. Even though the names for the formatting styles (List 1, Numbering 1 etc.) that appear when you select the List Styles icon are the same as some of the paragraph styles that appear when you select the Paragraph Styles icon, their purpose is different: the Paragraph Styles are for document structure and other paragraph features (e.g. indent), the List Styles are for the numbering or bullet style.

## 7.3 Columns

Use the **Columns** feature for placing text in columns.

*Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Page Breaks

Start a new page by inserting a page break instead of repeated hard returns.

To insert a page break, use the shortcut Ctrl + Enter or go to the menu item **Format** > **Manual Break** and select **Page Break** (the default option).

## 7.5. Use a Table of Contents

Creating an index or table of contents to outline office document content can provide a means of navigating the meaningful sequence of content.

The best way to generate a table of contents is after applying the predefined heading styles, such as "Heading 1" as described above, to the headings that you want to include in your table of contents. After you apply these styles, you can then create a table of contents.

### *To insert a Table of Contents*

1. Select in your document where you want to create the table of contents.
2. Go to menu item: **Insert > Indexes and Tables > Indexes and Tables.**
3. Select the **Index/Table** tab.
4. Select **Table of Contents** in the **Type** dropdown.
5. Select **OK.**

### *To use a different paragraph style as a Table of Contents entry*

1. Select in your document where you want to create the table of contents.
2. Go to menu item: **Insert > Indexes and Tables > Indexes and Tables.**
3. Select the **Index/Table** tab.
4. Select **Table of Contents** in the **Type** box.
5. In the **Create from** area, select the **Additional Styles** check box.
6. Select the **(...)** button next to the check box.

7. In the **Assign Styles** dialog, select the style in the list.
8. Select the **>>** or the **<<** button to define the outline level for the paragraph style.

### *To update a Table of Contents*

1. Select **Tools > Update > All Indexes and Tables.**

## 7.6 Use Page Numbering

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.

### *To Insert Page Numbers*

1. Go to menu item: **Insert > Footer.**
2. Select the page style that you want to add the footer to. If you have not created or applied any special page styles, "Default" will be the only option.
3. Go to menu item: **Insert > Fields > Page Number.**

## Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience.

- All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information.
  - When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind.
  - When creating bar charts, it is helpful to apply textures rather than colors to differentiate the bars.
- Ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2).
- Consider providing the data that you used to create the chart in tabular form (e.g., as an appendix).

## *To create a chart*

1. Go to menu item: **Insert > Object > Chart...**
2. Right-click* the chart and select **Chart Data Table...**
3. Update the data table with the data you would like to display.
4. Close the data table.

## *To add titles and labels*

1. Select the chart.
2. Go to menu item: **Insert > Titles.**
3. Update the relevant fields and select **OK.**
4. Go to menu item: **Insert > Data Labels.**
5. Configure your data label selections and select **OK.**

*To apply textures to bar charts*

1. In the chart's legend, right-click* on the **Legend Key** for one of the bars.
2. Select **Format Data Series…**
3. In the Fill area, select **Hatching** and choose one of the textures.
4. Optionally, select the **Background Color** check box and choose a color.
5. Select **OK**.

Repeat these steps for each legend key.

*To change the line style in line charts*

1. In the line chart's legend, right-click* on the **Legend Key.**
2. Select **Format Data Series…**
3. Select the **Line** tab.
4. Choose a line style that will help distinguish the data series from the other lines in the chart.
5. Select **OK.**

Repeat these steps for each legend key.

# Technique 9. Make Content Easier to See

Here are some other things to keep in mind:

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Verdana, Helvetica, Arial) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
  *Note*: Some fonts were specifically designed for easier reading on screens (e.g. the sans-serif fonts Verdana, Trebuchet MS and Calibri, and the serif fonts Georgia, Cambria and Constantia). Unfortunately, many of these fonts are not available across operating systems.
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated (e.g., blinking) text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

*To change the text size for a default named style*

1. Go to menu item: **Format > Styles and Formatting** (F11).
2. Select the style to modify from the list.
3. Right-click* and select: **Modify...**
4. Select the **Font** tab.
5. Select a font size under **Size.**
6. Select **OK.**

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)

- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- TPG Contrast Analyser
- Joe Dolson Color Contrast Comparison

# 9.3 Avoid Relying on Color or Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead, use Writer's "Changes" feature to track changes. You can find this feature in the **Edit** menu.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.4 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted in [Technique 3](#), above.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read

out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

### *To add hyperlinks with meaningful text*

1. Position the cursor where you would like to enter the link.
2. Go to menu item: **Insert > Hyperlinks.**
3. In the **Hyperlink** dialog, enter the link address in the **Target** box.
4. In the **Further settings** section, enter the text to display in the **Text** box.
5. Select **Apply.**
6. Select **Close.**

## Technique 11. Check Accessibility

If you wish to check the accessibility of your document or template (see [Technique 1](#)), download the AccessODF extension and install it using Writer's Extension Manager (**Tools > Extension Manager...**). This extension offers an "Accessibility Evaluation" function to review your document against a set of possible issues that users with disabilities may experience in your file.

AccessODF classifies issues as either:

- **Error:** Content that makes a file very difficult or impossible for people with disabilities to understand.

- **Warning:** Content that in most, but not all, cases makes a file difficult for people with disabilities to understand.

## To Use AccessODF

1. Go to menu item: **Tools** > **Accessibility Evaluation...**
2. An Accessibility Evaluation task panel will open.
3. Select **Check** to start the evaluation.

## Accessibility

- **ERRORS**
  - ⊞ Image is not anchored "As character" (2)
  - Document has no default language
  - ⊞ Image without text alternative (3)
- ⚠ **WARNINGS**
  - ⊞ Formula without an alternative description (1)
  - ⊞ Hyperlink has no meaningful link text (1)
  - Missing title
  - ⊞ Table contains merged cells (1)
  - ⊞ Text is too small (1)
  - ⊟ Faked table (1)
    - First column  Second columnT...
  - ⊞ Table rows break across pages and columns (1)
  - ⊞ Text formatting suggests that content may be a head
  - ⊞ Justified text (1)

**Issue:**

⚠ | Faked table

**Description:**

Text has been formatted to look like a table using the space bar and/or the Tab key. Although it looks like a table visually, it is not recognized as a table by screen readers or other assistive technologies.

**Suggestions:**

Use only "real tables" to present tabular information. Go to Insert > Table or press Crtl+F12 to create a real table and organize the information in rows and columns.

| Check | Clear |
| Repair | Ignore |

4.  Select a specific issue to see its description and repair suggestions. If the **Repair** button becomes active, selecting this button will either repair the issue automatically or open the dialog where you can repair the issue. (For example, adding a text alternative to an image cannot be done automatically, so AccessODF opens the dialog for text alternatives.) If the issue is a false alarm, select the **Ignore** button.
5.  When you have repaired all the issues, select the **Check** button again to find issues that may have gone undetected so far.

More complete instructions are available in the [AccessODF User Guide](). 

*Note*: Currently, AccessODF 0.1.0 is not compatible with OpenOffice 4.0 (with the new
sidebar) and LibreOffice 4.1 (with or without the sidebar).

> **Editor's note:** AccessODF has not been updated recently, and it does not work with later versions of OpenOffice or LibreOffice.

## Using HTML and PDF to Evaluate Accessibility

Since the AccessODF plugin may not work with current versions of OpenOffice or LibreOffice, consider saving the document as an HTML or PDF file and check those formats for accessibility. This will allow you to get some indication of the accessibility of your document or template.

## To evaluate HTML accessibility

Save the document into HTML format and use one of the web accessibility checkers available online, such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

## To evaluate PDF accessibility in Adobe Acrobat Professional

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option.
3. Select the **Start Checking** button.

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11.

1. Go to menu item: **File > Export as PDF.**
   *Note*: This option is different than the **Adobe PDF** option in the **Print** dialog.
2. The **PDF Options** dialog window opens.
3. Select the **General** tab.
4. Select the check box labeled **Tagged PDF**
   *Note*: You must ensure this option is selected in the PDF Options window dialog box before using PDF icon on menu bar. This option is not checked by default, but will remain checked once you have selected it.
5. Select the check box labeled **Export bookmarks.**
   *Note*: This creates a hierarchical list of bookmarks that link to the document's headings. This list is displayed in the bookmarks panel of Adobe Acrobat and Adobe Reader and facilitates navigation (for sighted users) in large documents.
6. Optionally, select the **Initial View** tab; in the **Panes** area, select the radio button **Bookmarks and page.**

7. Select **Export.**
8. Enter name and save location.
9. Select **Save.**

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# HTML (Single HTML File)

1. Go to menu item: **File** > **Save As...**
2. Enter a path and a name for the HTML document.
3. In the **Save as type** box, select "HTML Document (OpenOffice.org Writer)" (in OpenOffice.org) or "HTML Document (Writer)" (in LibreOffice).
4. Select **Save.**
5. A dialog asking which format to choose will appear.
6. Select **Keep Current Format** (in OpenOffice.org) or **Use HTML Document (Writer) Format** (in LibreOffice).
7. Check the HTML files for accessibility (see [Technique 11](#)).

# HTML (Multiple HTML Files)

1. Apply one of the default heading paragraph styles to the paragraphs where you want to generate an HTML page.
2. Go to menu item: **File > Send > Create HTML Document.**
3. Enter a path and a name for the HTML document.
4. Select **Save.**

5.  Check the HTML file for accessibility (see [Technique 11](#)).

*To clean up your HTML file*

You may wish to use HTML editors or utilities to help with this process.

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes.
- Remove font tags.
- Remove styles in the <head> tag.
- Ensure the <th> tags have a scope attribute.
- Remove <p> tags nested inside <th> and <td> tags.
- Check for accessibility (see [Technique 11](#)).

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- [odt2daisy](#) – an export as DAISY add-in for OpenOffice.org.
- [odt2braille](#) – a Braille extension to OpenOffice.org Writer that enables the printing of documents to a Braille embosser and the export of documents as Braille files.
- [OOo2GD](#) – an extension that allows you to export, update and import documents, spreadsheets and presentations between OpenOffice.org applications and Google docs.

# Other Application Features

## Writer's "Navigator" Feature

After you have populated your document with content and true headings have been applied, you may wish to rearrange the content. In order to maintain the integrity and accessibility of the altered sequence, you will need to ensure that structural information (e.g., heading levels) is adjusted accordingly.

Writer provides a "Navigator" mechanism which displays all parts of the document, such as headings, tables, frames, objects or hyperlinks. These elements are referred to as "categories". If a plus sign appears next to any one of the categories, it means there is more than one object of its kind within the document.

The "Navigator" feature helps you navigate document content, as well as access and manipulate the content. This enables you to move headings or subordinate text up or down in a document, as well as promote or demote heading levels. Arranging objects and other elements of the document is possible as well, following the same principle as arranging headings and text. This allows you to apply a meaningful sequence that can be programmatically determined and therefore accessible to assistive technologies.

*To open the "Navigator"*

1. Select the **View** tab from the menu bar (F5).
2. Select the **Navigator** option.

*To jump to a location in a document*

1. Double-click* an item listed in the **Navigator** window, or enter the respective page number in the spin box.
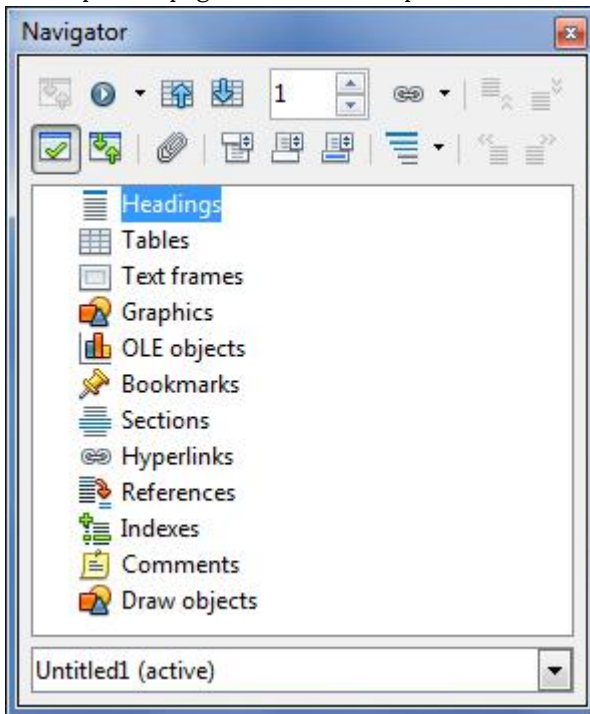


*To open a category*

1. Select the plus sign beside the category.
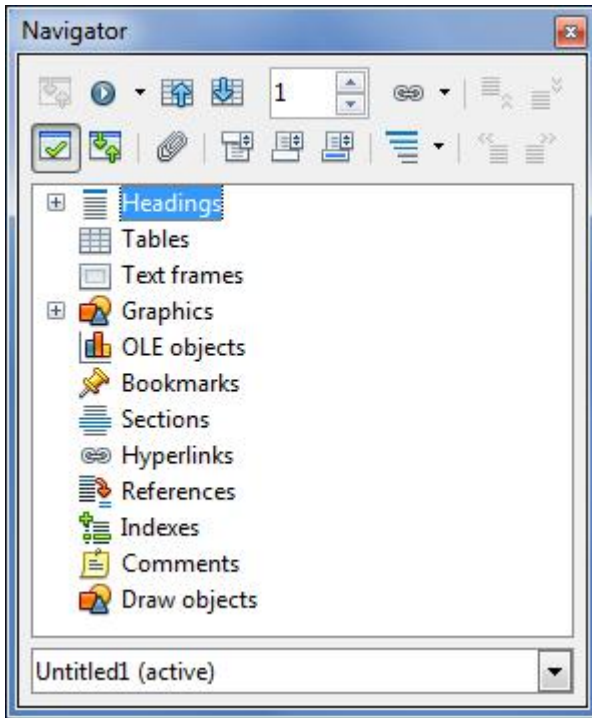
*To view only the entries in a certain category*

1. Select the category and select the **Content View** icon.
   *Note*: Until you select the icon again, only the objects of this
   category will be displayed.

## *To move heading up or down in a document*

1. On the **Standard Bar**, select the Navigator icon to open the Navigator.
2. On the **Navigator**, select the **Content View** icon.
3. Do one of the following:

    1. Drag a heading to a new location in the Navigator list.
    2. Select a heading in the Navigator list, and then select the **Promote Chapter** or **Demote Chapter** icon.
    3. To move the heading without the subordinate text, hold down Ctrl while you drag or select the **Promote Chapter** or **Demote Chapter** icons.

## *To Promote or Demote the Level of a Heading*

1. Select the heading in the Navigator list
2. Select the **Promote Level** or **Demote Level** icon

# Accessibility Help

If you are interested in what features are provided to make Writer more accessible to users, consult one of the the following:
   For OpenOffice Writer:

1. Go to menu item: **Help > OpenOffice.org Help** (F1).
2. Enter "accessibility" as the **Search Term.**

For LibreOffice Writer:

- [Accessibility in LibreOffice](#)

# References and Resources

1. [Apache OpenOffice User Guide: Writer](#)
2. [WebAim: OpenOffice.org and Accessibility](#)
3. [GAWDS Writing Better Alt Text](#)
4. [OpenOffice.org 3 Writer Guide (PDF)](#)

# Acknowledgments

# AUTHORING TECHNIQUES FOR ACCESSIBLE OFFICE DOCUMENTS: SPREADSHEET APPLICATIONS

# Google Sheets

## Usage Notes

At the time of testing (December 2019), [Google Sheets](#) lacks some features that enable accessible office document authoring, most notably: the ability to indicate changes in natural language, programmatically determined named styles, and a separate document title field.

No accessibility checking feature is built into Google Sheets; however, you can install a third-party add-on called [Grackle Sheets](#). Grackle is a third-party plug-in that includes an accessibility checker along with other features that enhance accessibility (see [Technique 11](#)). Due to the nature of Google Sheets, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like an HTML file.

## What's an "Office Document"?

You should use these techniques when you are using Google Sheets to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and

- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

## File Formats

Google Sheets does not have a default file format, as it is a web-based authoring tool.

Google Sheets offers various spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#):

- Microsoft Excel (.xlsx)
- OpenDocument Format (.ods)
- PDF Document (.pdf)
- HTML (.html, zipped)
- Comma-separated values (.csv, current sheet)
- Tab-separated values (.tsv, current sheet)

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language

is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups** . In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. Files are also easily saved as other file formats (see [Technique 12](#)).

> **Editor's note:** Since the content of this page has been heavily updated from the original article ([Authoring Techniques for Accessible Office Documents: Google docs: Spreadsheets](#)), the usual editor's notes that flag new content will be omitted. The application-specific steps and screenshots were updated in December 2019.

## Technique 1. Use Accessible Templates

Google Sheets lacks support for some accessibility features, such as table headers that repeat. With this in mind, be cautious of

templates available in the Google Sheets template gallery and be sure that they comply the techniques discussed here.

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11).

Google Sheets's default template for new documents is a blank spreadsheet. The basic installation also includes a wide variety of templates ranging from blank service invoices to blank project management schedules. These are all accessible by virtue of being blank.

It is possible to create your own templates from scratch in Google Sheets. As well, you can edit and modify the existing templates, ensuring their accessibility as you do so and saving them as a new template.

## To select a template

1. Go to Google Sheets.
2. At the top right, click on **Template Gallery**.
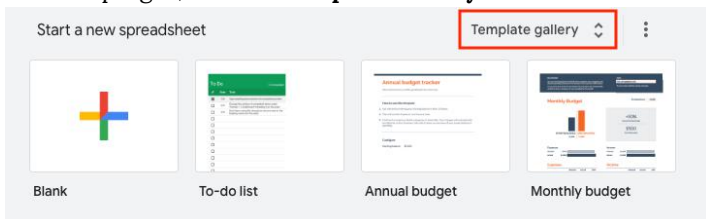


3. Select a template.
4. A copy of the template will open.

## To create an accessible template

1. Create a new spreadsheet (from the default template or from an existing template).
   *Note*: If creating a template from an existing document, go to **File** > **Make a copy**. Type a name and choose where to save it, then, click **Ok**.
2. Rename your document. Be sure to indicate that the document is an accessible template by using terms such as "accessible" (e.g., "Accessible Memo Template"). This will improve its searchability and promote its use as an accessible template.
3. Ensure that you follow techniques in this document. You may also check the accessibility (see [Technique 11](#)).

## To share your accessible template as a new document

You can share your accessible template, but it may be more useful to share the file as copy that other users can add to their Google Drive.

1. Go to the address bar change the end of the URL before sending it.
2. Replace "edit" at the end of the URL with "copy".
   *For example:*
   **Before:** http://docs.google.com/spreadsheet/d/12345678/**edit**
   **After:** http://docs.google.com/spreadsheet/d/12345678/**copy**
3. Send the modified copy link.
4. When the recipient follows the modified copy link, they're instructed to click on **Make a copy**.

5. They can then work on a copy of the accessible template.

For more information, see the resources below:

- [Google: Create document templates](#)
- [Google: Share "Make a copy" links to your files](#)

## Technique 2. Set Document Language

At this time (December 2019), Google Sheets does not offer an explicit language selection mechanism to indicate the natural language of your spreadsheet or changes in natural language at any point within the content (e.g., a few cells containing text in a different language than the rest of the spreadsheet). Google Sheets defaults the natural language to the language selected for your Google Account (see [Google: Change Your Typing Language](#)).

When exporting to other document formats, there is no guarantee that the natural language of your Google Account will be indicated as the natural language of your document. In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

# Technique 3. Provide Text Alternatives for Images and Graphical Objects

Google Sheets offers a mechanism for adding alternative text or longer descriptions to images and objects where it can be readily accessed by screen reader users. While you can add alt text, you will need to ensure that you provide longer descriptions in the body of the document, near the images and objects. While this solution is not optimal for screen reader users and will complicate your own accessibility testing, it is necessary until long descriptions are supported.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a

sentence or less and rarely more than two sentences

- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## *To add alternative text to images and graphical objects*

For images in a cell

1. Right-click* on the image.
2. Select **Alt Text** from the contextual menu.
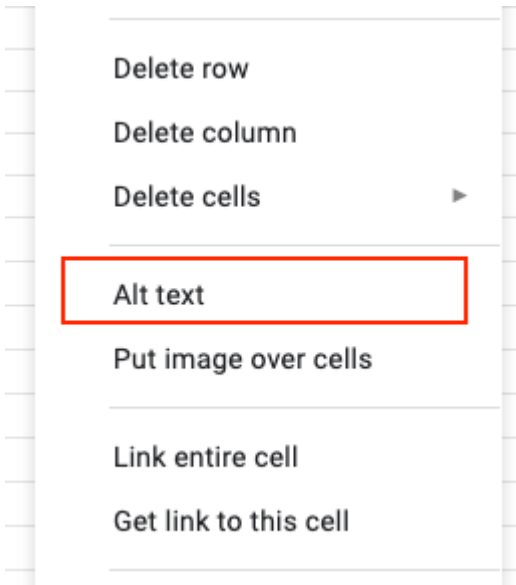
   Delete row

   Delete column

   Delete cells     ▶

   Alt text

   Put image over cells

   Link entire cell

   Get link to this cell

3. Add your alt text to the **Description** field.

## Alt Text

×

Alt text is accessed by screen readers for people who might have trouble seeing your content.

Title

Description

OK    Cancel

For images placed over cells

1. In the top right corner of the image, click on the three dots.

2. From the drop-down menu, select **Alt text**.
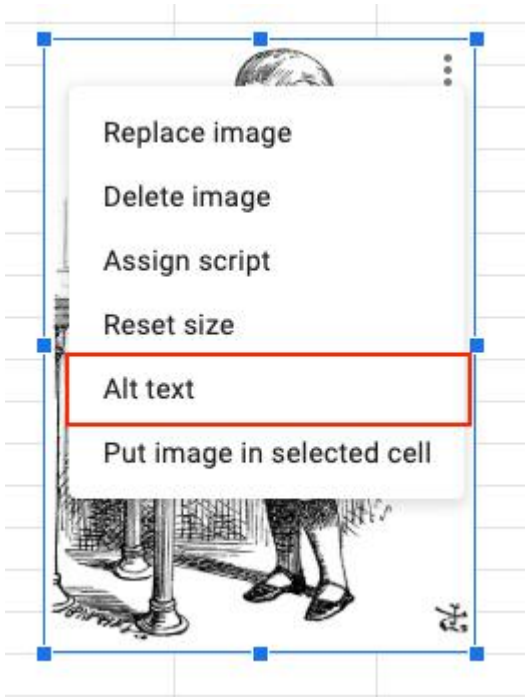
3. In the **Description** field type or paste appropriate alt text.



*Note*: The image used in the alt text screenshots above are by John

Tenniel from *Alice's Adventures in Wonderland* from the original 1865 edition of the book.

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

## 4.1 Named Styles

At this time (December 2019), Google Sheets does not offer named styles functionality.

You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

For more information on formatting using named styles, see [Technique 6](Technique 6).

*Note*: While office application suites support headings in much the same way, the named styles often differ.

Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing

results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

## 4.2 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

*To format cell characteristics*

1. Highlight the cells that you want to format
   *Note*: to format a row or column, select the row or column indicator and follow the next steps
2. Go to the menu icon bar
3. Select the icon or drop-down list for the format you would like to apply (e.g., **Format as currency**, **Format as percent**, **More formats**)
   *Note*: When formatting your spreadsheet, it is best to avoid merging cells. At times, it may seem easier to present your data by merging cells, but this can make it more difficult for users of assistive technologies and people navigating your spreadsheet using the keyboard.

For more details, see the following articles from the Google Help Center:

- How to edit and format a spreadsheet (includes how to format your entire spreadsheet with themes)
- How to format numbers in a spreadsheet

# Technique 5. Use Cell Addressing

## 5.1 Define Names

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. By associating a meaningful name to a data range, you will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

*To define a name*

1. Select the cells you would like to name
2. Go to menu item: **Data > Named ranges**. A menu will open on the right.

3. Type the range name you want (see Range Names, below).
4. To change the range, click the Spreadsheet Grid icon.
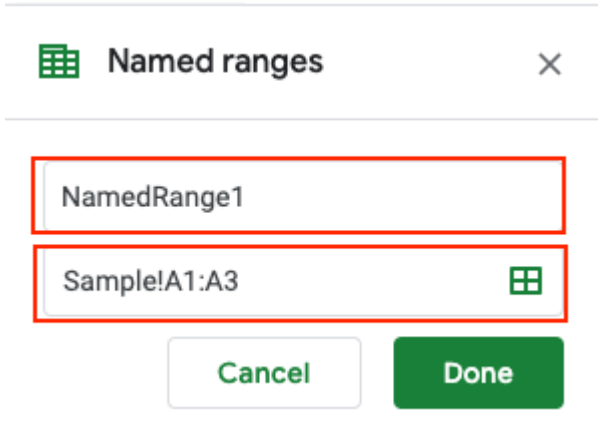
5. Select a range in the spreadsheet or type the new range into the text box, then click **Ok**.

6. Click **Done**.

---

**Range names:**

- Can contain only letters, numbers, and underscores.
- Can't start with a number, or the words "true" or "false."
- Can't contain any spaces or punctuation.
- Must be 1–250 characters.
- Can't be in either A1 or R1C1 syntax. For example, you might get an error if you give your range a name like "A1:B2" or "R1C1:R2C2."

*Edit or delete a named range*

1. Select **Data**, then **Named ranges**.
2. On the named range you want to edit or delete, click **Edit**.

   ◦ *To edit the range*: Enter a new name or range, then click
     **Done**.
   ◦ *To delete the named range*: Next to the name, click **Delete
     range**. On the menu that opens, click **Remove**.
   ◦ *Note*: When you delete a named range, any formulas that
     reference it will no longer work. Protected ranges that
     reference a named range will use the cell values and
     continue to work.

# Technique 6. Create Accessible Charts

Spreadsheet applications support various types of charts, which
can be used to display your spreadsheet data in meaningful ways
for your audience. It is important to ensure that your chart is as
accessible as possible to all members of your audience. All basic
accessibility considerations that are applied to the rest of your
document must also be applied to your charts and the elements
within your charts. For example, use shape and color, rather than
color alone, to convey information. As well, some further steps
should be taken to ensure that the contents are your chart are
appropriate labeled to give users reference points that will help to
correctly interpret the information.

*To create an accessible chart*

1. Go to menu item: **Insert > Chart**

2.  In the **Chart Editor** , a data range has been pre-selected and will appear in the box labeled Data. (Note: If this range is incorrect, enter a new range in the box labeled **Data** . To update the data range by manually highlighting the cells, select the **Select range...** link. This opens the **What data?** dialog, which allows you to highlight the data range and select **OK** .)

3.  In the **Chard Editor** dialog, select the **Use row 1 as headers** check box if the first row of your data is a header row

4.  Select the chart type from the **Recommended charts** section

5.  Select the **Customize** tab

6.  In the **Chart section** , enter a title for the chart in the **Chart title** box

7.  Select the **Name** link and enter a name for the chart in the **Chart name** box

8.  In the **Axis** section, enter a title for the vertical axis in the **Vertical name** box

9.  Select the **Horizontal** link and enter a title for the horizontal axis in the **Horizontal name** box

10. Define any other available options that may be associated with the chart

11. Select **Insert**

## *To add titles and labels*
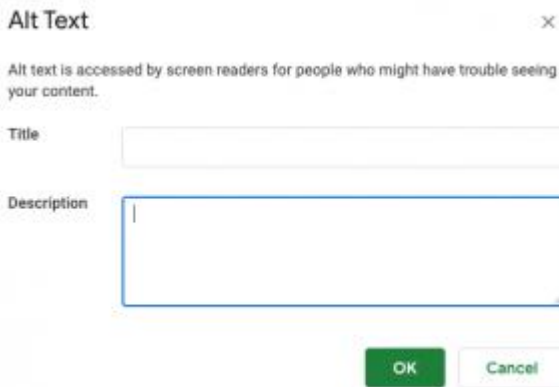
1.  Double-click on the chart you want to change.

2.  At the right, click **Customize**.

3.  Select **Series**.
    *Optional*: Next to "Apply to," choose the data series you want to add a label to.

4.  Click **Data labels**.
    *Optional*: Under "Position," choose where you want the data labels to show.
    *Optional*: Make changes to the label font.

*To add alternative text to a chart*

1. In the top right corner of the chart, click on the three dots.



Edit chart

Delete chart

Download ►

Publish chart

Copy chart

Move to own sheet

Alt text

2. From the drop-down menu, select **Alt text**.
3. In the **Description** field type or paste appropriate alt text.



Alt Text ✕

Alt text is accessed by screen readers for people who might have trouble seeing your content.

Title

Description

OK  Cancel

# Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9)

## Technique 7. Provide Structure for Tables

At this time (December 2019), Google Sheets does not include an "Insert Table" feature.

If you use the Grackle Sheets add-on, tables can be given structure and table headings can be indicated. While these fixes won't be useful for making tables more accessible in Google Sheets, it does allow you to export the document into another format with appropriate table tags intact. For more on Grackle Sheets, see Technique 11.

## Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:

## 8.1 Add a Document Title

At this time, Google Sheets makes use of a single document name. Within Google Sheets, this serves well as a title, but when exporting to ODT, the document name is used to form the file name and the ODT "Title" properties field is left blank.

In case the document is ever converted into another format (e.g., HTML or PDF), it should be given a descriptive and meaningful title.

*To change the file name of the current document*

1. Go to menu item: **File > Rename**
2. In the **Rename Document** dialog, enter a new document name
3. Click **OK**

## 8.2 Avoid "Floating" Elements

Avoid "floating" elements (other than charts) such as floating images, objects, tables or text boxes. Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

To learn how to insert images and graphical object into Google Sheets, see Google: Add an image to a spreadsheet.

## 8.3 Use Descriptive Sheet Names

In Google Sheets, spreadsheets have the default name "Sheet1" and

so on. To improve the accessibility and navigability of your spreadsheets, follow these recommendations:

- Name sheets with a sheet name that describes its content.
- Delete unused sheets to avoid unnecessary navigation.

## *To rename a spreadsheet*

1.  At the bottom of your Google Sheet, click on the drop-down arrow beside the sheet name.
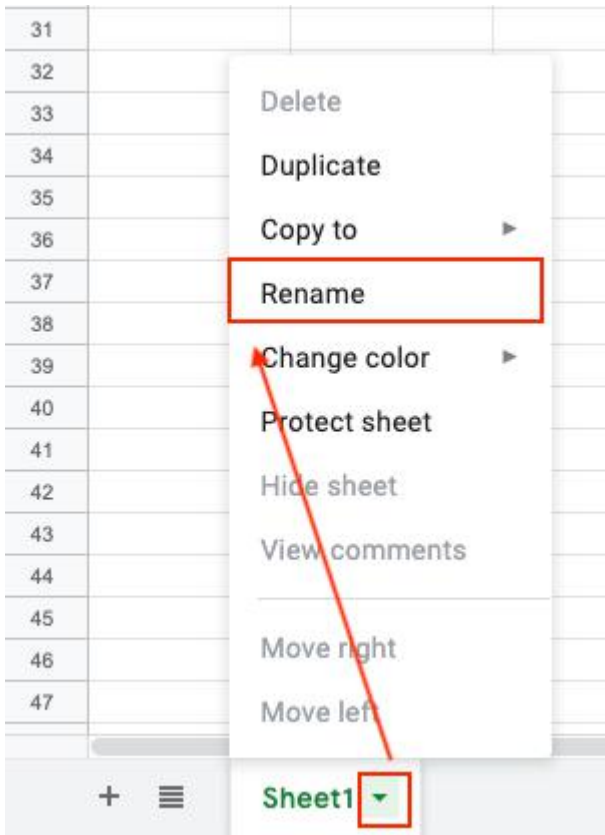


Note: Alternately, you can double click on the sheet name.

2. Type a descriptive name for your sheet and hit **Enter**.



# Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing

font sizes directly will change document details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ratio of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.
In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or

distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: Google Search: gray-scale conversion tool.

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Google Sheets's review functionality features to track changes, such as revision history.
- Do not distinguish between images by referring to their appearance (e.g. ,"the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g.,

to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to Understand

### 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

### 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. If you are using this cell for a label or data, you can

attach a comment note to the cell containing navigational instructions.

## 10.3 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

### *To add hyperlinks with meaningful text*

1. Go to menu item: **Insert > Link.** Alternately, you can select the text you'd like to add a link to and press Ctrl+K (or Cmd+K on Macs).
2. In the pop-up box, enter descriptive text in the **Text** display box.
3. Enter the link address in the **Link**.
4. Select **Apply**.

# Technique 11. Check Accessibility

At this time (December 2019), Google Sheets does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. However, a third-party add-on called Grackle Sheets can be used to check the accessibility of your workbook (see below).

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats (see Evaluating the Accessibility in Other Formats).

## Grackle Sheets

**What is Grackle Sheets?** Grackle Sheets is a third-party add-on that runs on spreadsheets created in Google Sheets. It helps with checking and improving the digital accessibility of your document. Due to the nature of Google Sheets, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like an HTML file.

**How does it work?** After Grackle is launched, It scans the current spreadsheet for accessibility issues and identifies and locates errors. Feedback appears in a sidebar that is docked on right-side of the screen. By exploring the sidebar, you can immediately learn about accessibility issues and find and fix the detected errors by interacting with the Grackle sidebar.

*Note*: Grackle's accessibility checker is free to use; however, the ability to export and produce accessible HTML spreadsheets, and so on, is only free for the first 30 days (as of December 2019).

At the time of testing, Grackle Sheets performs the following 13 accessibility checks:

- Sheets
  - Sheets document needs a proper title
  - Sheet names should be descriptive
  - The number of sheets should be reasonable
  - Avoid making sheets too large
  - Sheets should not be empty
- Tables
  - Tables should have headers
  - Tables should not be too long
  - The number of tables should be reasonable
  - The use of merged cells is not recommended
  - Avoid isolated cells
- Charts
  - Charts should have alternate text
- Contents
  - High color contrast should be used
  - Fine print should be avoided

## *How to install Grackle Sheets*

[Grackle Sheets](#) can be installed from the **Add-ons** menu of a Google Docs document.

1. Open a [Google document](#).
2. Select **Add-ons** > **Get Add-ons**.

    - Search for **"Grackle"** in the search field.
    - Select the add-on and click **Install**.

3. *Note*: A message will appear requesting access to data that the add-on needs to work. Review the message and click **Allow**.
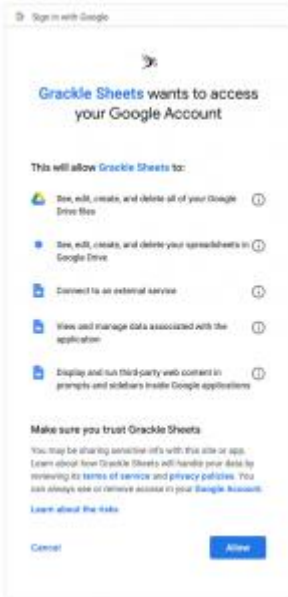
*How to launch and use Grackle Sheets*

[Grackle Sheets](#) is simple to launch and is accessed from the **Add-ons** menu.

1. Open a [Google document](#)
2. From the **Add-ons** menu, select **Grackle Docs**, then select **Launch**.
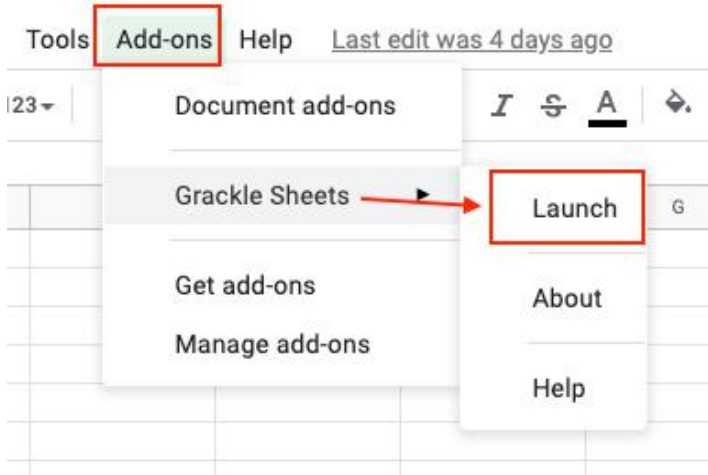
3. A sidebar launches that identifies errors and warnings.

    ◦ Clicking on each error and warning will expand the
      selection and provide guidance on how to resolve each
      issue.
    ◦ Select the "Locate" button on any flagged item will take
      you to that line of the document to review.

4. Continue to review and address each flagged item.

    ◦ Select the "Re-Check" button at the top of the sidebar to
      update the report.
    ◦ Continue to revise until all checks have passed.

**Grackle Sheets** ✕

**Accessibility Check**  Table Structure

Re-Check  Publish HTML

13 of 13 checks passed  ↗ ⌄

**Sheets**  Passed ✓

✓ Sheets document needs a proper title

✓ Sheet names should be descriptive

✓ The number of sheets should be reasonable

✓ Avoid making sheets too large

✓ Sheets should not be empty

**Tables**  Passed ✓

✓ Tables should have headers

✓ Tables should not be too long

✓ The number of tables should be reasonable

✓ The use of merged cells is not recommended

✓ Avoid isolated cells

*Note:* During testing, we noticed that Grackle Sheets may flag a chart as needing alt text even though alt text has been provided.

Automated accessibility checkers cannot be trusted to check for all accessibility concerns, so be sure to review the recommended techniques in this document.

# Evaluating Accessibility in Other Formats

## *To evaluate HTML accessibility*

If you wish to check the accessibility of your document or template (see Technique 1), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## Share a presentation in HTML view

When using Google Slides' HTML view, your whole presentation is displayed in a single, scrollable HTML page, instead of displaying the presentation one slide at a time. This is a helpful feature if your audience includes people who use screen readers.

To access a presentation in HTML view, use the keyboard shortcut Ctrl + Alt + Shift + p (Windows or Chrome OS) or ⌘ + Option + Shift + p (Mac).

# Export to alternate formats

1. Go to menu item: **File > Download as**
2. Select the file type

## *PDF*

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see [Technique 11](#).

## *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 11](#))
  *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is

not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- [OOo2GD](#) – an extension that allows you to export, update and import all your documents, spreadsheet and presentations between OpenOffice.org applications and Google docs.
- [Google Sheets Section 508 Compliance](#)
- [Keyboard shortcuts for Google Sheets](#)
- [Google: Make your document or presentation more accessible](#)

## Accessibility Help

If you are interested in what features are provided to make using Google Sheets more accessible to users, documentation is provided through online articles and Help forums:

- Go to menu item: **Help > Google Docs Help Center**

## References and Resources

1. [Google Sheets Online Help Center](#)
2. [GAWDS Writing Better Alt Text](#)
3. [Google: Keyboard shortcuts for Google Sheets](#)
4. [Google: Make your document or presentation more accessible](#)

## Acknowledgments

This document was produced as part of the [Accessible Digital Office Document (ADOD) Project](#).

This project has been developed by the Inclusive Design Research

Centre, OCAD University as part of an EnAbling Change Partnership project with the Government of Ontario and UNESCO (United Nations Educational, Scientific and Cultural Organization).

# Microsoft Excel 2010, 2013, 2016, and 2019

## Usage Notes

At the time of testing (December 2019), Excel 2010 and later versions provide a set of accessibility features that are sufficient to enable the production of accessible digital office documents. In addition, Excel includes an accessibility checking feature.

## How to Create an Accessible Office Document

You should use these techniques when you are using Excel to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the W3C-WAI Web**

[Content Accessibility Guidelines (WCAG 2.0)](#) **because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

The default file format for Excel is **Office Open XML (XSLX)**. In addition, Excel offers many other spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in Technique 12 (below):

- MS Excel
- PDF
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using Microsoft Excel 2010 (ver.14.0.4760.1000, Windows XP, Sept. 2010)  and Microsoft Excel included with Office 365 while creating a XLSX document. Files are also easily saved as other file formats (see  <span style="color:blue">Technique 12</span>, below).

## Technique 1: Using Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see <span style="color:blue">Technique 11</span>, below).

Excel's default template for new documents is a blank page. The basic installation also includes other blank office-related documents. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in Excel. You can also edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## How to Create an Accessible Template

1. Create a new document.
2. Ensure that you follow the techniques in this document.
3. When you are finished you should also check the accessibility of the document (see [Technique 11](#), below).
4. Go to menu item: **File > Save As**
5. In the **Save as type** list, select **Excel Template**
6. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Inventory Template") will increase the prominence of the accessibility status. Also, filling in the text box labeled Tags with the term "accessibility" will improve its searchability as an accessible file.
7. Select **Save**.
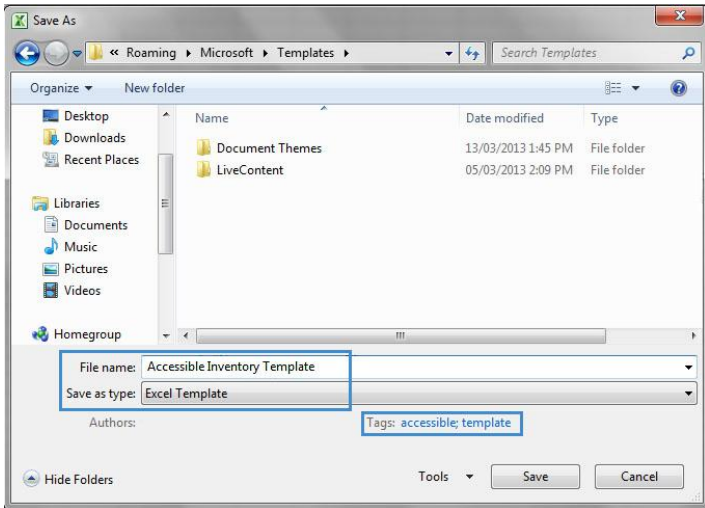


**Editor's note:** For those using later versions of Excel,

here's a [video about finding and exploring features of accessible Excel templates](#).

## Selecting an Accessible Template

Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1.  Go to menu item: **File > New**.
2.  Under **Available Templates**, select **My Templates**.
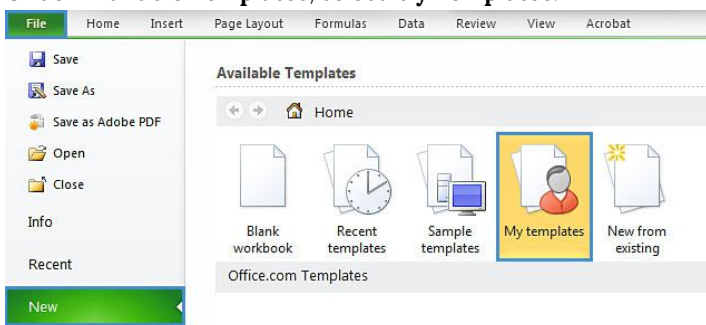


3.  In the **New** document dialog, select your accessible template from the list.
4.  Select **OK**.
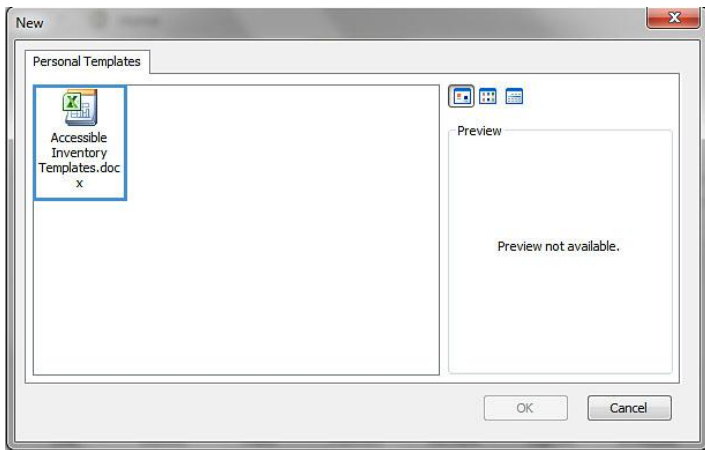
5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2: Setting the Document Language

At this time (December 2019), it is not possible to indicate the natural language of selected cells within an Excel workbook.

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

### *How to Change the Default Language for a Workbook*

1. Go to menu item: **File**.
2. Select **Options** from the list in the left window pane.

3. Select **Language** from the list in the left of the **Options** dialog.
4. Under **Chose Editing Languages**, select the editing language you want to use.
   *Note*: to add an editing language, select the language from the drop down list labeled. **[Add additional editing languages]**
5. Select **Set as Default**.
6. Close all Office programs and open them again for the changes to take effect.



# Technique 3: Providing Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text (use "Description" in Excel)*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank.
- If the image contains meaningful text, ensure all of the text is replicated.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below.
- Test by having others review the document with the images replaced by the alternative text.

*Tips for writing longer descriptions (use "Description" in Excel)*

- Long descriptions should be used when text

alternatives (see above) are insufficient to answer the question "what information is the image conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone.
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click* the object.
2. Select **Format Picture...**
3. Select the **Alt Text** option from the list.
4. Fill in the **description**.

If an Excel document is saved to HTML, the **Title** and **Description** fields are combined into a single entry within the HTML <alt> tag.

> **Editor's note:** To add alt text to a picture in later versions of Excel, follow these instructions:
>
> 1. Right-click* on the object.
> 2. Select **Edit Alt Text**.
> 3. Add a description in the **Description** field.

For more details, see [how to add alt text to an image or graphical object](#).

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

## 4.1 Named Styles

You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names). For more information on formatting using named styles, see [Technique 9](#).

   *Note:* While office application suites support headings in much the same way, the named styles often differ.

Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

## To format a cell with default named styles

1. Highlight the cells that you want to format
   *Note*: to apply a style to an entire row or column, select the row or column indicator and follow the next steps
2. Go to menu item: **Home**.
3. In the **Styles** section, select the **Cell Styles** icon.
4. Select the desired formatting style from the drop-down menu.
   *Note*: To modify a style, right-click* the desired formatting style from the drop-down menu and select **Modify**. Changes made to the style will affect all instances of the style within your workbook.

## 4.2 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

## To format cell characteristics

1. Highlight the cells that you want to format
2. Go to menu item: **Home**.

3. In the relevant sections (e.g., **Numbers**, **Font**, etc.) make your adjustments.
   *Note*: When formatting your spreadsheet, it is best to avoid merging cells. At times, it may seem easier to present your data by merging cells, but this can make it more difficult for users of assistive technologies and people navigating your spreadsheet using the keyboard.

# Technique 5. Use Cell Addressing

## 5.1 Define Names

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. It can also be use as a navigation. When using the shortcut **Ctrl + G** a dialog box will open and layout all the names define in the cells. When selected and the OK button is pressed it will navigate to the located place.

By associating a meaningful name to a data range, you will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

### *To define a name*

1. Highlight the cells you would like to name.
2. Go to menu item: **Formulas**.
3. In the **Defined Names** section, select the **Define Name** button.
4. In the **Name** text box, enter the name for the data range
5. In the **Scope** drop-down list, select scope within which the

name can be referenced

6. Select **OK**



## Technique 6. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

## *To create a chart*

1. Select the data that you want to include in the chart
2. Go to menu item: **Insert**
3. In the **Charts** section, select the icon of the type of chart you would like to insert
4. Select a **Chart Type** from the **Chart Gallery** in the drop-down menu

## *To add titles and labels*

1. In the **Chart Tools** menu section, go to menu item: **Layout**
2. In the **Labels** section, select the type of title or label you would like to define (e.g., **Chart Title, Axis Titles, Data Labels**)
   *Note*: It is a good idea to use as many of the titles and labels available in this section as possible.

## *To apply a predefined Chart Layout*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Chart Layouts** section, select a **Quick Layout** from the scrolling **Chart Layouts** gallery

*To change to a different predefined Chart Type*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Type** section, select the **Change Chart Type** icon
3. In the **Change Chart Type** dialog, select a chart type from the left pane
4. Select a **Chart Design** from the right pane
5. Select **OK**

*To apply alternative text to a chart*

1. Right-click* the chart
   *Note*: Make sure you are right-clicking the whole chart, not just an element within the chart. It is possible to add descriptions to the many elements that make up a chart, but this is not recommended.
2. In the **Format Chart Area** dialog, select **Alt Text**
3. Enter a **Title** in the **Title** box
4. Enter a longer description of the chart contents in the **Description** box
5. Select **Close**

## Other chart considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9, below)

*Selecting charts with the keyboard:*

You can select charts from selection pane.
This can be launched with keyboard sequence ALT+H,FD,P

1. Press **ALT+H** and release the buttons



2. Type press **FD**
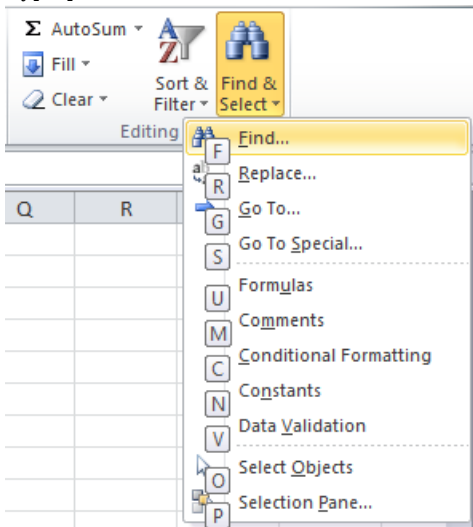


3. Then Type **P**
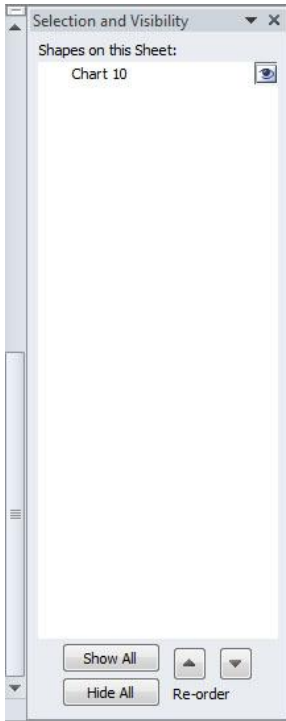
This is a toggle command, so if the selection pane is already visible, it gets hidden after this.

When the selection pane is active, by default the first object (chart or shape) will be highlighted. You can select it by pressing enter or tab to move to other options or use the arrow keys.

## Technique 7. Provide Structure for Tables

Excel includes an "Insert Table" feature, but this works by applying cell formatting to spreadsheet cells. As such, it is not a structural feature in the same way that tables are in Word and PowerPoint.

# Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:

## 8.1 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File**
2. Select **Info** from the list in the left window pane
3. In the right window pane, select the **Title** text box
4. Enter the **Title**
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## 8.2 Avoid "Floating" Objects

Avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

# Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

*To change the text size for a default named style*

1. Go to menu item: **Home**
2. In the **Styles** section, select the **Cell Styles** icon

3. Select the style to modify from the list
4. Right-click* and select: **Modify...**
5. In the **Style** dialog, select the **Format** button



6. In the **Format Cells** dialog, select the **Font** tab
7. In the **Size** text box, type the desired size or select it from the list
8. Select **OK**

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern. In order to determine whether the colors in your

document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: Google Search: gray-scale conversion tool.

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Google docs: Spreadsheet's review functionality features to track changes, such as revision history.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or

within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. For example, the first cell might read: "This worksheet includes two data tables. The first begins at cell A1 and lists travel expenses. The second begins at cell A50 and lists moving expenses."

## Technique 11. Check Accessibility

If you wish to check the accessibility of your document or template (see [Technique 1](#), above), Excel offers an "Accessibility Checker" to review your document against a set of possible issues that users with disabilities may experience in your file.

*The "Accessibility Checker" classifies issues as*

- **Error** – content that makes a file very difficult or impossible for people with disabilities to understand
- **Warning** – content that in most, but not all, cases makes a file difficult for people with disabilities to understand
- **Tip** – content that people with disabilities can understand, but that might be better organized or presented in a way that would maximize their experience

To learn more about the Accessibility Checker and the rules it uses to identify and classify accessibility issues in your document, visit the Excel help section (see Accessibility Help, below). Use the search term "accessibility checker rules" in the help search box.

## To use the "Accessibility Checker"

1. Go to menu item: **File**
2. Select **Info** in the left window pane
3. Under **Prepare for Sharing**, an alert will appear if a potential accessibility issue has been detected
4. To view and repair the issues, select **Check for Issues** and then **Check Accessibility**



5. An **Accessibility Checker** task pane will open, showing the inspection results

6. Select a specific issue to see **Additional Information**
7. Follow the steps provided to fix or revise the content

Accessibility Checker
Inspection Results

! Errors
☐ Missing Alt Text
Oval 6
Picture 4
Picture 5

⚠ Warnings
☐ Objects not Inline
Oval 6

☐ Repeated Blank Characters
6 Characters

Additional Information

Why Fix:
Alternate text helps readers understand information presented in pictures and other objects.

How To Fix:
To add alternate text to a picture or object:
1) Right-click on the object and select the Format command.
2) Switch to the Alt Text tab.
3) Type a description of the

In order to get further indication of the accessibility of your document or template (see Technique 1), then you may consider

saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

## *To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11 (above).

1. Go to menu item: **File**
2. Select **Save As**
3. In the **File name** box, type a name for the file
4. In the **Save as type** list, select **PDF or XPS Document**
5. Select the **Options** button
6. Under **Include non-printing information** in the **Options** dialog, ensure that the **Document structure tags for accessibility** check box is selected
7. Select **OK** and **Save**

## HTML

1. Go to menu item: **File**
2. Select **Save As**
3. In the **File name** box, type a name for the file
4. In the **Save as type** box, select **Web Page**
5. Select **Save**
6. Check the HTML file for accessibility (see <u>Technique 11</u>, above)

*To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes

- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see Technique 11, above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- Keyboard shortcuts in Excel 2010
- Microsoft Accessibility Page
- Office 2010 Accessibility Tutorials

## Accessibility Help

If you are interested in what features are provided to make using Excel more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **File**
2. Select **Help** from the list on the left
3. Under the **Support** section, select the **Help** icon
4. Enter "Accessibility" as your search term in the **Help** dialog box

> **Editor's note:** For later versions of Excel, here are resources to help you create accessible workbooks.
>
> - [Microsoft Excel Accessibility Video Training](#)
> - [Make your Excel documents accessible to people with disabilities](#)

## References and Resources

1. [Microsoft Excel Help](#)
2. [GAWDS Writing Better Alt Text](#)
3. [Microsoft: Create Accessible Workbooks](#)
4. [Ryerson University: Microsoft Excel Accessibility Tipsheet (PDF)](#)
5. [Microsoft Excel: Video Tutorials](#)

## Acknowledgments

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This project has been developed by the Inclusive Design Research Centre, OCAD University as part of an EnAbling Change Partnership project with the Government of Ontario and UNESCO (United Nations Educational, Scientific and Cultural Organization).

# Microsoft Excel for Mac 2008, 2011, 2016, and 2019

## Usage Notes

At the time of testing (December 2019), as long as images and graphical objects are avoided, Excel for Mac provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, Excel 2008 for Mac does not include an accessibility checking feature.

> **Editor's note:** In the later versions of Excel for Mac, users can add alt text for images and graphical objects and check accessibility. For more information, see Excel for Mac Help.

## What's an "Office Document"?

You should use these techniques when you are using Excel for Mac to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),

- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

## File Formats

The default file format for Excel for Mac is **Office Open XML (XLSX)**.

In addition, Excel for Mac offers many other spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in Technique 12 (below):

- XLS (MS Excel 97 – 2004)
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

**\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using Microsoft Excel 2008 for Mac (ver. 12.0 (071130), Mac OS X, Jan. 2011) and Microsoft Excel (version 16.16.16) while creating a XLSX document. Files are also easily saved as other file formats (see Technique 12, below).

This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: adod-comments@idrc.ocad.ca.

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a

template is accessible, you should check a sample document produced when the template is used (see Accessibility Checking, below).

Excel for Mac's default template for new documents is a blank page. The basic installation also includes other blank office-related documents. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in Excel for Mac. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see Technique 10, below)
4. Go to menu item: **File > Save As**
5. In the **Save As** box, type a name for the template. Using a descriptive file name (e.g., "Accessible Inventory Template") will increase the prominence of the accessibility status.
6. In the **Format** list, select **Excel 97–2004 Template (.xlt)**
7. Select **Save**
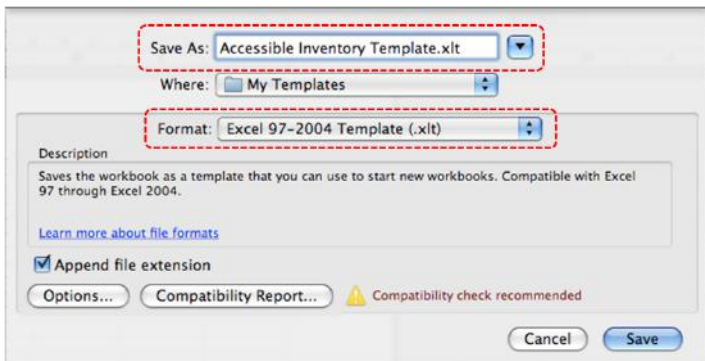
*To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > Project Gallery...**
2. In the **Category** section, select **My Templates** (or select where you saved your accessible template)
3. Select your accessible template from the template gallery
4. Select **Open**



5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Set Document Language

At this time, it is not possible to indicate the natural language of selected cells within an Excel for Mac workbook. As well, it is not possible to change the default language of an Excel for Mac workbook.

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

At this time, Excel 2008 for Mac does not offer the functionality of adding alternative text to images or graphical objects.

> **Editor's note:** For later versions of Excel for Mac, users can add alt text. For more information, see [how to add alt text for images and graphical objects](#).

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## *To add alternative text to images and graphical objects*

1. Select the object, then choose one of the options below:

   ◦ Right-click the object and select **Edit Alt Text…**. The **Alt Text** pane opens.

- ■ *Note*: If the **Edit Alt Text...** option is not visible, select **Format Object/Picture**.
  - ◦ Alternately, select an object. In the menu, select the object's **Format** tab. Then, select **Alt Text**.

2. In the **Alt Text** pane, add the alternative text to the **Description** field.

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

# 4.1 Named Styles

At this time, Excel for Mac does not offer a Named Styles feature.

You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

For more information on formatting using named styles, see Technique 9.

*Note:* While office application suites support headings in much the same way, the named styles often differ.

Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

# 4.2 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

*To format cell characteristics*

1. Highlight the cells that you want to format
2. Go to menu item: **Format > Cells...**

3. In the relevant sections (e.g., **Numbers**, **Alignment**, etc.) make your adjustments
*Note*: When formatting your spreadsheet, it is best to avoid merging cells. At times, it may seem easier to present your data by merging cells, but this can make it more difficult for users of assistive technologies and people navigating your spreadsheet using the keyboard.

## Technique 5. Use Cell Addressing

## 5.1 Define Names

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. By associating a meaningful name to a data range, you will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

*To define a name*

1. Highlight the cells you would like to name
2. Go to menu item: **Insert > Name > Define...**
3. In the **Define Name** dialog, enter the name for the data range in the **Names in workbook** text box
4. Select **Add**
5. Select **OK**

## Technique 6. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

*To create a chart*

1. Select the data that you want to include in the chart
2. Go to menu item: **Insert > Chart...**
3. Select your chart type from the **Charts** section that opens above the document pane
   *Note*: This applies a predefined Chart Layout, which can be

changed at any time simply by selecting the chart and
following **Steps 2 and 3** above.



## *To add titles and labels*

1. Select the chart
2. If the **Formatting Palette** is not open, go to menu item: **View >
   Toolbox, Formatting Palette**
3. Select **Chart Options** to open the **Chart Options** section, if it is
   not already open
4. Under **Titles**, select the title from the **Chart Title** drop-down
   list or enter a title in the text box below the drop-down list
5. Under **Other options**, select the **Labels** and **Legends** you
   would like to include from their respective drop-down lists
6. Under **Chart Data**, select **Data Table with Legend Keys** from
   the **Data Table** drop-down list to include a data table to help
   further support the chart
   *Note*: It is a good idea to use as many of the titles and labels as
   possible.
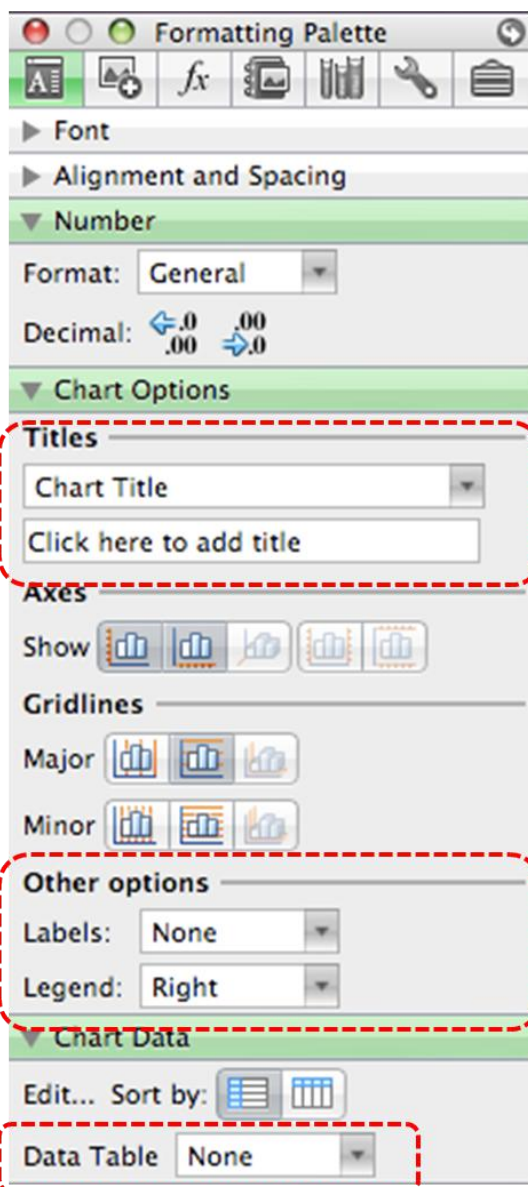
## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9](#), below)

## Technique 7. Provide Structure for Tables

Excel for Mac includes a "Data Table" feature, but this meant for analyzing data by applying preformatted formulas within the data table. As such, it is not a structural feature in the same way that tables are in Word.

## Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:
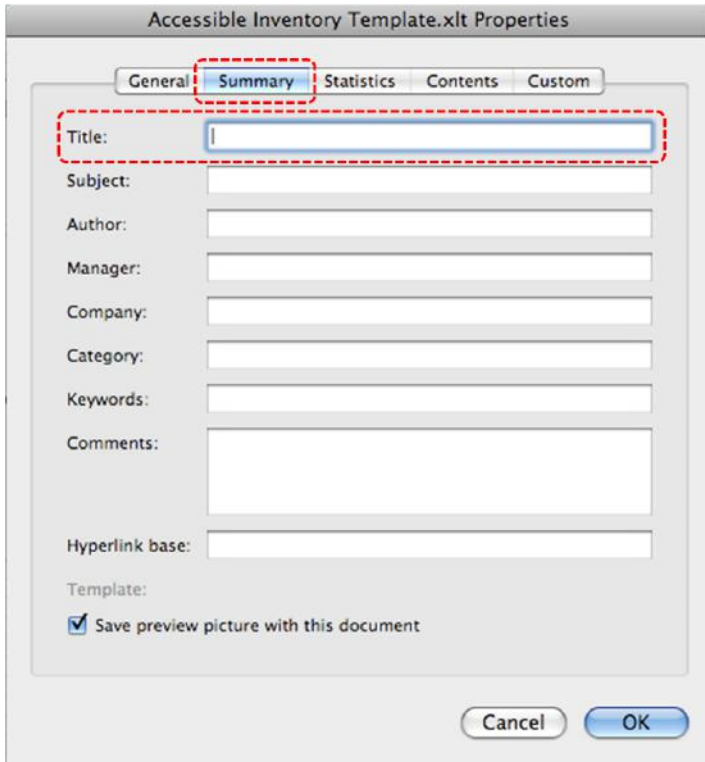
## 8.1 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File > Properties...**
2. Select **Summary**
3. In the **Title** text box and enter the **Title**
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.



## 8.2 Avoid "Floating" Elements

Avoid "floating" elements (other than charts) such as floating

images, objects, tables or text boxes.

Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.
In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

> **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Excel for Mac's "Track Changes" features to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

# Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of white space and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. If you are using this cell for a label or data, you can attach a comment note to the cell containing navigational instructions.

# Technique 11. Check Accessibility

At this time, Excel 2008 for Mac does not offer a mechanism to check for potential accessibility errors in your document prior to publishing.

> **Editor's note:** Later versions of Excel for Mac include an accessibility checker. For detailed instructions about how to use the accessibility checker, see how to make your Excel documents accessible to people with disabilities.

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML in order to perform an accessibility check in one of those formats, as described below.

## To evaluate HTML accessibility

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking option.
3. Select the **Start Checking** button.

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

*Note:* Before saving in other formats, you may want to run the **Compatibility Report** feature by selecting **Compatibility Report…** from the **Save As** dialog. This checks the compatibility of your existing document with the format you have selected save your document as. The results of this check are revealed in the **Compatibility Report** dialog, where you have explanations of errors

and options to fix them. To run this check at any time, go to menu item: **View > Toolbox, Compatibility Report**.

# XLS

1. Go to menu item: **File > Save As...**
2. In the **Save As** box, type a name for the file
3. In the **Format** drop-down list, select **Excel 97 – 2004 Workbook (.xls)**
4. Select **Save**

# HTML

1. Go to menu item: **File > Save as Web Page...**
2. In the **Save As** box, type a name for the file
3. Select **Save**
4. Check the HTML file for accessibility (see <u>Technique 11</u>, above)

## *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see <u>Technique 11</u>, above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results by the IDRC.

• Coming soon…

## Accessibility Help

If you are interested in what features are provided to make using Excel for Mac more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help > Microsoft Excel Help**
2. Enter "Accessibility" as your search term in the **Help** dialog box

*To use the accessibility checker in Word for Mac*

1. Select **Review > Check Accessibility**.
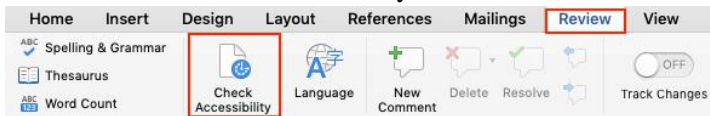


2. Review the results in the **Accessibility Checker** pane.
3. Select a specific issue to see why and how to address the items flagged in the Accessibility Checker results.

For more information, see the following resources from Microsoft:

- [Everything you need to know to write effective alt text](#)
- [Make your content accessible to everyone with the Accessibility Checker](#)

## References and Resources

1. Microsoft Excel 2008 for Mac Help – *Note:* Excel 2008 for Mac is no longer supported, but you still have access to offline help by going to **Help** > **Excel Help**.
2. [GAWDS Writing Better Alt Text](#)
3. [Microsoft Excel 2016 for Mac Help](#)
4. [Ryerson University: Microsoft Excel Accessibility Tipsheet (PDF)](#)
5. [Microsoft Excel: Video Tutorials](#)

## Acknowledgments

# Microsoft Excel 2007

## Usage Notes

At the time of testing (January 10, 2011), Excel 2007 provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, Excel 2007 does not include an accessibility checking feature.

## What's an "Office Document"?

You should use these techniques when you are using Excel 2007 to create documents that are:

- **Intended to be used by people**(i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
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**specifically designed to provide guidance for highly dynamic and/ or interactive content.**


# File Formats

The default file format for Excel 2007 is **Office Open XML (XLSX)**.

In addition, Excel 2007 offers many other spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in Technique 12 (below):

- MS Excel (XLS)
- PDF
- HTML


# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. The application-specific steps and screenshots in this document were created using Microsoft Excel 2007 (ver.12.0.6545.5000, Windows 7, Jan. 2011) while creating a XLSX document. Files are also easily saved as other file formats (see Technique 12, below).

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Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11, below).

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It is possible to create your own accessible templates from scratch in Excel 2007. As well, you can edit and modify the existing

prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see Technique 11, below)
4. Go to menu item: **Office > Save As > Other Formats**
5. In the **Save as type** list, select **Excel Template**
6. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Inventory Template") will increase the prominence of the accessibility status. As well, filling in the text box labeled Tags with the term "accessibility" will improve its searchability as an accessible file.
7. Select **Save**

## *To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **Office > New**
2. Under **Templates**, select **My templates...**

3.  In the **New** document dialog, select your accessible template from the list
4.  Select **OK**
5.  A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

At this time, it is not possible to indicate the natural language of selected cells within an Excel 2007 workbook. [**Tested: Jan 10, 2011**]

*To change the default language for a workbook*

1. In the operating system, activate the keyboard layout for the language in which you want to create and edit text

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

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- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
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- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the

document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click* the object
2. Select **Size...**
3. Select the **Alt Text** tab
4. Fill in the **Alternative text** box

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

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You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names). For more information on formatting using named styles, see [Technique 9](#).

*Note*: While office application suites support headings in much the same way, the named styles often differ.

Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

### *To format a cell with default named styles*

1. Highlight the cells that you want to format
   *Note*: to apply a style to an entire row or column, select the

row or column indicator and follow the next steps

2. Go to menu item: **Home**
3. In the **Styles** section, select the **Cell Styles** icon
4. Select the desired formatting style from the drop-down menu
   *Note*: To modify a style, right-click\* the desired formatting style from the drop-down menu and select **Modify**. Changes made to the style will affect all instances of the style within your workbook.

## 4.2 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

*To format cell characteristics*

1. Highlight the cells that you want to format
2. Go to menu item: **Home**
3. In the relevant sections (e.g. **Numbers**, **Font**, etc.) make your adjustments
   *Note*: When formatting your spreadsheet, it is best to avoid merging cells. At times, it may seem easier to present your data by merging cells, but this can make it more difficult for users of assistive technologies and people navigating your spreadsheet using the keyboard.

## Technique 5. Use Cell Addressing

# 5.1 Define Names

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. By associating a meaningful name to a data range, you will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

## *To define a name*

1. Highlight the cells you would like to name
2. Go to menu item: **Formulas**
3. In the **Defined Names** section, select the **Define Name** button
4. In the **Name** text box, enter the name for the data range
5. In the **Scope** drop-down list, select scope within which the name can be referenced
6. Select **OK**

# Technique 6. Create Accessible Charts

Spreadsheet applications support various types of charts, which can be used to display your spreadsheet data in meaningful ways for your audience. It is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help to correctly interpret the information.

## *To create a chart*

1. Select the data that you want to include in the chart
2. Go to menu item: **Insert**
3. In the **Charts** section, select the icon of the type of chart you would like to insert
4. Select a **Chart Type** from the **Chart Gallery** in the drop-down menu

## *To add titles and labels*

1. In the **Chart Tools** menu section, go to menu item: **Layout**
2. In the **Labels** section, select the type of title or label you would like to define (e.g., **Chart Title, Axis Titles, Data Labels**)
   *Note*: It is a good idea to use as many of the titles and labels available in this section as possible.

*To apply a predefined chart layout*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Chart Layouts** section, select a **Quick Layout** from the scrolling **Chart Layouts** gallery

*To change to a different predefined chart type*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Type** section, select the **Change Chart Type** icon
3. In the **Change Chart Type** dialog, select a chart type from the left pane
4. Select a **Chart Design** from the right pane
5. Select **OK**

## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Other Considerations, below)

## Technique 7. Provide Structure for Tables

Excel 2007 includes an "Insert Table" feature but this works by applying cell formatting to spreadsheet cells. As such, it is not a

structural feature in the same way that tables are in Word 2010 and PowerPoint 2010.

## Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:

## 8.1 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **Office > Prepare > Properties**
2. In the **Document Properties** section that appears, select the **Title** text box
3. Enter the **Title**
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## 8.2 Avoid "Floating" Elements

Avoid "floating" elements such as floating images, objects, tables or

text boxes.

Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

*To change the text size for a default named style*

1. Go to menu item: **Home**
2. In the **Styles** section, select the **Cell Styles** icon
3. Select the style to modify from the list
4. Right-click\* and select: **Modify...**
5. In the **Style** dialog, select the **Format** button



6. In the **Format Cells** dialog, select the **Font** tab
7. In the **Size** text box, type the desired size or select it from the list
8. Select **OK**

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: Google Search: gray-scale conversion tool.

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content

should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Google docs: Spreadsheet's review functionality features to track changes, such as revision history.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of

whitespace and by avoiding too many different colors, fonts and images.

- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. If you are using this cell for a label or data, you can attach a comment note to the cell containing navigational instructions.

## Technique 11. Check Accessibility

At this time, Excel 2007 does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: January 10th, 2011]**

In order to get some indication of the accessibility of your document or template (see [Technique 1](#)), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

### *To evaluate HTML accessibility*

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

## *To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

   **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11 (above).

1. Go to menu item: **Office > Save As > PDF or XPS**
2. In the **File name** box, type a name for the file
3. Select the **Options** button
4. Under **Include non-printing information** in the **Options** dialog, ensure that the **Document structure tags for accessibility** check box is selected
5. Under **PDF options**, ensure that **Bitmap text when fonts may not be embedded** check box is de-selected
6. Select **OK** and **Save**

## HTML

1. Go to menu item: **Office > Save As > Other Formats**
2. In the **File name** box, type a name for the file
3. In the **Save as type** box, select **Web Page**
4. Select **Save**
5. Check the HTML file for accessibility (see <u>Technique 11</u>, above)

*To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags

- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 11](#), above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- [Office 2007 Accessibility Tutorials](#)
- [Excel 2007 Shortcut and Function Keys](#)

## Accessibility Help

If you are interested in what features are provided to make using Excel 2007 more accessible to users, documentation is provided in the Help system:

1. Select **Help** icon in the right corner of the application window or select **F1**
2. Enter "Accessibility" as your search term in the **Help** dialog box

# References and Resources

1. Microsoft Excel Help
2. GAWDS Writing Better Alt Text
3. Ryerson University: Microsoft Excel Accessibility Tipsheet (PDF)
4. Microsoft Excel: Video Tutorials

# Acknowledgments

# Numbers for Mac

## Usage Notes

At the time of testing (September 30, 2010), Numbers '09 lacks several features that enable accessible office document authoring, most notably: the ability to add alternative text to images and objects, the ability to indicate nature language, and programmatically determined named styles, cell naming, image and object anchoring, or change tracking features. As a result, some of the other features that might otherwise support accessibility, such as its extensive templates are not as effective. In addition, Numbers '09 does not include an accessibility checking feature, which is a more advanced accessibility feature.

**Editor's note:** In later versions of Numbers, Apple added some updates to improve accessibility, including the ability to add alt text to images and graphical objects. To learn more about accessibility tips in Numbers, see [how to create accessible spreadsheets with Numbers](#).

## What's an "Office Document"?

You should use these techniques when you are using Numbers to create documents that are:

- **Intended to be used by people** (i.e., not computer code),

- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.**

## File Formats

The default file format for Numbers is the native **iWork format**.

In addition, Numbers '09 offers many other spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 13](#):

- MS Excel
- TSV
- CSV
- PDF

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using iWork Numbers '09 (ver.2.0.3 (332), Mac OS X, Sept. 2010) and Numbers 6.1 (December 2019) while producing a document in the proprietary file format. Files are also easily saved as other file formats (see ).

# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a

"Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see [Technique 12]).

The default template for new documents in Numbers is a blank spreadsheet, which is accessible by virtue of being blank.

## *To create an accessible template*

1. Go to menu item: **File > New** or **File > New from Template Chooser...** (Shift+Apple+N)
2. In the **Template Chooser** dialog, select the **Blank template** or select one of the other existing template designs
3. A new document in your selected template style will open
4. Ensure that you follow the techniques in this document
5. When you are finished you should also check the accessibility of the document (see [Technique 12])
6. Go to menu item: **File > Save as Template...**
7. In the **Export As** box, type a name for the template. Using a descriptive template name (e.g. "Accessible Memo Template") will increase the prominence of the accessibility status.
8. In the **Where** drop-down list, specify a folder in which to save your template.
   Note: By default, your template will be saved in the home folder in **Library/Application Support/iWork/Numbers/Templates/My Templates** pane of the **Template Chooser**. To save the template in a different location than the default, create a new folder in the **Templates** folder. The folder name is then used as a template category in the **Template Chooser**.

9. Click **Save**

## To select an accessible template

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New from Template Chooser...** (Shift+Apple+N)
2. In the **Template Chooser** dialog, select **My Templates** from the

left pane

3. Select your accessible template and click **Choose**

## Technique 2. Set Document Language

At this time, it is not possible to manually indicate the natural language for specific cells or blocks of cells in Numbers '09. As well, it is not possible to change the natural language of the document itself from the default language. **[Tested: September 29th, 2010]**

**Editor's note:** In later versions of Numbers, users can set the document language for a spreadsheet within a workbook. For detailed instructions, see how to format a spreadsheet for another language in Numbers on Mac.

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the

natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

At this time, Numbers '09 does not offer a mechanism which enables the user to add alternative text descriptions to images or objects. **[Tested: September 28, 2010]**

**Editor's note:** In later versions of Numbers, users can add alt text for images and graphical objects. To add alt text descriptions, follow these steps:

- Click the object to select it, click the Format button in the toolbar, then click image in the inspector.
- Click in the Description text box, then enter your description.

For detailed instructions, see how to add an image description on the Numbers User Guide for Mac.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

### 4.1 Named Styles

At this time (December 2019), Numbers does not offer named styles

that can be applied to format and distinguish specific cells from the rest of your data.

You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

*Note:* While office application suites support headings in much the same way, the named styles often differ.

Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

## 4.2 Table Styles

Table styles are useful for applying consistent formatting to tables. In Numbers, each template has one or more table style that formats various characteristics of your tables. A table style predefines the table background, the characteristics of cell borders, header rows and columns, footer rows, and the background and text attributes of cells. Table styles are useful for distinguishing different types of information in your spreadsheet.

*Note:* While the visual characteristics may not necessarily be helpful for accessibility, identifying the header rows and columns and pre-formatting text characteristics for these columns is helpful.

*To apply a table style*

1. In the left pane, go to the **Styles** section
2. Select the style of table from the list
   Note: You can modify any attribute of the table style and your modifications will remain even if you decide to change to a different table style.
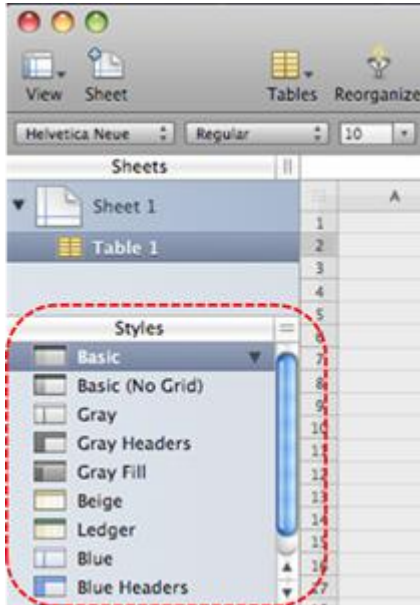


## 4.3 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

*To format cell characteristics*

1. Highlight the cells that you want to format
   Note: to format a row or column, select the row or column
   indicator and follow the next steps
2. In the **Toolbar**, select **Inspector**
3. In the **Inspector** dialog, select **Cells inspector**
4. Select the **Cell Format** drop-down list and choose the format
5. Customize the format options
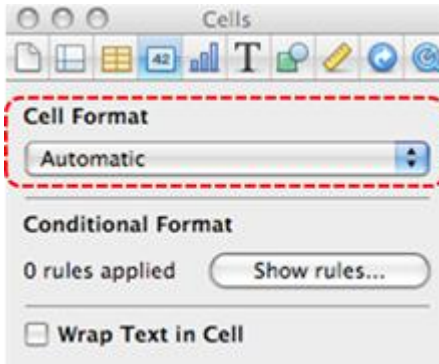


*Note*: When formatting your spreadsheet, it is best to avoid
merging cells. At times, it may seem easier to present your data
by merging cells, but this can make it more difficult for users
of assistive technologies and people navigating your
spreadsheet using the keyboard.

## Technique 5. Use Cell Addressing

## 5.1 Define Names

At this time (December 2019), Numbers does not provide a
mechanism for applying names to specific data ranges. Rather, it

advises authors that they can use existing header row and column names to address cells within a table. While this may be useful when defining formulas, it does not provide the necessary support for accessibility.

> **Editor's note:** To see header names more clearly, be sure to make the following change under preferences:
>
> 1.   Go to **Numbers** > **Preferences**.
> 2.   Under **Cell References**, ensure that the check box is checked off for the option "Use header names as labels."
>
> 

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. By associating a meaningful name to a data range, you

will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

# Technique 6. Create Accessible Charts

Spreadsheet applications support various types of charts, which can be used to display your spreadsheet data in meaningful ways for your audience. It is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help to correctly interpret the information.

*To create a chart*

1. In the **Toolbar**, select **Charts** or go to menu item: **Insert > Chart**
2. Select the chart type
3. In the **Toolbar**, select **Inspector**
4. In the **Inspector** dialog, select the **Chart inspector**
5. Format the chart type and chart colors by selecting **Choose a chart type** and **Chart Colors...** options
6. Select **Chart**
7. In the **Chart** section, select the **Show Title** and **Show Legend** check boxes
8. Select **Axis**
9. In the **Axis** section, select **Choose Axis Options** for both **Value**

**Axis (Y)** and **Category Axis (X)**

Note: It is a good idea to "show" as many title and labeling elements as possible (e.g. **Show Axis**, **Show Title**, **Show Categories**, **Show Series Names**, etc.)

## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 10)

## Technique 7. Provide Structure for Tables

*To add a table with headers*

1. Go to menu item: **Insert > Table**
2. Select table style
3. In the **Toolbar**, select **Inspector**
4. In the **Inspector** dialog, select the **Table inspector**
5. In the **Name** box, enter a name for the table
6. In the **Headers & Footer** section, select the number of header rows and columns using the drop-down menus (Note: It is recommended to keep your tables simple by using only one header row and column).

# Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:

## 8.1 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. In the **Toolbar**, select **Inspector**
2. In the **Inspector** dialog, select the **Document inspector** button
3. In the **Spotlight** section, type a descriptive name for the document in the **Title** box
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## 8.2 Avoid "Floating" Elements

Avoid "floating" elements (other than charts) such as floating images, objects, tables or text boxes.

Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
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**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

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The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white,

Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- [WebAIM: Contrast Checker](#)
- [Juicy Studio: Luminosity Color Contrast Ratio Analyzer](#)
- [Joe Dolson Color Contrast Spectrum Tester](#)
- [Joe Dolson Color Contrast Comparison](#)

# 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available.

However, multiple tools can be found online: Google
Search: gray-scale conversion tool.

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content
should not rely solely on sensory characteristics such as the color
or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text
  you have edited and noting the color. Instead use the
  applications revision tracking feature to track changes.

At this time (December 2019), Numbers does not offer a mechanism
to track changes in its documents.

- Do not distinguish between images by referring to their
  appearance (e.g., "the bigger one"). Instead, label each image
  with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g.,
to ensure a certain font or color combination), consider whether
you can achieve the same result by styling "real text". If this is not
possible, as with logos containing stylized text, make sure to provide
alternative text for the image following the steps noted in Technique
3.

# Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. If you are using this cell for a label or data, you can attach a comment note to the cell containing navigational instructions.

# Technique 11. Check Accessibility

At this time (December 2019), Numbers does not offer an accessibility checking mechanism to identify potential accessibility errors prior to publishing.

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

If you wish to check the accessibility of your document or template (see Technique 1), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## Alternate formats

1. Go to menu item: **Share > Export...**
2. In the dialog, select the type of file format you would like to export
3. Customize the export options for that file format
4. Click **Next**
5. In the **Save As** box, enter a file name for your document
6. In the **Where** drop-down menu, select the location you would like to save your document

7. Click **Export**

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 1.

### *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see Technique 11)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- iWork Numbers Support Page

- [Exporting a spreadsheet in Excel format](#)

# Accessibility Help

If you are interested in what features are provided to make using Numbers more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help**
2. Enter your search terms in the **Search** box

# References and Resources

1. [Numbers User Guide for Mac](#)
2. [Numbers Support](#)
3. [Apple: Create accessible spreadsheets with Numbers](#)
4. [GAWDS Writing Better Alt Text](#)

# Acknowledgments

This document was produced as part of the Accessible Digital Office Document (ADOD) Project.

This project has been developed by the Inclusive Design Research Centre, OCAD University as part of an EnAbling Change Partnership project with the Government of Ontario and UNESCO (United Nations Educational, Scientific and Cultural Organization).

# OpenOffice Calc

## Usage Notes

At the time of testing (December 2019), Calc provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, Calc does not include an accessibility checking feature, which is a more advanced accessibility feature.

## What's an "Office Document"?

You should use these techniques when you are using Calc to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are**

**specifically designed to provide guidance for highly dynamic and/ or interactive content.**

# File Formats

The default file format for Calc is **ODF Spreadsheet (ODS)**. In addition, Calc offers many other spreadsheet processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in <u>Technique 12</u>:

- MS Excel
- PDF
- HTML

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. The application-specific steps and screenshots in this document were created using Calc (ver. 3.2.1, Windows XP, Aug. 2010 and Apache OpenOffice 4.1.7) while creating an ODT document. Files are also easily saved as other file formats (see Technique 12).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11). Calc's default template for new documents is a blank spreadsheet, which is accessible by virtue of being blank. It is possible to create your own accessible templates from scratch in Calc. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

*To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see <u>Technique 11</u>)
4. Go to menu item: **File > Properties**
5. Use the **Title** and/or **Comments** to indicate the accessibility status of the template. Using **Title** (e.g., "Accessible Memo Template") will increase the prominence of the accessibility status because this is used in place of the template's file name. **Comments** can be used to add more information if necessary (e.g., "This memo template has been checked for accessibility.").
6. Close the dialog with **OK**



7. Go to menu item: **File > Templates > Save** (Shift+F11)
8. In the **New Template** box, type a name for the template. Again, using a descriptive template name (e.g. "Accessible Memo Template") will increase the prominence of the accessibility status of the template.
9. Select the category you would like to save it in, under

**Categories** *Note*: the category is simply the folder into which you are saving the template

10. Close the dialog with **OK**
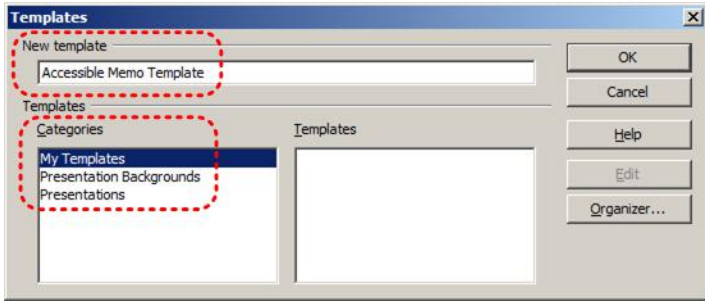


## *To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New > Templates and Documents**
2. Select the **Templates** icon
3. Select a template from the list *Note*: A properties pane appears on the right side of the window, where you can read the document properties (Title, By, Date, Modified by, Modified on, Description, Size). If you placed information about the accessibility of the template in the **Title** and/or **Comments** when you created the template (see above), this will be displayed in the **Title** and/or **Description**, respectively.
4. Select **Open**

5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

*To select a language for the whole document*

1. Go to menu item: **Tools > Options**
2. Select **Language Settings > Languages**

3. Under **Default languages** for documents, select the document language for all newly created documents *Note*: If you mark **For the current document only**, your choice will only apply to the current document.
4. Close the dialog with **OK**



## To format the language for a block of cells

1. Select the cells to which you want to apply a language
2. Go to menu item: **Format > Cells...** (Ctrl+1)
3. Select the **Font** tab
4. Select the **Language** and click **OK**

## To apply a language directly to selected text

1. Select the text to which you want to apply a language
2. Go to menu item: **Format > Character**
3. Select the **Font** tab
4. Select the **Language** and click **OK**

## Technique 3. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click on object
2. Select **Description...** option
3. Enter alternative text in the **Title** box

4.

*To add long descriptions to images and graphical objects*

1. Right-click on object
2. Select **Description...** option
3. Enter description in **Description** box



4.

## Technique 4. Format Your Cells

As you begin adding content, your spreadsheet will require

structuring to bring meaning to the data, make it easier to navigate, and help assistive technologies read it accurately. One of the easiest ways to do this is to ensure that you properly format the cells.

## 4.1 Named Styles

You should make use of the named styles that are included with the office application (e.g., "Heading", "Result", etc.) before creating your own styles or using the character formatting tools directly. Named styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names). For more information on formatting using named styles, see [Technique 9](#).

   *Note*: While office application suites support headings in much the same way, the named styles often differ. Formatting header and result cells brings order to the spreadsheet and makes it easier for users to navigate effectively. For example, you can format header rows and columns using "Heading" styles to apply bolded, enlarged, and italicized text (among other characteristics). You may also want to format cells containing results of calculations to appear bold and underlined to help distinguish them from the rest of your data.

### *To format a cell with default named styles*

1. Highlight the cells that you want to format *Note*: to apply a style to an entire row or column, select the row or column indicator and follow the next steps
2. Go to menu item: **Format > Styles and Formatting** (F11)
3. Double click on the desired formatting style *Note*: If a style is modified in the **Styles and Formatting** panel, the modification will apply to every application of that style
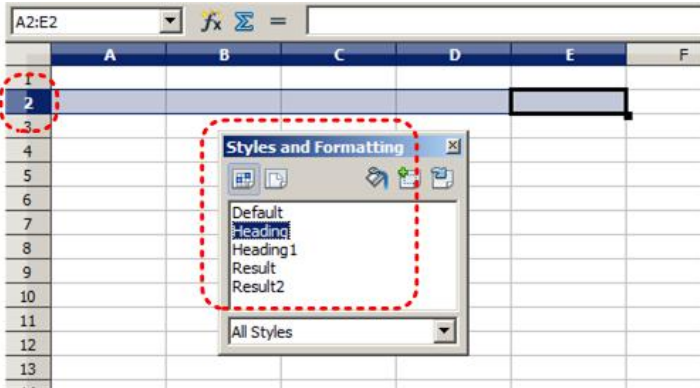
## 4.2 Other Cell Characteristics

Ensure your cells are formatted to properly represent your data, including number and text attributes.

*To format cell characteristics*

1. Highlight the cells that you want to format*Note*: to format a row or column, select the row or column indicator and follow the next steps
2. Go to menu item: **Format > Cell...** (Ctrl+1)
3. Select the relevant tabs (e.g. **Numbers**, **Font**, etc.) and make your adjustments
4. Click **OK**
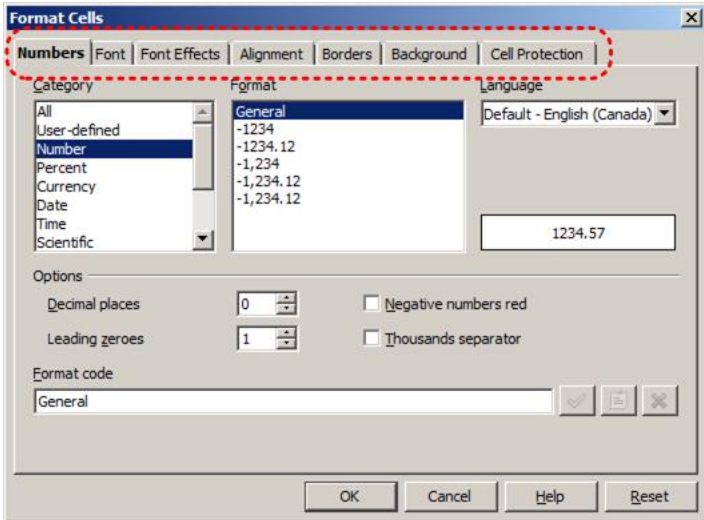
*Note*: When formatting your spreadsheet, it is best to avoid merging cells. At times, it may seem easier to present your data by merging cells, but this can make it more difficult for users of assistive technologies and people navigating your spreadsheet using the keyboard.

## Technique 5. Use Cell Addressing

### 5.1 Define Label Range

Label ranges help to logically define the contents of specific cells as either labels or data. This is useful for navigational purposes, allowing users to jump between ranges of data and navigate within each range. This is also useful for calculations, as you may reference an entire label range within an equation.

*To define a label range*

1. Select the header cells
2. Go to menu item: **Insert > Names > Labels...**
3. Select the **Minimize** button beside the **For data range** box
4. Highlight the data cells within the label range
5. Select the **Maximize** button to view the dialog
6. Click **OK**
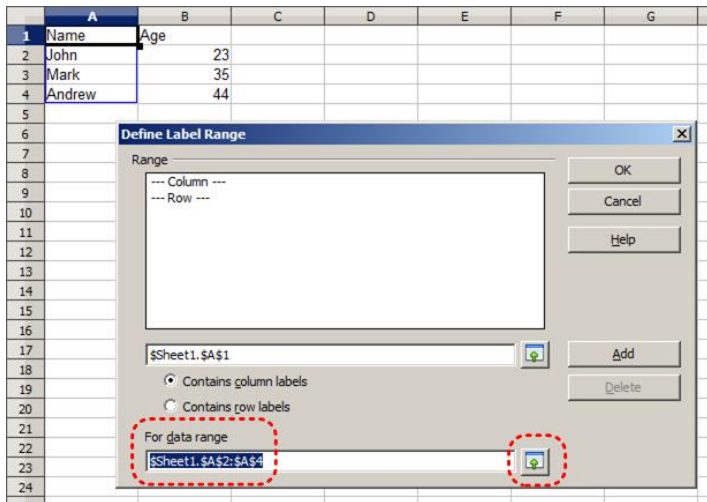


## 5.2 Define Names

Naming the different data ranges within your spreadsheet makes it easier to navigate through the document and find specific information. By associating a meaningful name to a data range, you will be enhancing the readability of your document. These named ranges can be referenced in multiple locations of your document and within calculations and equations.

*To define a name*

1. Go to menu item: **Insert > Names > Define...** (Ctrl+F3)
2. Enter the name in the **Name** text box
3. Select the **Minimize** button next to the **Assigned to** text box
4. Highlight the cells you would like to assign the name to
5. Select the **Maximize** button next to the text box to view the dialog
6. Click **OK**



# Technique 6. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps

should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

## To create a chart

1. Go to menu item: **Insert > Chart...**
2. In the **Chart Wizard** dialog, follow steps 1 to 4 to format your chart *Note*: When you are selecting your formatting options in each step, ensure that your selections align with the accessibility techniques in this document.
3. In **Step 4**, make sure to define all chart elements (e.g. title, subtitle, legend, etc.)

## To name a chart

1. Right-click* the chart
2. Select **Name...**
3. In the **Name** dialog, enter a unique chart name in the **Name** text box
4. Select **OK**

## To provide alternative text for the chart

1. Right-click* the chart
2. Select **Description...**
3. In the **Description** dialog, enter alternative text in the **Title** box
4. Enter a longer description of the chart contents in the **Description** box
5. Select **OK**

# Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9](#))

## Technique 7. Provide Structure for Tables

Calc has an "Insert table" feature.

### *To insert a new table*

1. Place the cursor where you would like the table to appear.
2. To insert a table, you have two options:

   - From the main menu, select **Table** > **Insert** > **Table** (*keyboard shortcut*: Ctrl+F12).
   - Alternately, from the toolbar, click on the **Table** icon (  )

3. In the **Insert Table** dialog box, specify the properties for the new table.

## Technique 8. Use Other Content Structuring Features

While cell formatting is the most common method of structuring documents, other content structuring features should be used where appropriate:

## 8.1 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File > Properties**
2. Select the **Description** tab

3. Type the new title in the **Title** box and click **OK**
   *Note*: The title defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## 8.2 Avoid "Floating" Elements

Avoid "floating" elements (other than charts) such as floating images, objects, tables or text boxes. Similarly, avoid placing drawing objects directly into the document (e.g., as borders, to create a diagram). Instead, create borders with page layout tools and insert complete graphical objects.

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

- Use font sizes between 12 and 18 points for cell contents.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## *To change the text size for a default named style*

1. Go to menu item: **Format > Styles and Formatting** (F11)
2. Select the style to modify from the list
3. Right click and select: **Modify...**
4. Select the **Font** tab
5. Select a font size under **Size**
6. Exit with **OK**

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ratio of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern. In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use OpenOffice Calc's review functionality features to track changes, such as revision history.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to

# Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Navigational Instructions

Provide a general description of the spreadsheet contents and instructions on how to navigate the data effectively. The best way to do this is to make a cell at the beginning of the data (e.g., A1) with this information. It will be the first cell accessed by assistive technologies. If you are using this cell for a label or data, you can attach a comment note to the cell containing navigational instructions.

## Technique 11. Check Accessibility

At this time, Calc does not offer a mechanism to check for potential

accessibility errors in your document prior to publishing. **[Tested: September 30th, 2010]**

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## To evaluate HTML accessibility

If you wish to check the accessibility of your document or template (see Technique 1), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

### To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

### To evaluate PDF accessibility in Adobe Acrobat Professional

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option

3. Select the **Start Checking** button

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

### PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11.

### HTML

1. Apply one of the default heading paragraph styles to the paragraphs where you want to generate an HTML page
2. Go to menu item: **File > Send > Create HTML Document**

3. In the **Styles** box, select the paragraph style that you want to use to generate a new HTML page
4. Enter a path and a name for the HTML document
5. Click **Save**
6. Check the HTML file for accessibility (see [Technique 11](#))

## *To clean up your HTML file*

1. Remove unnecessary styles, line breaks, etc.
2. Remove unnecessary id, class, and attributes
3. Remove font tags
4. Remove styles in the <head> tag
5. Ensure the <th> tags have a scope attribute
6. Remove <p> tags nested inside <th> and <td> tags
7. Check for accessibility (see [Technique 11](#)) *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

- [Read Text](#) – an extension that reads text from Calc
- [OOo2GD](#) – an extension that allows you to export, update and import all documents, spreadsheets and presentations between OpenOffice.org applications and Google docs.

# Accessibility Help

If you are interested in what features are provided to make using Calc accessible, documentation is provided in Calc's Help system:

1. Go to menu item: **Help > OpenOffice.org Help** (F1)
2. Enter "accessibility" as the **Search** Term

# References and Resources

1. OpenOffice.org 3.x Calc Guide (PDF)
2. OpenOffice.org Calc Help
3. OpenOffice.org Accessibility Help
4. GAWDS Writing Better Alt Text

# Acknowledgments

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This project has been developed by the Inclusive Design Research Centre, OCAD University as part of an EnAbling Change Partnership project with the Government of Ontario and UNESCO (United Nations Educational, Scientific and Cultural Organization).

**Source:** [Authoring Techniques for Accessible Office Documents: OpenOffice Calc (v3.2)](#) by the [Inclusive Design Research Centre (IDRC)](#) used under [CC-BY-SA 3.0](#).

# AUTHORING TECHNIQUES FOR ACCESSIBLE OFFICE DOCUMENTS: PRESENTATION APPLICATIONS

# Google Slides

## Usage Notes

At the time of testing (December 2019), <u>Google Slides</u> lacks several features that enable accessible office document authoring, most notably: a separate document title field and the ability to indicate headings for rows and columns. With this in mind, be cautious of templates available in the Google Slides template gallery and be sure that they comply the techniques discussed here.

While there is no accessibility checking feature built into Google Slides, you can install a third-party add-on called Grackle Slides. Grackle is a third-party plug-in that includes an accessibility checker along with other features that enhance accessibility on <u>Grackle Slides</u> (see <u>Technique 11</u>). Due to the nature of Google Slides, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like a HTML or PDF file.

## What's an "Office Document"?

You should use these techniques when you are using Google Slides to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),

- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

Google Slides does not have a default file format, as it is a web-based authoring tool.

Google Slides offers a number of presentation processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#).

- Microsoft PowerPoint (.pptx)
- ODP Document (.odp)
- PDF Document (.pdf)
- Plain Text (.txt)
- JPEG image (.jpg, current slide)
- PNG image (.png, current slide)
- Scalable Vector Graphics (.svg, current slide)

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. Files are easily saved as various file formats (see [Technique 12](#)).

> **Editor's note:** Since the content of this page has been heavily updated from the original article ([Authoring Techniques for Accessible Office Documents: Google docs: Presentations](#)), the usual editor's notes that flag new content will be omitted. The application-specific steps and screenshots were updated in December 2019.

# Technique 1. Use Accessible Templates

At this time (December 2019), Google Slides lacks support for accessibility features such as table headings.

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11).

Google Slides's default template for new documents is a blank presentation. The basic installation also includes a wide variety of templates for business presentations. These are all accessible by virtue of being blank.

It is possible to create your own templates from scratch in Google Slides. As well, you can edit and modify the existing templates, ensuring their accessibility as you do so and saving them as a new template.

## *To select a template*

1. Go to Google Sheets.
2. At the top right, click on **Template Gallery**.

3. Select a template.
4. A copy of the template will open.

## *To create an accessible template*

1. Create a new document (from the default template or from an existing template).
   *Note*: If creating a template from an existing document, go to **File** > **Make a copy**. Type a name and choose where to save it, then, click **Ok**.
2. Rename your document. Be sure to indicate that the document is an accessible template by using terms such as "accessible" (e.g., "Accessible Memo Template"). This will improve its searchability and promote its use as an accessible template.
3. Ensure that you follow techniques in this document. You may also check the accessibility (see Technique 11).

## *To share your accessible template as a new document*

You can share your accessible template, but it may be more useful to share the file as copy that other users can add to their Google Drive.

1. Go to the address bar change the end of the URL before sending it.
2. Replace "edit" at the end of the URL with "copy".
   *For example*:
   **Before:** http://docs.google.com/document/d/12345678/*edit*
   **After:** http://docs.google.com/document/d/12345678/*copy*
3. Send the modified copy link.
4. When the recipient follows the modified copy link, they're instructed to click on **Make a copy**.

5. They can then work on a copy of the accessible template.

For more information, see the resources below:

- [Google: Create document templates](#)
- [Google: Share "Make a copy" links to your files](#)

## Technique 2. Set Document Language

At this time, Google Slides does not offer an explicit language selection mechanism to indicate the natural language of your document or changes in natural language at any point within the content. Google Slides defaults the natural language to the language selected for your Google Account. When exporting to other document formats, there is no guarantee that the natural language of your Google Account will be indicated as the natural language of your document.

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## Technique 3. Use Built-In Layout and Styling Features

Google Slides does not offer "True Headings" or "Named Styles".

# 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout.

*Note:* The built-in layouts can be more accessible to users of assistive technologies because they technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order elements were placed.

## *To apply "true layout" to a slide*

1. Go to menu item: **Slide > New Slide...** (Ctrl+M).
2. In the **Layout** drop-down on the toolbar, select a slide layout from the options.

3. A new slide will be inserted into the presentation with the layout you selected

## 3.2 Customize Using Master Slides

Google Slides is packaged with master slides available for your use. If a layout must be customized, it is recommended that Master Slides be used.

Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting,

and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout.

If you edit any aspect of the slide layout in the master slide, the change will affect all slides that were created based on it. For this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that you create and use master slides that meet the accessibility requirements outlined in this document.

One way around this is to format a slide, ensuring its accessibility, and then create duplicates of that slide within your presentation. You can then edit the content of the duplicate slides, while ensuring that its layout meets accessibility requirements. In this way, the original slide acts as design template for the slides derived from it.

## To duplicate a slide

1. Go to menu item: **Slide > Duplicate slide**.
2. Edit the content of your duplicate slide, ensuring your changes do not negatively affect accessibility of the slide.

## To change a theme

1. Go to the menu item **Slide**, then select **Change theme.**
2. On the right sidebar, select the theme you want.

Note: If you would like to include a unique slide layout for a single slide, see Google: Learn how to apply a theme to only one slide.

## To customize a master slide

1. Go to the menu item **Slide** > **Edit master**.

*Optional:* Before editing the master, you can first select a theme that is similar to the design you want before editing the master (select **Theme**, then select a theme from the right).

2. In the master template editor, select the **Master** slide at the top.
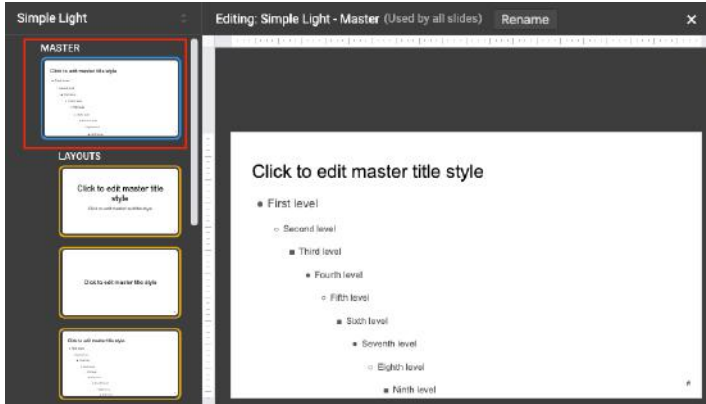


3. Make your edits to the master slide.
4. When finished, select the "x" at the top-righthand side of the menu to close.
5. Your presentation should be updated with the changes.

For more details on how to customize your presentation, see [Google: Change the theme, background, or layout in Google Slides](Google: Change the theme, background, or layout in Google Slides).

## Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating" objects (text boxes, images, etc.) that can cause accessibility issues in word processors.

However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two

dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top" when they are inserted, the default tab order is from the first object inserted to the last. However, this will change if you use features such as "bring to front" and "send to back".
- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.) for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.
- For more complex layouts, it may be easier to simply to create the slide as usual and then set the tab order (see below).

*To set the tab order*

1. Select the object.
2. Go to menu item **Arrange** > **Order** > **Bring to front**, **Bring forward**, **Send backward**, or **Send to back**.
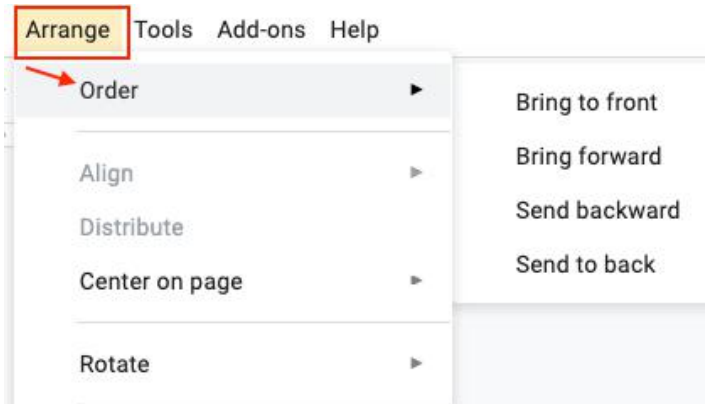


# Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents of your slides in text format. Slide notes can be created as you build your presentation.

*To add notes to your slides*

1. Go to menu item: **View > Show Speaker Notes**
   *Note*: Once you have selected this option, the **Speaker notes** pane will appear on the right side of the window for each slide. If you close the **Speaker notes** pane, you will have to perform

the above step to access it again.

2. In the **Speaker notes** pane on the right, enter notes to accompany each slide.

# Technique 6. Provide Text Alternatives for Images and Graphical Objects

Google Slides offers a mechanism for adding alternative text to images and objects where it can be readily accessed by screen reader users. While you can add alt text, you will need to ensure that you provide the longer descriptions in the body of the document, near the images and objects. While this solution is not optimal for screen reader users and will complicate your own accessibility testing, it is necessary until long descriptions are supported.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful

information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing

the image to a person over the phone

- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click\* on the image.
2. Select Alt Text from the contextual menu.

| ✂ Cut | ⌘X |
|---|---|
| ⧉ Copy | ⌘C |
| ☐ Paste | ⌘V |
| ⧉ Paste without formatting | ⌘+Shift+V |
| Delete | |
| **Alt text** | ⌘+Option+Y |
| Order | ▶ |
| Rotate | ▶ |
| Center on page | ▶ |
| ➕ Comment | ⌘+Option+M |
| ⊘ Animate | |
| Format options | |
| ⫟ Crop image | |
| Replace image | ▶ |
| ⛰ Reset image | |
| Add to theme | ▶ |

3. Add your alt text to the **Description** field.



4. Press **OK** to save*Note*: Enter a description in the **Title** field will show a pop-up tooltip when users hover over the image with their mouse.  However, it is recommended to put the image description in the **Description** field.

## Technique 7. Use Built-In Structuring Features

## 7.1 Tables

At this time (December 2019), Google Slides does not offer a mechanism that allows you to select and indicate headings for rows and columns. Since it is not possible to create complex tables in Google Slides that are accessible, avoid creating complex tables since table headers cannot be designated.

If you use the [Grackle Slides](#) add-on, tables can be given structure and table headings can be indicated. While these fixes won't be useful for making tables more accessible in Google Slides, it does

allow you to export the document into another format with appropriate table tags intact. For more on Grackle Slides, see [Technique 11](#).

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer

the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").

- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 4](#)).

## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Select the text box or highlight the text
2. Go to the menu bar
3. Click the **Numbered list** or **Bullet list** button
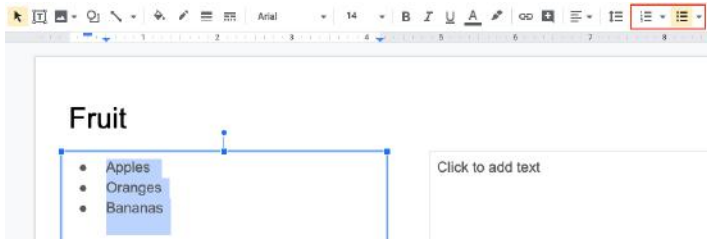
## 7.3 Columns

Use Columns feature for placing text in columns.
*Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Document Title

At this time (December 2019), Google Slides makes use of a single document name. Within Google Slides, this serves well as a title, but when exporting to ODT, the document name is used to form the file name, and the ODT "Title" properties field is left blank, or it lists the title used in the **first slide** of the presentation.

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the file name of the current document*

1. Go to menu item: **File > Rename**
2. In the **Rename Document** dialog, enter a new document name
3. Click **OK**

# Technique 8. Create Accessible Charts

In Google Slides, you can insert data charts linked to an existing Google Sheet file (see [Google Help: Link a chart or table to Google Slides](#) for instructions).

Charts can be used to display data in meaningful ways for your audience. It is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help to correctly interpret the information.

*To add a new chart to a presentation*

1. Go to **Insert** > **Chart**.
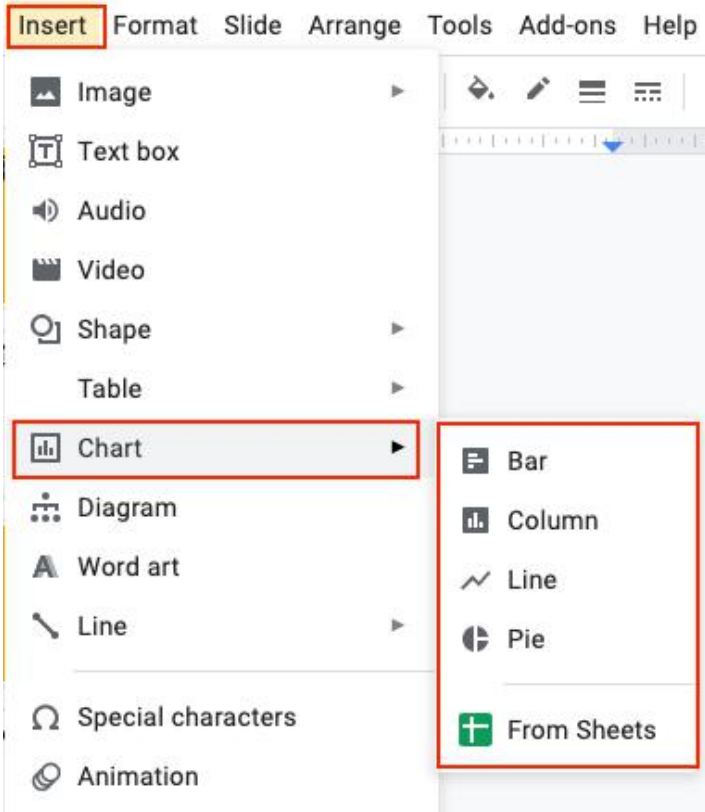
2. Select the type of chart you want to add.
   *Note*: To edit a chart, see Google Help: Edit or Update Chart Data.
   *Note*: To learn more about how to customize the chart you created, see BrightCarbon: Google Slides: The ULTIMATE guide (blog post).

## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users

who are color blind
- When creating bar charts, it is helpful to apply textures instead of colors to differentiate the bars
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9.2](#))

# Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing

font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ratio of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or

distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use Google Slides's change tracking features to track changes, such as revision history.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g.,

to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own.

### To add hyperlinks with meaningful text

1. Go to menu item: **Insert > Link.** Alternately, you can select the text you'd like to add a link to and press Ctrl+K (or Cmd+K on Macs).
2. In the pop-up box, enter descriptive text in the **Text** display box.
3. Enter the link address in the **Link**.
4. Select **Apply**.

Text

Link                                    Apply

## 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after

presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" (Source: W3C-WAI Draft)

## Enable live automatic captions when presenting

In Google Slides, you can present slides with automatic captions that displays the speaker's words in real time at the bottom of the screen.

*Note*: This feature is only available on Chrome devices in U.S. English. Also, captions are not stored.

### Step 1: Set up your microphone

1. Google Slides requires your computer's microphone or an external microphone paired with your computer to be turned on and working.
2. Devices and microphones vary, so be sure to check your computer's settings. Typically, these settings are found under System Preferences on a Mac or in the Control Panel on a PC.

### Step 2: Present with captions

1. Connect to the internet.
2. Open your presentation.
3. To start presenting, click **Present**.
4. To turn on captions, click **CC**.
   As you speak, the captions (without punctuation) appear at the bottom of the screen.
5. To turn off captions, click **CC** again.

For more details on enabling live automatic captions when presenting, see [Google: Present slides with captions](#).

# Technique 11. Check Accessibility

At this time (December 2019), Google Slides does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. However, a third-party add-on called Grackle Sheets can be used to check the accessibility of your workbook (see below).

In order to get some indication of the accessibility of your document or template (see [Technique 1](#)), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

If you wish to check the accessibility of your document or template (see [Technique 1](#)), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)

- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

### *To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Grackle Slides

*Warning*: Automated accessibility checkers cannot be trusted to check for all accessibility concerns, so be sure to review the recommended techniques in this document.

**What is Grackle Slides?** [Grackle Slides](#) is a third-party add-on that runs on spreadsheets created in Google Sheets. It helps with checking and improving the digital accessibility of your document. Due to the nature of Google Sheets, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like an HTML file.

**How does it work?** After Grackle is launched, It scans the current spreadsheet for accessibility issues and identifies and locates errors. Feedback appears in a sidebar that is docked on right-side

of the screen. By exploring the sidebar, you can immediately learn about accessibility issues and find and fix the detected errors by interacting with the Grackle sidebar. Due to the nature of Google Slides, some accessibility features, such as tables, are only fully accessible when exporting the document to another format, like a HTML or PDF file.

*Note:* Grackle's accessibility checker is free to use; however, the ability to export and produce accessible HTML spreadsheets, and so on, is only free for the first 30 days (as of December 2019).

At the time of testing, [creating tagged PDFs in Grackle Slides](#) is still in beta testing. While there are some export limitations, Grackle Slides performs accessibility checks that are valuable.

Grackle Slides performs the following 16 accessibility checks:

- Presentation
  - Presentation title is required
  - Document language should be specified
- Slides
  - A slide should have a title
  - Slide title should be unique
  - A slide should not be empty
- Tables
  - Tables should be tagged and described
  - The use of merged cells is not recommended
  - The use of empty cells is not recommended
- Elements
  - Images should have alternative text
  - Elements should have alternative text
  - Text boxes should not be empty
  - Lists should not be broken apart
- Content
  - Fine print should be avoided
  - High color contrast should be used
  - In-line style changes may lack clear meaning

- Empty trailing lines should be removed

## *How to install Grackle Slides*

Grackle Slides can be installed from the **Add-ons** menu of a Google Slides document.

1. Open a Google presentation document.
2. Select **Add-ons** > **Get Add-ons**.

   - Search for **"Grackle"** in the search field.
   - Select the add-on and click **Install**.

3. *Note*: A message will appear requesting access to data that the add-on needs to work. Review the message and click **Allow**.

## *How to launch and use Grackle Sheet*

Grackle Sheets is simple to launch and is accessed from the Add-ons menu.

1. Open a Google Slide document.
2. From the Add-ons menu, select Grackle Slides, then select Launch.
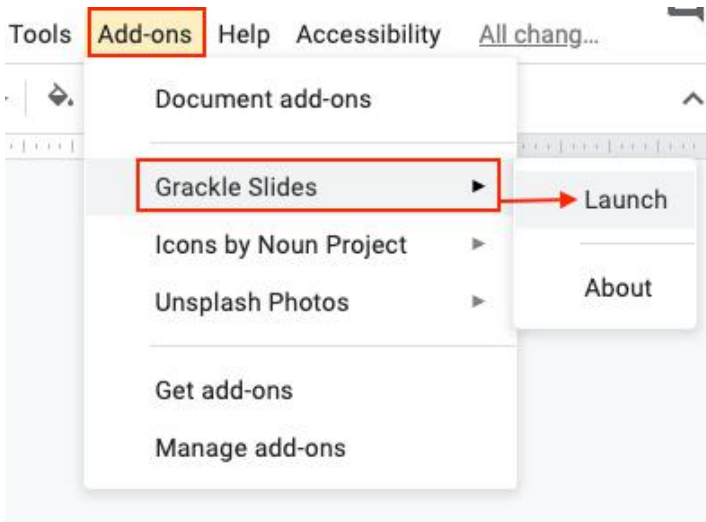
3.  A sidebar launches that identifies errors and warnings.

    ◦ Clicking on each error and warning will expand the
      selection and provide guidance on how to resolve each
      issue.
    ◦ Select the "Locate" button on any flagged item will take
      you to that line of the document to review.
    ◦ Continue to review and address each flagged item.

4.  Select the "Re-Check" button at the top of the sidebar to
    update the report.
5.  Continue to revise until all checks have passed.

## Troubleshooting Grackle Slides

When testing the Grackle Slides, we found that the plugin would
sometimes error out. Grackle Slides would indicate that the checks
are complete, but the remediation functionality in the Grackle
sidebar is not responsive.

Steps you can take when the Grackle Slide plugin does not function correctly:

1. Export as a Microsoft PowerPoint file
2. Open a new presentation file.
3. Go to File > Import slides
4. Run Grackle again

*Note*: After exporting to PowerPoint, you can run Microsoft's built-in accessibility checker.

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

### *To save in a different format*

1. Go to menu item: **File** > **Download as**
2. Select format

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see [Technique 11](#).

*To clean up your HTML file*

1. Remove unnecessary styles, line breaks, etc.
2. Remove unnecessary id, class, and attributes
3. Remove font tags
4. Remove styles in the <head> tag
5. Ensure the <th> tags have a scope attribute
6. Remove <p> tags nested inside <th> and <td> tags
7. Check for accessibility (see Technique 11)
   *Note*: you may wish to use HTML editors or utilities to help with this process.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

The following accessibility related plug-ins and support are available for Google Slides:

- Grackle Slides
- Keyboard shortcuts for Google Slides
- Google Slides Section 508 Compliance

## Accessibility Help

If you are interested in what features are provided to make using Google Slides more accessible to users, documentation is provided in online articles and Help forums:

1. Go to menu item: **Help > Google Docs Help Center**

## References and Resources

1. [Google Slides Help Center](#) (a list of help topics)
2. [Google Slides Learning Center](#) (list of tutorials and guides)
3. [Grackle Slides](#) (plugin that checks for accessibility)
4. [Google: Make your document or presentation more accessible](#)
5. [GAWDS Writing Better Alt Text](#)

## Acknowledgments

This document was produced as part of the [Accessible Digital Office Document (ADOD) Project](#).

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# Microsoft PowerPoint 2010, 2013, 2016, and 2019

## Usage Notes

At the time of testing (December 2019), PowerPoint provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. In addition, PowerPoint includes an accessibility checking feature.

## What's an "Office Document"?

You should use these techniques when you are using PowerPoint to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc., and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web](#)**

**Content Accessibility Guidelines (WCAG 2.0)** because these are specifically designed to provide guidance for highly dynamic and/or interactive content.

## File Formats

The default file format for PowerPoint is **Office Open XML (PPTX)**.

In addition, PowerPoint offers many other presentation processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in Technique 12 (below):

- MS PowerPoint (PPT)
- PDF
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

# Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. The application-specific steps and screenshots in this document were created using Microsoft PowerPoint 2010 (ver. 14.0.4760.1000, Windows XP, Sept. 2010) while creating a PPTX document. Files are also easily saved as other file formats (see Technique 12, below).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11, below).

PowerPoint's default template for new documents is a blank presentation. If you are connected to the internet, you can access a variety of blank business presentation templates through Office.com. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in PowerPoint. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## To create an accessible template

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see Technique 11, below)
4. Go to menu item: **File > Save As**
5. In the **Save as type** list, select **PowerPoint Template**
6. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Sales Template") will increase the prominence of the accessibility status. As well, filling in the text box labeled Tags with the term "accessibility" will improve its searchability as an accessible file.
7. Select **Save**



## To select an accessible template

Only use these steps if you have an accessible template available

(e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New**
2. Under **Available Templates**, select **My Templates**



3. In the **New** document dialog, select your accessible template from the list
4. Select **OK**



5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

# Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## *To change the default language*

1. Go to menu item: **File**
2. Select **Options** from the list in the left window pane
3. Select **Language** from the list in the left of the **Options** dialog
4. Under **Chose Editing Languages**, select the editing language you want to use
   *Note*: to add an editing language, select the language from the drop down list labeled **[Add additional editing languages]**
5. Select **Set as Default**
6. Close all Office programs and open them again for the changes to take effect

*To apply a language directly to selected text*

1. Select the text
2. Go to menu item: **Review**
3. In the **Language** section, select the **Language** button
4. Select **Set Proofing Language**
5. In the **Mark selected text as** box, select the language from the list
6. Select **OK**

## Technique 3. Use Built-In Layout and Styling Features

PowerPoint does not provide "True Headings" or "Named Styles" as does Word.

## 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout.

*Note:* The built-in layouts can be more accessible to users of assistive technologies because these technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order in which elements were placed.

*To apply "true layout" to a slide*

1. Go to menu item: **Home**
2. In the **Slides** section, select the **Layout** button
3. Select the layout you would like to use from the drop down
   menu



## 3.2 Customize Using Master Slides

If a layout must be customized, it is recommended that Master Slides be used.

Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting, and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout.

If you edit any aspect of the slide layout in the master slide, the change will affect all slides that were created based on it. For

this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that you create and use master slides that meet the accessibility requirements outlined in this document.

*To create or customize a master slide*

1. Go to menu item: **View**
2. In the **Master Views** section, select the **Slide Master** icon
3. The current slide master with its associate layouts appears
   *Note*: If you have the **Normal** view open, the slide master is the larger slide image in the slide thumbnail pane. The associated layouts are positioned beneath the slide master.
4. Customize the existing master slide and its associated layouts to suit your needs (e.g., apply a design, theme-based colours, fonts, effects, backgrounds) ensuring that your changes meet accessibility requirements
5. Go to menu item: **File > Save As**
6. In the **File** name box, type a file name
7. In the **Save as type** list, select **PowerPoint template**
8. Select **Save**
9. On the **Slide Master** tab, in the **Close** section, select **Close Master View**

## Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating" objects (text boxes, images, etc.) that can cause accessibility issues in word processors.

However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top" when they are inserted, the default tab order is from the first object inserted to the last. However, this will change if you use features such as "bring to front" and "send to back".
- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.) for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.
- For more complex layouts, it may be easier to simply create the slide as usual and then set the tab order (see below).

*To set the tab order using the 'Selection Pane'*

1. Go to menu item: **Home**
2. In the **Drawing** section, select **Arrange > Selection Pane...**

3. In the **Selection and Visibility** pane, all the elements on the slide are listed in reverse chronological order under **Shapes on this Slide**
4. Elements can be re-ordered using the Re-order buttons located at the bottom of the Selection and Visibility pane
   *Note*: The tab order of elements begins at the bottom of the list and tabs upwards.

## Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents of your slides in text format. Slide notes can be created as you build your presentation.

### *To add notes to your slides*

1. Go to menu item: **View**
2. In the **Presentation Views** section, select **Normal** to ensure that the notes panel is in view
   *Note*: You can then select menu item **Home**, to access text formatting options
3. The **Notes Pane** can be found at the bottom of the window, below the slide
4. Type and format your notes within the **Notes Pane** below each slide

## Technique 6. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text ("Title" in PowerPoint)*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the title text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions ("Description" in PowerPoint)*

- Long descriptions should be used when text

alternatives (see above) are insufficient to answer the question "what information is the image conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## *To add alternative text to images and graphical objects*

1. Right-click* the object
2. Select **Format Picture...**
3. Select the **Alt Text** option from the list
4. Fill in the **Title**. If more description is required (e.g., for a chart or graph), provide a short description in the **Title** (e.g., a summary of the trend) and more detail in the **Description**. *Note*: If the document is ever saved to HTML, the **Title** and **Description** fields are combined into a single HTML <alt> tag.

Format Picture

Fill
Line Color
Line Style
Shadow
Reflection
Glow and Soft Edges
3-D Format
3-D Rotation
Picture Corrections
Picture Color
Artistic Effects
Crop
Size
Position
Text Box
Alt Text

Alt Text

Title:
Two men shaking hands

Description:

Titles and descriptions provide alternative, text-based representations of the information contained in tables, diagrams, images, and other objects. This information is useful for people with vision or cognitive impairments who may not be able to see or understand the object.

A title can be read to a person with a disability and is used to determine whether they wish to hear the description of the content.

Close

**Editor's note:** For more details about adding alternative text to your PowerPoint slides, including how to toggle automatic alt text, see how to add alt text.

## Technique 7. Use Built-In Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and

appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables are split across pages, set the header to show at the top of each page. Also, set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers

when they serve as labels to help interpret the other cells in the table.

- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 4](#)).

## *To add a table with headings*

1. Go to menu item: **Insert**
2. In the **Tables** section, select the **Tables** icon
3. Select the number of rows and columns you would like your table to have
4. Select the table and a **Table Tools** menu item should appear
5. Go to menu item: **Table Tools > Design**
6. In the **Table Style Options** section, select the **Header Row** check box
   *Note*: Whenever possible, keep tables simple with just 1 row of headings.

## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the **Bullets** icon for unordered lists or select the **Numbering** icon for ordered lists
3. To select a different list format, select the arrow beside the icon
4. Select a format from the format **Library** that appears in the drop-down menu

*To modify list styles*

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the arrow beside the **Bullets** icon for unordered lists or select the arrow beside the **Numbering** icon for ordered lists
3. Select **Define New Bullet...** to create a new unordered list format
4. Select **Define New Number Format...** to create a new ordered list format
5. In the **New Bullet** dialog or the **New Number Format** dialog, select the list characteristics
6. Select **OK**

## 7.3 Columns

Use Columns feature for placing text in columns.
*Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

### To change the title of the current document

1. Go to menu item: **File**
2. Select **Info** from the list in the left window pane
3. In the right window pane, select the **Title** text box
4. Enter the **Title**
   Note: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## 7.5 Slide Titles

Unique slide titles aid navigation for non-visual users.

### To add a visible title to a slide

1. Go to menu item: **Home.**
2. Select **Reset** in the **Slides** section.
3. Enter a title at the top of the slide.
   Note:Slide titles should be unique for clarity and ease of navigation.

## *To add an invisible title to a slide*

1. Enter your title at the top of the slide.
2. Go to menu item: **Home.**
3. From the Drawing menu, select **Arrange > Selection Pane**. This will open the **Selection and Visibility** pane.
4. In the **Selection and Visibility** pane, click on the eyeball icon next to the slide title to change visibility settings.

# Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and colour, rather than colour alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriately labeled to give users reference points that will help them to correctly interpret the information.

## *To create a chart*

1. Select a **Slide Layout** that contains a placeholder for a chart (see Technique 3.1, above)
2. Select the **Insert Chart** icon from the center of the placeholder
3. Select a **Chart Type** from the **Insert Chart** dialog
4. Select **OK**
   *Note*: This will open the Excel document titled "Chart in Microsoft Office PowerPoint", where you can input the data

you would like to include in the chart. When you have done this, simply close the Excel window and the data will appear on the chart in the PowerPoint presentation.

## *To add titles and labels*

1. In the **Chart Tools** menu section, go to menu item: **Layout**
2. In the **Labels** section, select the type of title or label you would like to define (e.g., **Chart Title, Axis Titles, Data Labels**)

## *To apply a predefined Chart Layout*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Chart Layouts** section, select a **Quick Layout** from the scrolling **Chart Layouts** gallery

## *To change to a different predefined Chart Type*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Type** section, select the **Change Chart Type** icon
3. In the **Change Chart Type** dialog, select a chart type from the left pane
4. Select a **Chart Design** from the right pane
5. Select **OK**

# Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users

who are colour blind
- When creating bar charts, go to menu item: **Chart Tools > Format** and in the **Shape Styles** section select **Shape Fill** to apply a texture to help distinguish the bars
- Change the default colours to a colour safe or gray-scale palette
- Use the formatting options to change predefined colours, ensuring that they align with sufficient contrast requirements (see , below)

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify

documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change document details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ratio of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid colour for a text background rather than a pattern.
In order to determine whether the colours in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Colour Alone

Colour should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where colour might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

• GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

> **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the colour or shape of content elements. Here are two examples:

• Do not track changes by simply changing the colour of text you have edited and noting the colour. Instead use PowerPoint's "Track Changes" feature to track changes.
• Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or colour combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colours, fonts and images.

- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

*To change link text*

1. Highlight the link and right-click*
2. Select **Edit Hyperlink** (Ctrl + K)
3. Change the text in the **Text to display** box to something descriptive

## 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after

presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" (Source: W3C-WAI Draft)

## Technique 11. Check Accessibility

If you wish to check the accessibility of your document or template (see Technique 1, above), PowerPoint offers an "Accessibility Checker" to review your document against a set of possible issues that users with disabilities may experience in your file.

## The "Accessibility Checker" classifies issues as:

- **Error** – content that makes a file very difficult or impossible for people with disabilities to understand
- **Warning** – content that in most, but not all, cases makes a file difficult for people with disabilities to understand
- **Tip** – content that people with disabilities can understand, but that might be better organized or presented in a way that would maximize their experience

To learn more about the Accessibility Checker and the rules it uses to identify and classify accessibility issues in your document, visit the PowerPoint help section (see Accessibility Help, below). Use the search term "accessibility checker rules" in the help search box.

*To use the "Accessibility Checker"*

1.  Go to menu item: **File**
2.  Select **Info** in the left window pane
3.  Under **Prepare for Sharing**, an alert will appear if a potential accessibility issue has been detected
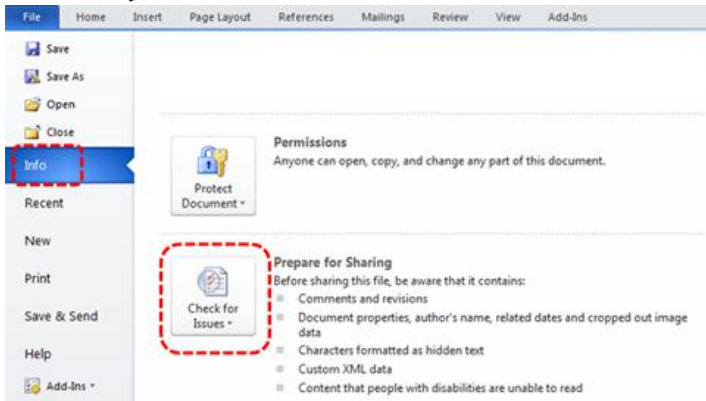


4.  To view and repair the issues, select **Check for Issues** and then **Check Accessibility**



5.  An **Accessibility Checker** task pane will open, showing the inspection results

6. Select a specific issue to see **Additional Information**
7. Follow the steps provided to fix or revise the content

In order to get further indication of the accessibility of your document or template (see [Technique 1](#)), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## To evaluate HTML accessibility

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- [AChecker](#)
- [WebAIM Wave Web Accessibility Evaluation Tool](#)

## To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- [Adobe Acrobat Professional](#)
- [CommonLook PDF Evaluator](#)
- [PDF Accessibility Checker (PAC)](#) – a free alternative provided by "Access for all"

## To evaluate PDF accessibility in Adobe Acrobat Professional

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking options
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11 (above).

1. Go to menu item: **File**
2. Select **Save As**
3. In the **File name** box, type a name for the file
4. In the **Save as type** list, select **PDF or XPS Document**
5. Select the **Options** button
6. Under **Include non-printing information** in the **Options** dialog, ensure that the **Document structure tags for accessibility** check box is selected
7. Select **OK** and **Save**

## HTML

1. Go to menu item: **File**
2. Select **Save As**
3. In the **File name** box, type a name for the file
4. In the **Save as type** box, select **Web Page**
5. Select **Save**
6. Check the HTML file for accessibility (see <u>Technique 11</u>, above)

*To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes

- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see Technique 11, above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

## Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

The following accessibility related plug-ins and support are available for PowerPoint 2007:

- PPT2HTML – offers an accessibility tool bar for adding alt-text to charts.
- PowerTalk – an accessibility tool that provides a good approximation of how presentations will sound with a screen reader. [**Editor's note:** Tool no longer available.]
- HiSoftware – desktop add-ins that will create a Section 508 or WAI Fully Compliant Web pages from PowerPoint presentations (some knowledge of HTML code is required).
- Keyboard shortcuts in PowerPoint
- Accessibility Tutorials for Office

## Accessibility Help

If you are interested in what features are provided to make using

PowerPoint more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **File**
2. Select **Help** from the list on the left
3. Under the **Support** section, select the **Help** icon
4. Enter "Accessibility" as your search term in the **Help** dialog box

## References and Resources

1. [Microsoft PowerPoint Help](#)
2. [GAWDS Writing Better Alt Text](#)
3. [Microsoft PowerPoint Online Accessibility Center](#)
4. [Ryerson University: Microsoft PowerPoint Accessibility Tipsheet (PDF)](#)
5. [Microsoft PowerPoint: Video Tutorials](#)

## Acknowledgments

# Microsoft PowerPoint for Mac 2008, 2011, 2016, and 2019

## Usage Notes

## Overview

At the time of testing (January 17, 2011), as long as images are avoided, PowerPoint for Mac provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, PowerPoint 2008 for Mac does not include an accessibility checking feature.

**Editor's note:** Later versions of PowerPoint for Mac include an accessibility checking feature. For more information, please see the following:

- [Make your PowerPoint presentations accessible to people with disabilities](#)
- [What's new in accessibility for PowerPoint for Mac and iOS](#)

# What's an "Office Document"?

You should use these techniques when you are using PowerPoint for Mac to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

# File Formats

The default file format for PowerPoint for Mac is **Office Open XML (PPTX)**.

In addition, PowerPoint for Mac offers many other presentation processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#) (below):

- PPT (MS PowerPoint 97–2004)
- POTX (PowerPoint Template)
- PDF
- ODP (OpenDocument Presentation)
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

**\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using Microsoft PowerPoint 2008 for Mac (ver. 12.0 (071130), Mac OS X, Jan. 2011) and Microsoft PowerPoint for Mac (version 16.16.17) while creating a PPTX document. Files are also easily saved as other file formats (see Technique 12, below).

This document is provided for information purposes only and is

neither a recommendation nor a guarantee of results. If errors are found, please report them to: adod-comments@idrc.ocad.ca.

# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11, below).

PowerPoint for Mac's default template for new documents is a blank presentation. If you are connected to the internet, you can access a variety of blank business presentation templates through Office.com. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from scratch in PowerPoint for Mac. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

*To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see Technique 11, below)
4. Go to menu item: **File > Save As**
5. In the **Save As** box, type a name for the template. Using a

descriptive **File name** (e.g., "Accessible Sales Template") will increase the prominence of the accessibility status.

6. In the **Format** list, select **PowerPoint 97–2004 (.pot)**
7. Select **Save**
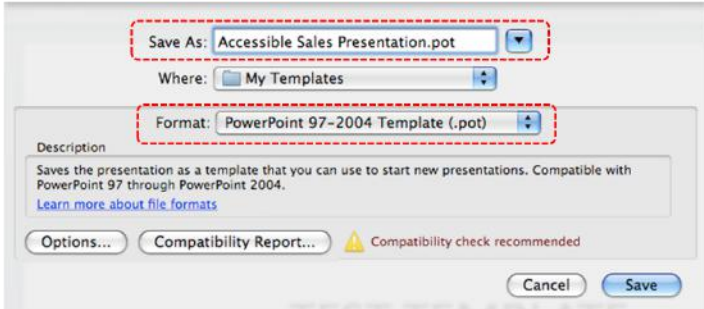


## *To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > Project Gallery...**
2. Under **Category**, select **My Templates** (or select where you saved the template)
3. Select your accessible template from the template gallery
4. Select **Open**

5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

### *To change the default language*

1. Go to menu item: **Tools > Language**
2. In the **Mark select text as** box, select the language from the

list

3. Select **Default…**
4. Select **OK**



*To apply a language directly to selected text*

1. Select the text
2. Go to menu item: **Tools > Language…**
3. In the **Mark selected text as** box, select the language from the list
4. Select **OK**

## Technique 3. Use Built-In Layout and Styling Features

PowerPoint does not provide "True Headings" or "Named Styles" as does Word.

## 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout.

*Note*: The built-in layouts can be more accessible to users of assistive technologies because these technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order elements were placed.

*To apply "true layout" to a slide*

1. Go to menu item: **Format > Slide Layout**
2. In the **Slide Layout** section that opens, select the layout you would like to use



## 3.2 Customize Using Master Slides

If a layout must be customized, it is recommended that Master Slides be used.

Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting, and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout.

If you edit any aspect of the slide layout in the master slide, the change will affect all slides that were created based on it. For this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that

you create and use master slides that meet the accessibility requirements outlined in this document.

## *To create or customize a master slide*

1. Go to menu item: **View > Master > Slide Master**
2. The current slide master with its associate layouts appears
   *Note*: If you have the **Normal** view open, the slide master is the larger slide image in the slide thumbnail pane. The associated layouts are positioned beneath the slide master.
3. Customize the existing master slide and its associated layouts to suit your needs (e.g., apply a design, theme-based colors, fonts, effects, backgrounds) ensuring that your changes meet accessibility requirements
4. To create a new master slide, select the **Insert New Master** icon
5. On the **Slide Master** toolbar, select **Close Master**

# Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating" objects (text boxes, images, etc.) that can cause accessibility issues in word processors.

However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top" when they are inserted, the default tab order is from the first object inserted to the last. However, this will change if you use features such as "bring to front" and "send to back".
- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.)

for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.
- For more complex layouts, it may be easier to simply to create the slide as usual and then set the tab order (see below).

## To set the tab order

1. Right-click* the image or object
2. Select **Order** > **Bring to Front**, **Send to back**, **Bring Forward** or **Send Backward**

## Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents of your slides in text format. Slide notes can be created as you build your presentation.

# To add notes to your slides

1. To ensure the notes panel is in view, go to menu item: **View > Normal**
2. The **Notes Pane** can be found at the bottom of the window, below the slide
3. Type and format your notes within the **Notes Pane** below each slide



## Technique 6. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely

describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text

alternatives (see above) are insufficient to answer the question "what information is the image conveying?"

- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Select the object, then choose one of the options below:

   ◦ Right-click the object and select **Edit Alt Text...**. The **Alt Text** pane opens.

- ■ *Note*: If the **Edit Alt Text...** option is not visible, select **Format Object/Picture**.
  - ◦ Alternately, select an object. In the menu, select the object's **Format** tab. Then, select **Alt Text**.

2. In the **Alt Text** pane, add the alternative text to the **Description** field.

## Technique 7. Use Built-In Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g.,

screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible. Whenever possible, use just one row of headings.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the

other cells in the table.

- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page (see Technique 4).

*To insert a table with header rows:*

1. Go to menu item: **Insert > Table...**
2. Select the number of columns and rows
3. Select **OK**
4. In the **Table Styles** section that opens above the document pane, select the **Options** drop-down menu
5. Select **Header Row**
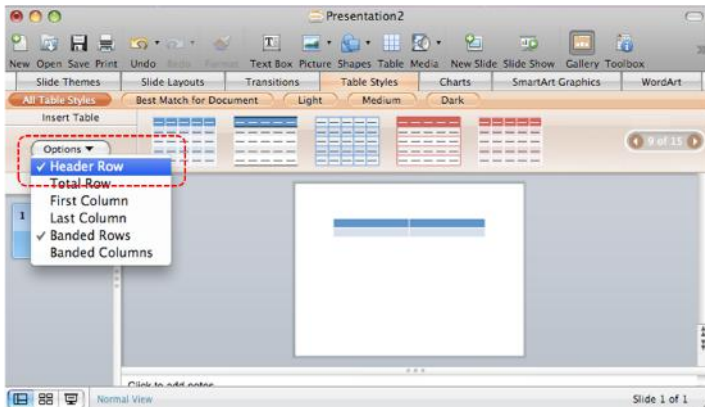
## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Select the text
2. If the **Formatting Palette** is not in view, go to menu item: **View > Toolbox, Formatting Palette**
3. In the **Formatting Palette**, select **Bullets and Numbering** if it is not already open
4. In the **Bullets and Numbering** section, select **Type, Bullets** for bulleted lists or **Type, Numbering** for numbered lists
5. To change the style, select a list style from the **Style** drop-down list

At this time, it is not possible to modify pre-formatted list styles or to create your own list styles. **[Tested: January 26, 2011]**

## 7.3 Columns

Use Columns feature for placing text in columns. However, because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File > Properties**
2. Enter the **Title** in the **Title** text box
3. Select **OK**
   *Note*: The title defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

*To create a chart*

1. Select a **Slide Layout** that contains a placeholder for a chart (see <u>Technique 3.1</u>, above)
2. Select the **Insert Chart** icon from the center of the placeholder
3. Select a **Chart Type** from the **Charts** section above the document pane
   *Note*: This will open the Excel document titled "Chart in Microsoft Office PowerPoint", where you can input the data you would like to include in the chart. When you have done this, simply close the Excel window and the data will appear on the chart in the PowerPoint presentation.
   *Note*: This applies a predefined Chart Layout, which can be changed at any time simply by selecting the chart and following **Steps 2 and 3** above.

*To add titles and labels*

1. Select the chart
2. If the **Formatting Palette** is not open, go to menu item: **View > Toolbox, Formatting Palette**
3. Select **Chart Options** to open the **Chart Options** section, if it is not already open
4. Under **Titles**, select the title from the **Chart Title** drop-down list or enter a title in the text box below the drop-down list
5. Under **Other options**, select the **Labels** and **Legends** you would like to include from their respective drop-down lists
6. Under **Chart Data**, select **Data Table with Legend Keys** from the **Data Table** drop-down list to include a data table to help further support the chart

# Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- When creating bar charts, go to menu item: **Chart Tools > Format** and in the **Shape Styles** section select **Shape Fill** to apply a texture to help distinguish the bars
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2, below)

## Technique 9. Make Content Easier to See

### 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.

- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.


## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.
In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- [WebAIM: Contrast Checker](#)
- [Juicy Studio: Luminosity Color Contrast Ratio Analyzer](#)
- [Joe Dolson Color Contrast Spectrum Tester](#)
- [Joe Dolson Color Contrast Comparison](#)

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

   **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use PowerPoint for Mac's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.

- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

## To change link text

1. Type (or paste in) a web address and press spacebar or "Enter" to convert into a hyperlink
2. Highlight the link
3. Go to menu item: **Insert > Hyperlink...**
4. Edit the text in the **Display** box
5. Select **OK**

## 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" (Source: W3C-WAI Draft)

## Technique 11. Check Accessibility
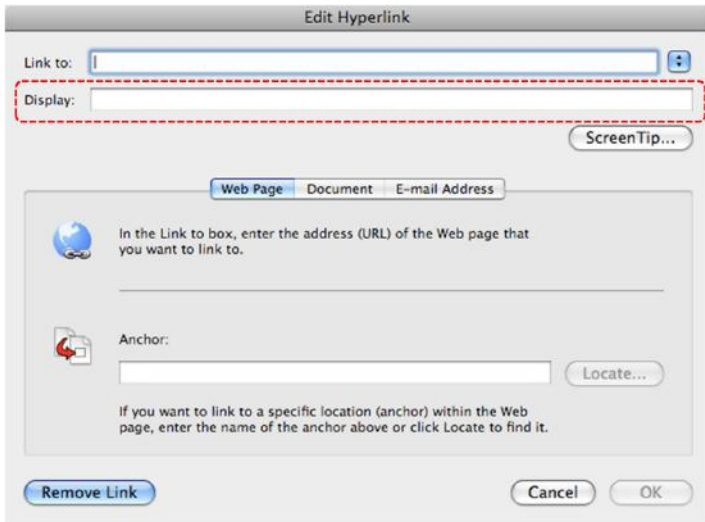
At this time, PowerPoint 2008 for Mac does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: January 17, 2011]**

In order to get some indication of your document or template (see Technique 1), then you may consider saving the file into HTML in

order to perform an accessibility check in one of those formats, as described below.

Editor's note: In later versions of PowerPoint for Mac, users can check the accessibility of their presentations. For more information, see how to use the accessibility checker in PowerPoint.

## To evaluate HTML accessibility

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## To evaluate PDF accessibility

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

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*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking option.
3. Select the **Start Checking** button.

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

*Note:* Before saving in other formats, you may want to run the **Compatibility Report** feature by selecting **Compatibility Report…** from the **Save As** dialog. This checks the compatibility of your existing document with the format you have selected save your document as. The results of this check are revealed in the **Compatibility Report** dialog, where you have explanations of errors and options to fix them. To run this check at any time, go to menu item: **View > Toolbox, Compatibility Report**.

## PPT

1. Go to menu item: **File > Save As...**
2. In the **Save As** box, type a name for the file
3. In the **Format** box, select **PowerPoint 97-2004 Presentation (.ppt)**
4. Select **Save**

## HTML

1. Go to menu item: **File > Save as Web Page...**
2. In the **Save As** box, type a name for the file
3. Select **Save**
4. Check the HTML file for accessibility (see [Technique 11](#), above)

### *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 11](#), above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results by the IDRC.

The following accessibility related plug-ins and support are available for PowerPoint for Mac:

- [PPT2HTML](#) – offers an accessibility tool bar for adding alt-text to charts.
- PowerTalk – an accessibility tool that provides a good approximation of how presentations will sound with a screen reader. [**Editor's note**: Tool no longer available.]

## Accessibility Help

If you are interested in what features are provided to make using PowerPoint for Mac more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help**
2. Enter "Accessibility" as your search term in the **Search** box

## References and Resources

1. [Microsoft PowerPoint for Mac Help](#)
2. [GAWDS Writing Better Alt Text](#)
3. [Ryerson University: Microsoft PowerPoint Accessibility](#)

Tipsheet (PDF)
4. Microsoft PowerPoint: Video Tutorials

# Acknowledgments

This document was produced as part of the Accessible Digital Office Document (ADOD) Project.

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# Microsoft PowerPoint 2007

## Usage Notes

At the time of testing (January 10, 2011), PowerPoint 2007 provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, PowerPoint 2007 does not include an accessibility checking feature.

## What's an "Office Document"?

You should use these techniques when you are using PowerPoint 2007 to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are**

**specifically designed to provide guidance for highly dynamic and/
or interactive content.**

# File Formats

The default file format for PowerPoint 2007 is **Office Open XML
(PPTX)**.

   In addition, PowerPoint 2007 offers many other presentation
processor and web format saving options. Most of these have not
been checked for accessibility, but some information and/or
instructions are available for the following formats in Technique 12
(below):

- MS PowerPoint (PPT)
- PDF
- HTML

# Document Conventions

We have tried to formulate these techniques so that they are useful
to all authors, regardless of whether they use a mouse. However,
for clarity there are several instances where mouse-only language
is used. Below are the mouse-only terms and their keyboard
alternatives:

- **\*Right-click:** To right-click with the keyboard, select the
  object using the Shift+Arrow keys and then press either (1) the
  "Right-Click" key (some keyboard have this to the right of the
  spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using Microsoft PowerPoint 2007 (ver. 12.0.6535.5002, Windows 7, Jan. 2011) while creating a PPTX document. Files are also easily saved as other file formats (see Technique 12, below).

This document is provided for information purposes only and is neither a recommendation nor a guarantee of results. If errors are found, please report them to: adod-comments@idrc.ocad.ca.

# Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11, below).

PowerPoint 2007's default template for new documents is a blank presentation. If you are connected to the internet, you can access a variety of blank business presentation templates through Office.com. These are all accessible by virtue of being blank.

It is possible to create your own accessible templates from

scratch in PowerPoint 2007. As well, you can edit and modify the existing prepackaged templates, ensuring their accessibility as you do so and saving them as a new template.

## *To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see [Technique 11](#), below)
4. Go to menu item: **Office > Save As > Other Formats**
5. In the **Save as type** list, select **PowerPoint Template**
6. In the **File name** box, type a name for the template. Using a descriptive **File name** (e.g., "Accessible Sales Template") will increase the prominence of the accessibility status. As well, filling in the text box labeled Tags with the term "accessibility" will improve its searchability as an accessible file.
7. Select **Save**

## *To select an accessible template*

Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **Office > New**
2. Under **Templates**, select **My templates...**

3. In the **New Presentation** dialog, select your accessible template from the list

4. Select **OK**



5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content (e.g., text, images, etc.), ensure that you consult the sections that follow to preserve accessibility.**

# Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

## *To change the default language*

1. In the operating system, activate the keyboard layout for the language in which you want to create and edit text
2. Right-click* the status bar at the bottom of the window, ensure that **Language** is selected, this displays a reminder of the active keyboard layout in the status bar

*To apply a language directly to selected text*

1. Select the text
2. Go to menu item: **Review**
3. In the **Proofing** section, select the **Language** button
4. In the **Mark selected text as** box, select the language from the list
5. Select **OK**

## Technique 3. Use Built-In Layout and Styling Features

PowerPoint 2007 does not provide "True Headings" or "Named Styles" as does Word 2007.

## 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout.

*Note*: The built-in layouts can be more accessible to users of assistive technologies because technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order elements were placed.

*To apply "true layout" to a slide*

1. Go to menu item: **Home**
2. In the **Slides** section, select the **Layout** button
3. Select the layout you would like to use from the drop down menu



## 3.2 Customize Using Master Slides

If a layout must be customized, it is recommended that Master Slides be used.

Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting, and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout.

If you edit any aspect of the slide layout in the master slide,

the change will affect all slides that were created based on it. For this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that you create and use master slides that meet the accessibility requirements outlined in this document.

*To create or customize a master slide*

1. Go to menu item: **View**
2. In the **Presentation Views** section, select the **Slide Master** icon
3. The current slide master with its associate layouts appears
   *Note*: If you have the **Normal** view open, the slide master is the larger slide image in the slide thumbnail pane. The associated layouts are positioned beneath the slide master.
4. Customize the existing master slide and its associated layouts to suit your needs (e.g., apply a design, theme-based colors, fonts, effects, backgrounds) ensuring that your changes meet accessibility requirements
5. Go to menu item: **Office > Save As > Other Formats**
6. In the **Filename** box, type a file name
7. In the **Save as type** list, select **PowerPoint template**
8. Select **Save**
9. On the **Slide Master** tab, in the **Close** section, select **Close Master View**

# Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating"

objects (text boxes, images, etc.) that can cause accessibility issues in word processors.

However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top" when they are inserted, the default tab order is from the first object inserted to the last. However, this will change if you use features such as "bring to front" and "send to back".
- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.) for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.

> • For more complex layouts, it may be easier to simply to create the slide as usual and then set the tab order (see below).

## *To set the tab order using the 'Selection Pane'*

1. Go to menu item: **Home**
2. In the **Drawing** section, select **Arrange > Selection Pane...**
3. In the **Selection and Visibility** pane, all the elements on the slide are listed in reverse chronological order under **Shapes on this Slide**
4. Elements can be re-ordered using the **Re-order** buttons located at the bottom of the **Selection and Visibility** pane
   *Note*: The tab order of elements begins at the bottom of the list and tabs upwards.

# Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents of your slides in text format. Slide notes can be created as you build your presentation.

## *To add notes to your slides*

1. Go to menu item: **View**
2. In the **Presentation Views** section, select **Normal** to ensure that the notes panel is in view
   *Note*: You can then select menu item **Home**, to access text formatting options
3. The **Notes Pane** can be found at the bottom of the window, below the slide
4. Type and format your notes within the **Notes Pane** below each slide

## Technique 6. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images and graphical objects*

1. Right-click* the object
2. Select **Size and Position...**
3. Select the **Alt Text** tab
4. Fill in the **Alternative text** box

## Technique 7. Use Built-In Structuring Features

### 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g.,

screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible. Whenever possible, use just one row of headings.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the

other cells in the table.
- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 5](#)).

*To add a table with headings*

1. Go to menu item: **Insert**
2. In the **Tables** section, select the **Tables** icon
3. Select the number of rows and columns you would like your table to have
4. Select the table and a **Table Tools** menu item should appear
5. Go to menu item: **Table Tools > Design**
6. In the **Table Style Options** section, select the **Header Row** check box

## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

## To create an ordered or unordered list

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the **Bullets** icon for unordered lists or select the **Numbering** icon for ordered lists
3. To select a different list format, select the arrow beside the icon
4. Select a format from the format **Library** that appears in the drop-down menu

## To modify list styles

1. Go to menu item: **Home**
2. In the **Paragraph** section, select the arrow beside the **Bullets** icon for unordered lists or select the arrow beside the **Numbering** icon for ordered lists
3. Select **Define New Bullet...** to create a new unordered list format
4. Select **Define New Number Format...** to create a new ordered list format
5. In the **New Bullet** dialog or the **New Number Format** dialog, select the list characteristics
6. Select **OK**

# 7.3 Columns

Use Columns feature for placing text in columns. However, because columns can be a challenge for users of some assistive technologies, you should consider whether a column layout is really necessary.

## 7.4 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **Office > Prepare > Properties**
2. In the **Document Properties** section that appears, select the **Title** text box
3. Enter the Title
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

# Technique 8. Create Accessible Charts

Charts can be used to display data in meaningful ways for your audience. It is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help to correctly interpret the information.

## *To create a chart*

1. Select a **Slide Layout** that contains a placeholder for a chart (see [Technique 3.1](#), above)
2. Select the **Insert Chart** icon from the center of the placeholder
3. Select a **Chart Type** from the **Chart Gallery**
4. Select **OK**
   *Note*: This will open the Excel document titled "Chart in Microsoft Office PowerPoint", where you can input the data you would like to include in the chart. When you have done this, simply close the Excel window and the data will appear on the chart in the PowerPoint presentation.

## *To add titles and labels*

1. In the **Chart Tools** menu section, go to menu item: **Layout**
2. In the **Labels** section, select the type of title or label you would like to define (e.g., **Chart Title, Axis Titles, Data Labels**)

*To apply a predefined Chart Layout*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Chart Layouts** section, select a **Quick Layout** from the scrolling **Chart Layouts** gallery

*To change to a different predefined Chart Type*

1. In the **Chart Tools** menu section, go to menu item: **Design**
2. In the **Type** section, select the **Change Chart Type** icon
3. In the **Change Chart Type** dialog, select a chart type from the left pane
4. Select a **Chart Design** from the right pane
5. Select **OK**

*Other Chart Considerations*

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- When creating bar charts, go to menu item: **Chart Tools > Format** and in the **Shape Styles** section select **Shape Fill** to apply a texture to help distinguish the bars
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see Technique 9.2, below)

# Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white,

Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available.

However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use PowerPoint 2007's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read

out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

### *To change link text*

1. Highlight the link and right-click*
2. Select **Edit Hyperlink** (Ctrl + K)
3. Change the text in the **Text to display** box to something descriptive

## 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" (Source: W3C-WAI Draft)

# Technique 11. Check Accessibility

At this time, Powerpoint 2007 does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: January 10th, 2011]**

In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

Another option is to save the document into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see [Technique 11](#) (above).

1. Go to menu item: **Office > Save As > PDF or XPS**
2. In the **File name** box, type a name for the file

3. Select the **Options** button
4. Under **Include non-printing information** in the **Options** dialog, ensure that the **Document structure tags for accessibility** check box is selected
5. Under **PDF options**, ensure that **Bitmap text when fonts may not be embedded** check box is de-selected
6. Select **OK** and **Save**



## HTML

1. Go to menu item: **Office > Save As > Other Formats**
2. In the **File name** box, type a name for the file
3. In the **Save as type** box, select **Web Page**
4. Select **Save**
5. Check the HTML file for accessibility (see <u>Technique 11</u>, above)

*To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 11](#), above)
  *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.
The following accessibility related plug-ins and support are available for PowerPoint 2007:

- [PPT2HTML](#) – offers an accessibility tool bar for adding alt-text to charts.
- PowerTalk – an accessibility tool that provides a good approximation of how presentations will sound with a screen reader. [**Editor's note:** Tool no longer available.]
- [HiSoftware](#) – desktop add-ins that will create a Section 508 or WAI Fully Compliant Web pages from PowerPoint presentations (some knowledge of HTML code is required).

# Accessibility Help

If you are interested in what features are provided to make using PowerPoint 2007 more accessible to users, documentation is provided in the Help system:

1. Select **Help** icon in the right corner of the application window or select **F1**
2. Enter "Accessibility" as your search term in the **Help** dialog box

# References and Resources

1. [Microsoft PowerPoint: Video Tutorials](#)
2. [Ryerson University: Microsoft PowerPoint Accessibility Tipsheet (PDF)](#)
3. Microsoft PowerPoint 2007 Help – *Note*: PowerPoint 2007 is no longer supported, but you still have access to offline help by going to **Help** > **PowerPoint Help**.
4. [GAWDS Writing Better Alt Text](#)

# Acknowledgments

This document was produced as part of the [Accessible Digital Office Document (ADOD) Project](#).

   This project has been developed by the Inclusive Design Research Centre, OCAD University as part of an EnAbling Change Partnership project with the Government of Ontario and UNESCO (United Nations Educational, Scientific and Cultural Organization).

# Keynote for Mac

## Usage Notes

At the time of testing (September 30, 2010), Keynote '09 lacks several features that enable accessible office document authoring, most notably: the ability to add alternative text to images and objects, indicating natural language, quick styles or named styles, and change tracking. As a result, some of the other features that might otherwise support accessibility, such as its extensive templates are not as effective. In addition, Keynote '09 does not include an accessibility checking feature, which is a more advanced accessibility feature.

> **Editor's note:** In later versions of Keynote, users can add alt text to images and objects. Apple has added significant accessibility improvements to its iWork applications, but an accessibility checker is not a feature yet.

## What's an "Office Document"?

You should use these techniques when you are using Keynote '09 to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),

- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#) because these are specifically designed to provide guidance for highly dynamic and/ or interactive content.**

## File Formats

The default file format for Keynote '09 is the native **iWork format**. In addition, Keynote '09 offers many other presentation processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#):

- MS PowerPoint (PPT)
- PDF
- HTML

## Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However,

for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users. The application-specific steps and screenshots in this document were created using iWork Keynote '09 (ver.5.0.3(791), Mac OS X, Sept. 2010) and Keynote, version 9.1 (December 2019) while producing a document in the proprietary file format. Files are also easily saved as other file formats (see Technique 12).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting. Because templates provide the starting-point for so many

documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see [Technique 11](#)). The default template for new documents in Keynote '09 is a blank presentation. If you are connected to the internet, you can access a variety of blank business presentation templates. These are all accessible by virtue of being blank. As well, you may create your own templates.

## *To create an accessible template*

1. Go to menu item: **File > New** or **File > New from Theme Chooser...**
2. In the **Theme Chooser** dialog, select the **White** theme or select one of the other existing template designs
3. A new document in your selected template style will open
4. Ensure that you follow the techniques in this document
5. When you are finished you should also check the accessibility of the document (see [Technique 11](#))
6. Go to menu item: **File > Save Theme...**
7. In the **Save As** box, type a name for the template. Using a descriptive template name (e.g. "Accessible Memo Template") will increase the prominence of the accessibility status.
8. Specify a folder in which to save your template. *Note*: By default, it will be saved in your home folder in Library/ Application Support/iWork/Keynote/Templates/My Templates pane of the **Template Chooser**. To save the template in a different location than the default, create a new folder in the **Templates** folder. The folder name is then used as a template category in the **Template Chooser.**
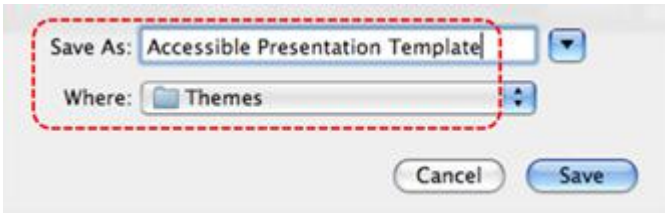
9.  Click **Save**

## *To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g. that you previously saved). Otherwise, simply open a new (blank) document.

1.  Go to menu item: **File > New from Theme Chooser...**
2.  In the **Template Chooser** dialog, select **My Templates** from the left pane
3.  Select your accessible template and click **Choose**
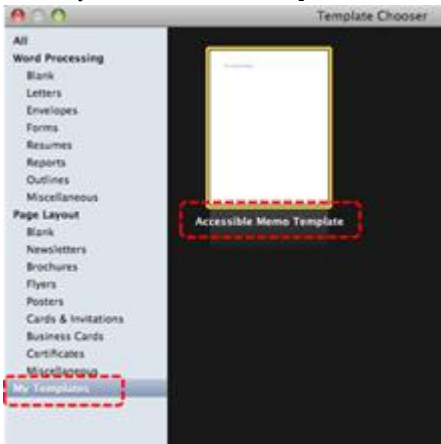
# Technique 2. Set Document Language

At this time, it is not possible to manually indicate the natural language for specific slides or sections of text in Keynote '09. As well, it is not possible to change the natural language of the document itself from the default language. **[Tested: September 30th, 2010]**

> **Editor's note:** In later versions of Keynote, users are able to set a presentation's language.
>
> 1.   Choose File > Advanced > Language & Region (from the File menu at the top of your screen).
> 2.   In the dialog that appears, click the pop-up menus and choose a language and a region.
>      *Note*: You can't change this setting for a shared presentation.
> 3.   Click OK.
>
> For more details, see [how to change a presentation's language and formatting](#).

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

# Technique 3. Use Built-In Layout and Styling Features

## 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout. *Note:* The built-in layouts can be more accessible to users of assistive technologies because they technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order elements were placed. *Note:* Each slide in Keynote '09 is derived from a Master Slide ([Technique 3.2](#)) applying "true layouts" requires that you use Master Slides that are accessible and appropriately designed for your purposes.

## 3.2 Customize Using Master Slides

If a layout must be customized, it is recommended that Master Slides be used. Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting, and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout. If you edit any aspect of the slide layout in the master slide, the change will affect all slides that were created based on it. For this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that you create and use master slides that meet the accessibility requirements outlined in this document.

*To create or customize a master slide*

1. Select the slide Note: To design a master slide from scratch, select a blank slide to start with. Otherwise, select a slide that resembles how you would like your slide to look and be sure to modify the slide characteristics to align with accessibility guidelines in this document.
2. Go to menu item: **View > Show Master Slides**
3. In the **Master Slide Navigator** in the left pane, select the **Master Slide Layout** you would like to modify
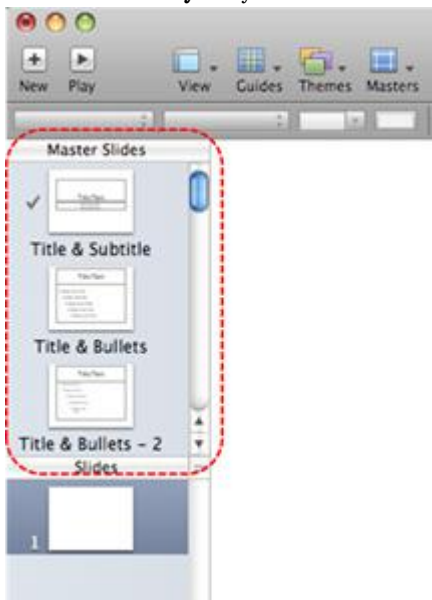


4. Customize the master slide to suit your needs (e.g., define placeholders for text, change background elements, add alignment guides, and more) ensuring that your changes meet accessibility requirements

*To define default attributes of text and objects*

1. Select the slide Note: To design a master slide from scratch, select a blank slide to start with. Otherwise, select a slide that resembles how you would like your slide to look and be sure to modify the slide characteristics to align with accessibility guidelines in this document.
2. Go to menu item: **View > Show Master Slides**
3. In the **Master Slide Navigator** in the left pane, select the **Master Slide Layout** you would like to define default attributes for
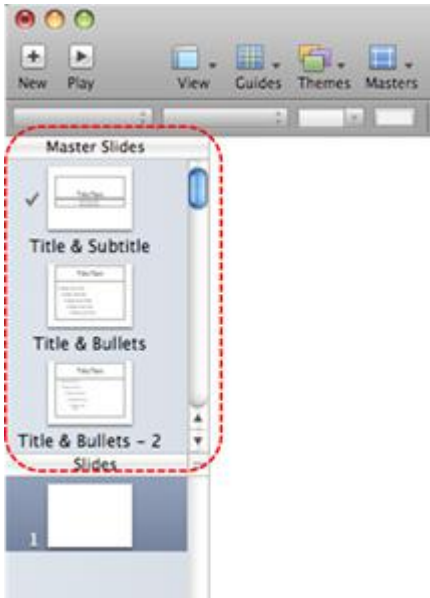


4. In the **Toolbar**, click the element type (e.g., text box, shapes, table, charts)



5. In the **Formatting** bar, format the element ensuring that it meets accessibility guidelines outlined in this document
6. To make the element a default for your current master slide,

go to menu item: **Format > Advanced > Define (element type) for Current Master** Note: To make the element a default for all master slides, go to menu item: **Format > Advanced > Define (element type) for All Masters**

# Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating" objects (text boxes, images, etc.) that can cause accessibility issues in word processors. However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top" when they are inserted, the default tab order is from the first object inserted to the last. However,

this will change if you use features such as "bring to front" and "send to back".

- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.) for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.
- For more complex layouts, it may be easier to simply to create the slide as usual and then set the tab order (see below).

*To set the tab order*

1. Select the object
2. Go to menu item: **Arrange > Bring Forward**, **Bring to Front**, **Send Backward** or **Send to Back**

## Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents

of your slides in text format. Slide notes can be created as you build your presentation.

*To add notes to your slides*

1. Go to menu item: **View > Show Presenter Notes**
2. In the pane at the bottom of the window (below the slide), enter notes to accompany each slide

## Technique 6. Provide Text Alternatives for Images and Graphical Objects

At this time, Keynote '09 does not offer a mechanism which enables the user to add alternative text descriptions to images or objects. **[Tested: September 28, 2010]**

> **Editor's note:** For later versions of Keynote, users can add alternative text descriptions for images and objects.
>
> 1. Select the image and go to the **Format** side bar. Click on the image tab.
> 2. Click the **Description** text box, then enter your text.
>
> For more details, see the section on how to add an image description on the Keynote User Guide for Mac.

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to

convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description

Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

## Technique 7. Use Built-In Structuring Features

# 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with

separate columns for the item name, price and quantity").

- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page (see [Technique 4](#)).

*To set default table attributes*

1. Go to menu item: **View > Show Master Slides**
2. Select a master slide from the **Master Slides Navigator** in the left pane
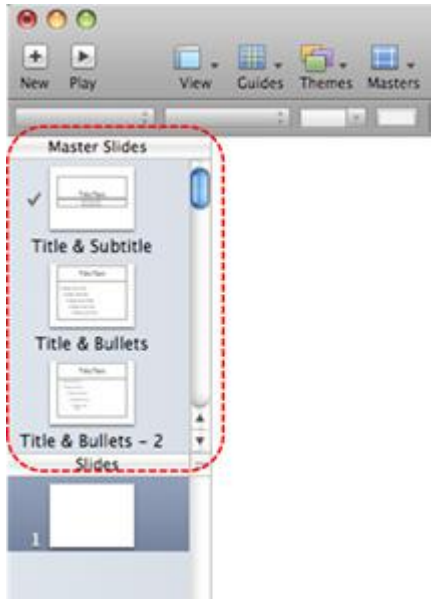
3. In the **Toolbar**, click **Table**



4. Select the table
5. Go to menu item: **View > Show Inspector**
6. In the **Inspector** dialog, select **Table inspector**
7. Click the **Table** tab
8. In the **Headers & Footers** section, select **Choose the number of header columns** or **Choose the number of header rows** drop-down menus
9. Select the number of headers
   *Note:* Limiting your table to one row or column of header will ensure your table remains clear and easy to interpret by assistive technologies.
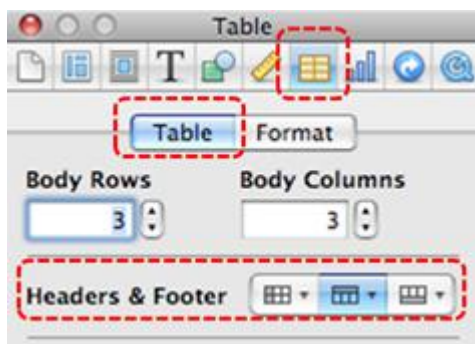
10. Customize the other characteristics of your table through the other sections of the **Table inspector** dialog

11. To make the table a default for your current master slide, go to menu item: **Format > Advanced > Define Table for Current Master**
*Note*: To make the table a default for all master slides, go to menu item: **Format > Advanced > Define Table for All Masters** Note: Defining the table as a default for all masters means that when you insert a Table element into any slide, it will display your preformatted characteristics (including appropriate headers)

## 7.2 Lists

When you create lists, it is important to format them as "real lists". Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

*To create an ordered or unordered list*

1. Select the text box or highlight the text

2. Go to menu item: **View > Show Inspector**
3. In the **Inspector** dialog, click **Text inspector**
4. Click the **Bullets** tab
5. In the **Bullets & Numbering** section, click the drop-down menu and choose a bullet or numbering option
6. Customize the list style accordingly, ensuring your selections align with the guidelines in this document
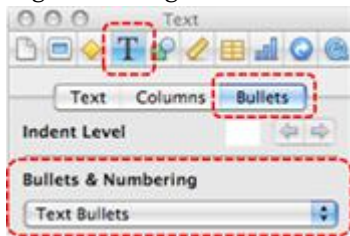


## 7.3 Columns

Use Columns feature for placing text in columns. *Note:* Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. In the **Toolbar**, select **Inspector**
2. In the **Inspector** dialog, select the **Document inspector** button

3. Click the **Spotlight** tab
4. In the **Title** box, type a descriptive name for the document
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.



# Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

## To create a chart

1. Go to menu item: **Insert > Chart**
2. Select the type of chart you want to use
3. Update the **Chart Data Editor** with the data you would like to display
4. Close the **Chart Data Editor**

## To add titles and labels

1. Select the chart
2. Go to menu item: **View > Show Inspector**
3. In the **Chart Inspector**, select **Chart**
4. Ensure the **Show Title** and **Show Legend** check boxes are selected
5. Select **Axis**
6. Under **Value Axis (Y)** and **Category Axis (X)**, select **Show Title** and **Show Value Labels** from their respective drop-down menus

## To change to a different predefined Chart Type

1. Select the chart
2. Go to menu item: **View > Show Inspector**
3. Select a chart type from the **Choose a chart type** drop-down menu

# Other Chart Considerations

- When creating line charts, use the formatting options to create

different types of dotted lines to facilitate legibility for users who are color blind

- When creating bar charts, it is helpful to apply texture instead of color to differentiate the bars
- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9.2](#))

## Technique 9. Make Content Easier to See

### 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because

printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern. In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or

distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

**Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use PowerPoint 2010's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether

you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

*To edit hyperlink text*

1. Enter the hyperlink
2. Go to menu item: **View > Show Inspector**
3. In the **Inspector** dialog, click **Hyperlink inspector**
4. In the **Display** box, enter the text you would like to display

## 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" (Source: W3C-WAI Draft)

## Technique 11. Check Accessibility

At this time, Keynote '09 does not offer a mechanism to check for potential accessibility errors in your document prior to publishing. **[Tested: September 30th, 2010]** In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

### *To evaluate HTML accessibility*

If you wish to check the accessibility of your document or template (see Technique 1), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

*To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check...**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on how to check accessibility using Adobe Acrobat Professional.

# Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

*To export to a different format*

1. Go to menu item: **Share > Export**
2. Select the file format you would like to export
3. Customize the settings relevant to the selected file format
4. Click **Next**
5. In the **Save As** box, enter a descriptive file name
6. In the **Where** drop-down menu, specify the location you would like the exported file to be saved
7. Click **Export**

# PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see Technique 11 (above).

*To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see Technique 11) *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results. The following accessibility related plug-ins and support are available for Keynote '09:

- PowerTalk – an accessibility tool that provides a good approximation of how presentations will sound with a screen reader. [**Editor's note:** Tool no longer available.]
- [Keynote Support](#)

## Accessibility Help

If you are interested in what features are provided to make using Keynote '09 more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help**
2. Enter your search term in the **Search** box

## References and Resources

1. [Keynote User Guide for Mac](#)
2. [Apple: Create accessible presentations with Keynote](#)
3. [GAWDS Writing Better Alt Text](#)

# Acknowledgments

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# OpenOffice Impress

## Usage Notes

At the time of testing (December 2019), OpenOffice Impress provides a set of accessibility features that is sufficient to enable the production of accessible digital office documents. However, OpenOffice Impress does not include an accessibility checking feature.

## What's an "Office Document"?

You should use these techniques when you are using Impress to create documents that are:

- **Intended to be used by people** (i.e., not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity)**,**
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

**If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these techniques will still be useful to you, but you should also consult the W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0) because these are**

**specifically designed to provide guidance for highly dynamic and/ or interactive content.**

# File Formats

The default file format for Impress is **ODF Presentation (ODP)**.

In addition, Impress offers many other presentation processor and web format saving options. Most of these have not been checked for accessibility, but some information and/or instructions are available for the following formats in [Technique 12](#):

- MS PowerPoint (PPT and PPTX)
- PDF
- HTML

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or Shift+F10.

## Disclaimer and Testing Details:

**Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.

The application-specific steps and screenshots in this document were created using OpenOffice Impress (ver. 3.2.1, Windows XP, Aug. 2010 and Apache OpenOffice 4.1.7)) while creating an ODT document. Files can also be easily saved as other file formats (see Technique 12).

## Technique 1. Use Accessible Templates

All office documents start with a template, which can be as simple as a blank standard-sized page or as complex as a nearly complete document with text, graphics and other content. For example, a "Meeting Minutes" template might include headings for information relevant to a business meeting, such as "Actions" above a table with rows to denote time and columns for actions of the meeting.

Because templates provide the starting-point for so many documents, accessibility is critical. If you are unsure whether a template is accessible, you should check a sample document produced when the template is used (see Technique 11).

OpenOffice Impress's default template for new documents is a blank presentation. The basic installation also includes blank business card and blank label templates. These are all accessible by virtue of being blank. As well, you may create your own templates.

*To create an accessible template*

1. Create a new document
2. Ensure that you follow the techniques in this document
3. When you are finished you should also check the accessibility of the document (see <u>Technique 11</u>)
4. Go to menu item: **File > Properties**
5. Use the **Title** and/or **Comments** to indicate the accessibility status of the template. Using **Title** (e.g., "Accessible Memo Template") will increase the prominence of the accessibility status because this is used in place of the template's file name. **Comments** can be used to add more information if necessary (e.g., "This memo template has been checked for accessibility.").
6. Close the dialog with **OK**



7. Go to menu item: **File > Templates > Save** (Shift+F11)
8. In the **New Template** box, type a name for the template
9. Select the category you would like to save it in, under **Categories**
   *Note*: the category is simply the folder into which you are saving the template

10. Close the dialog with **OK**



## *To select an accessible template*

*Note*: Only use these steps if you have an accessible template available (e.g., that you previously saved). Otherwise, simply open a new (blank) document.

1. Go to menu item: **File > New > Templates and Documents**
2. Select the **Templates** icon
3. Select a template document from the list
   *Note*: A properties pane appears on the right side of the window, where you can read the document properties (Title, By, Date, Modified by, Modified on, Description, and Size). If you placed information about the accessibility of the template in the **Title** and/or **Comments** when you created the template (see above), this will be displayed in the **Title** and/or **Description**, respectively.
4. Select **Open**

5. A new document based on the template will be displayed. If you have chosen an accessible template, the document will be accessible at this point. **As you add your content** (e.g., text, images, etc.)**, ensure that you consult the sections that follow to preserve accessibility.**

## Technique 2. Set Document Language

In order for assistive technologies (e.g., screen readers) to be able to present your document accurately, it is important to indicate the natural language of the document. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

*To select a language for the whole document*

1. Go to menu item: **Tools > Options**
2. Select **Language Settings > Languages**

3.  Under **Default languages for documents**, select the
    document language for all newly created documents
    *Note:* If you mark **For the current document only**, your
    choice will only apply to the current document.
4.  Close the dialog with **OK**



*To apply a language directly to selected text*

1.  Select the text to which you want to apply a language
2.  Go to menu item: **Format > Character**
3.  Select the **Font** tab
4.  Select the **Language** and click **OK**

## Technique 3. Use Built-In Layout and Styling Features

## 3.1 Use Built-In Slide Layouts

Instead of creating each slide in your presentation by starting from a blank slide, check whether there is a suitable built-in layout.

*Note:* The built-in layouts can be more accessible to users of assistive technologies because they technologies sometimes read the floating items on the slide in the order that they were placed on the slide. The built-in layouts have usually taken this into account (e.g., "Title" first followed by other items, left to right and from top to bottom). If you create slide layouts from scratch, it is sometimes difficult to keep track of the order elements were placed.

*To apply "true layout" to a slide*

1. Select the slide in the **Slides** pane on the left
2. Go to menu item: **Format > Slide Layout...**
3. Go to **Tasks** pane on the right
4. Select layout under the **Layouts** section

# 3.2 Use Quick Styles

You should make use of the quick styles that are included with the office application (e.g., pre-defined heading fonts and characters) before creating your own styles or using the character formatting tools directly. Quick styles help your readers understand why something was formatted in a given way, which is especially helpful when there are multiple reasons for the same formatting (e.g., it is common to use italics for emphasis, Latin terms and species names).

*Note:* While office application suites support headings in much the same way, the named styles often differ.

Impress provides quick styles for theme fonts, but applying these directly to text does not define the text as a heading or body font. To define the font for headings and body text, you need to apply these characteristics to the presentation theme.

Impress provides named styles for "Heading", "Title", etc., but not for strong and emphasis.

## *To use default named styles*

1. Go to menu item: **Format > Styles and Formatting** (F11)
2. Select the **Graphic Styles** icon
3. Select the named style
4. Click the **Bucket** icon in the element to which you would like to apply the named style
5. Close the **Styles and Formatting** dialog
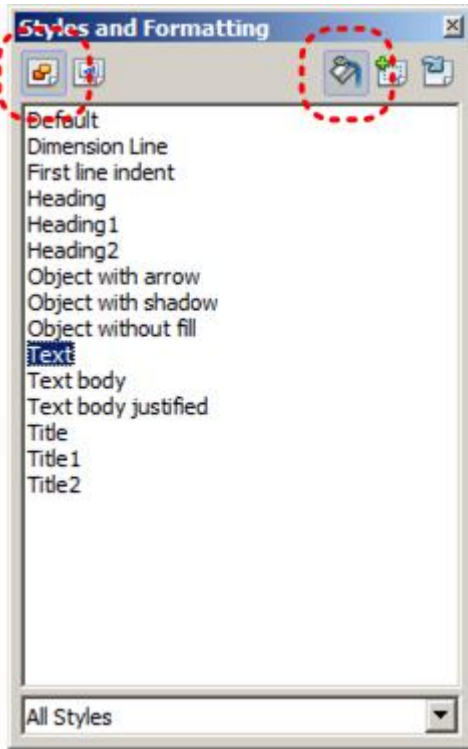
*To change the text size for a default named style*

1. Go to menu item: **Format > Styles and Formatting** (F11)
2. Select the style to modify from the list
3. Right click and select: **Modify...**
4. Select the **Font** tab
5. Select a font size under **Size**
6. Exit with **OK**

## 3.3 Customize Using Master Slides

If a layout must be customized, it is recommended that Master Slides be used.

Every slide layout in a presentation is defined by its master slide. A master slide determines the formatting style for various elements of the slide layout. This includes font styles, character formatting, and the positioning of elements. Essentially, each master slide acts as a design template for the slide layout.

If you edit any aspect of the slide layout in the master slide, the change will affect all slides that were created based on it. For this reason, it is good practice to edit the master slide and use the slide layouts before building individual slides. It is essential that you create and use master slides that meet the accessibility requirements outlined in this document.

*To modify a Master Slide*

1. Go to menu item: **View > Master > Slide Master**
2. Edit the master slide, ensuring it aligns with the guidelines in this document

## Technique 4. Set a Logical Tab Order

Many presentation applications create content composed almost exclusively of "floating" objects. This means that they avoid the transitions between in-line content and secondary "floating" objects (text boxes, images, etc.) that can cause accessibility issues in word processors.

However, when you are working with "floating" objects, it is important to remember that the way objects are positioned in two dimensions on the screen may be completely different from how the objects will be read by a screen reader or navigated using a keyboard. The order that content is navigated sequentially is called the "Tab Order" because often the "Tab" key is used to navigate from one "floating" object to the next.

*Tips for setting a logical "tab order" for "floating" objects*

- The tab order of floating objects is usually from the "lowest" object on the slide to the "highest".
- Because objects automatically appear "on top"

when they are inserted, the default tab order is from the first object inserted to the last. However, this will change if you use features such as "bring to front" and "send to back".

- The slide's main heading should be first in the tab order.
- Headings should be placed in the tab order immediately before the items (text, diagrams, etc.) for which they are acting as a heading.
- Labels should be in the reading order placed immediately before the objects that they label.
- For simple slide layouts, it may be possible to simply insert objects in a logical tab order.
- For more complex layouts, it may be easier to simply to create the slide as usual and then set the tab order (see below).

*To set the tab order*

1. Right-click* the object
2. Select **Arrange > Bring to Front**, **Bring Forward**, **Send Backward**, or **Send to Back**

## Technique 5. Use Slide Notes

A useful aspect of presentation applications is the facility to add notes to slides, which can then be read by assistive technologies. You can use these slide notes to explain and expand on the contents

of your slides in text format. Slide notes can be created as you build your presentation.

*To add notes to your slides*

1. Go to menu item: **View > Notes Page**
2. In the text box positioned at the bottom of the page, select **Click to add notes**
3. Enter notes to accompany the slide

## Technique 6. Provide Text Alternatives for Images and Graphical Objects

When using images or other graphical objects, such as charts and graphs, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to of each image. If an image is too complicated to concisely describe in the alternative text alone (artwork, flowcharts, etc.), provide a short text alternative and a longer description as well.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful

information, leave the alternative text blank
- If the image contains meaningful text, ensure all of the text is replicated
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing

> the image to a person over the phone
>
> •    Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description
>
> Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, you do not have to provide alternate text within the image.

*To add alternative text to images*

1. Right-click on object
2. Select **Description...** option
3. Enter alternative text in the **Title** box



*To add long descriptions to images*

1. Right-click on object

2. Select **Description...** option
3. Enter description in **Description** box



## Technique 7. Use Built-In Structuring Features

## 7.1 Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (e.g., screen readers) to provide context so that the information within the table can be conveyed in a meaningful way.

*Tips for tables*

- Only use tables for tabular information, not for formatting.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to show at the top of each page. Also set the table to break between rows instead of in the middle of rows.
- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (e.g., "A sample order form with separate columns for the item name, price and quantity").
- Table cells should be marked as table headers when they serve as labels to help interpret the other cells in the table.
- Table header cells labels should be concise and clear.
- Ensure the table is not "floating" on the page

*To add a table with headings*

1. Go to menu item: **Insert > Table...**
2. Specify the number of columns and rows in the new table
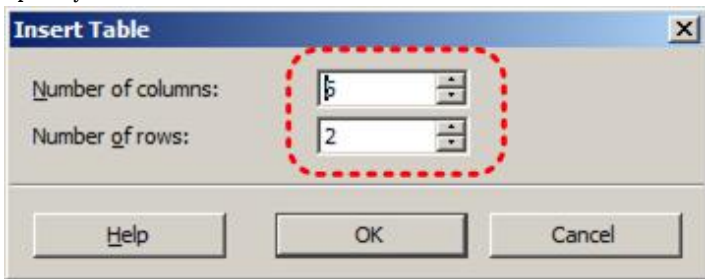


3. Double-click anywhere within the table to open the **Table** menu
4. Select the **Table Design** icon to open the **Table Design** menu in the **Tasks** window pane on the right



5. Select the **Header row** check box

## 7.2 Lists

When you create lists, it is important to format them as "real lists".

Otherwise, assistive technologies will interpret your list as a series of short separate paragraphs instead of a coherent list of related items.

## To create an ordered or unordered list

1. Go to menu item: **Format > Bullets and Numbering**
2. For unordered lists, select an option from the **Bullets** tab
3. For ordered lists, select an option from the **Numbering Type** tab

## To modify list styles

1. Go to menu item: **Format > Bullets and Numbering**
2. In the **Bullets and Numbering** dialog, select the **Customize** tab
3. Modify the list style by making selections from the available formatting options
4. Select **OK**
   *Note*: This only modifies that instance of the list style.

# 7.3 Columns

Use Columns feature for placing text in columns.

*Note*: Because columns can be a challenge for users of some assistive technologies, consider whether a column layout is really necessary.

## 7.4 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

### To change the title of the current document

1. Go to menu item: **File > Properties**
2. Select the **Description** tab
3. Type the new title in the **Title** box and click **OK**
   *Note*: The **Title** defined in the properties is different than the file name. It is also unrelated to the template name, discussed above.

## Technique 8. Create Accessible Charts

Charts can be used to make data more understandable for some audiences. However, it is important to ensure that your chart is as accessible as possible to all members of your audience. All basic accessibility considerations that are applied to the rest of your document must also be applied to your charts and the elements within your charts. For example, use shape and color, rather than color alone, to convey information. As well, some further steps should be taken to ensure that the contents are your chart are appropriate labeled to give users reference points that will help them to correctly interpret the information.

### To create a chart

1. Select a slide layout with a placeholder for data charts (see

)
2. Double-click* the center of the placeholder to insert the data chart
3. Right-click* the chart and select **Chart Data Table...**
4. Update the data table with the data you would like to display
5. Close the data table

### *To add titles and labels*

1. Double-click* the chart to access the chart menus
2. Go to menu item: **Insert > Titles**
3. Update the relevant fields and select **OK**
4. Go to menu item: **Insert > Data Labels**
5. Configure your data label selections and select **OK**

### *To change to a different predefined Chart Type*

1. Double-click* the chart to access the chart menus
2. Go to menu item: **Format > Chart Type**
3. In the **Chart Type** dialog, select a predefined chart type and style
4. Select **OK**

## Other Chart Considerations

- When creating line charts, use the formatting options to create different types of dotted lines to facilitate legibility for users who are color blind
- When creating bar charts, it is helpful to apply textures instead of color to differentiate the bars

- Change the default colors to a color safe or gray-scale palette
- Use the formatting options to change predefined colors, ensuring that they align with sufficient contrast requirements (see [Technique 9.2](#))

## Technique 9. Make Content Easier to See

## 9.1 Format of Text

When formatting text, especially when the text is likely to be printed, try to:

- Use font sizes between 12 and 18 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Office applications do typically include accessibility features such as the ability to magnify documents and support for high contrast modes. However, because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

> **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

# 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use PowerPoint's "Track Changes" feature to track changes.
- Do not distinguish between images by referring to their appearance (e.g. "the bigger one"). Instead, label each image with a figure number and use that for references.

# 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted, above.

## 9.6 Avoid Transitions

Transitions between slides and elements in each slide (e.g., bullets in a list flying onto the screen) can be distracting to users with disabilities. It can also cause assistive technologies to read the slide incorrectly. For these reasons, it is best to avoid transitions altogether.

## Technique 10. Make Content Easier to Understand

## 10.1 Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## 10.2 Provide Context for Hyperlinks

Hyperlink text in your document should be meaningful when read

out of context. To be an effective navigation aid, the link text should describe the destination of the link.

Consider the experience of screen reader users: Generally, screen readers generate a list of links, and screen reader users navigate this list alphabetically. Hyperlink text such as "click here" or "more" is meaningless in this context.

In order to be useful to someone using a screen reader, ensure that hyperlink text is self-describing and meaningful on its own. To make the address of hyperlink clear when printing, you may wish to include the address in brackets following the descriptive text of the hyperlink.

## *To change link text*

1. Type the link address and **Enter**
2. Highlight the link
3. Go to menu item: **Edit > Hyperlink…**
4. In the **Hyperlink** dialog, type meaningful descriptive text of the hyperlink in the field labeled **Text**
5. Select **Apply**
6. Select **Close**

# 10.3 Accessible Presentations

It is important to consider accessibility before, during, and after presentations. Below is a helpful link with guidance on how to make presentations accessible to all:

- "How to Make Presentations Accessible to All" ([Source: W3C-WAI Draft](#))

# Technique 11. Check Accessibility

At this time (December 2019), OpenOffice Impress does not offer a mechanism to identify potential accessibility errors in your document prior to publishing.

   In order to get some indication of the accessibility of your document or template (see Technique 1), then you may consider saving the file into HTML or PDF in order to perform an accessibility check in one of those formats, as described below.

## *To evaluate HTML accessibility*

If you wish to check the accessibility of your document or template (see Technique 1), one option is to save it into HTML format and use one of the web accessibility checkers available online. Such as:

- AChecker
- WebAIM Wave Web Accessibility Evaluation Tool

## *To evaluate PDF accessibility*

If you saved your document in tagged PDF format, you can use the following tools and steps to evaluate the accessibility of the PDF document:

- Adobe Acrobat Professional
- CommonLook PDF Evaluator
- PDF Accessibility Checker (PAC) – a free alternative provided by "Access for all"

*To evaluate PDF accessibility in Adobe Acrobat Professional*

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

> **Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

## Technique 12. Use Accessibility Features when Saving/Exporting to Other Formats

In some cases, additional steps must be taken in order to ensure accessibility information is preserved when saving/exporting to formats other than the default.

## PDF

PDF documents are not always accessible. Accessible PDF documents are often called "Tagged PDF" because they include "tags" that encode structural information required for accessibility. To evaluate the accessibility of your PDF document, see [Technique 11](#).

1. **Go to menu item: File > Export as PDF**
2. **Check box labeled Tagged PDF**

3. **Click Export**
4. Enter name and save location
5. Select **Save**

*Note*: You must ensure this option is selected in the PDF Options window dialog box before using PDF icon on menu bar.

# HTML

1. Open the presentation that you want to save in HTML format.
2. Go to menu item: **File > Export**
3. Set the **File type** to **HTML Document (OpenOffice.org Impress) (.html;.htm)**.
4. Enter a **File name**
5. Click **Export**
6. Follow the instructions in the **HTML Export** Wizard
7. Check the HTML file for accessibility (see [Technique 11](#))

## *To clean up your HTML file*

- Remove unnecessary styles, line breaks, etc.
- Remove unnecessary id, class, and attributes
- Remove font tags
- Remove styles in the <head> tag
- Ensure the <th> tags have a scope attribute
- Remove <p> tags nested inside <th> and <td> tags
- Check for accessibility (see [Technique 11](#))
  *Note*: you may wish to use HTML editors or utilities to help with this process.

# Technique 13. Consider Using Accessibility Support Applications/Plugins

*Disclaimer*: This list is provided for information purposes only. It is not exhaustive and inclusion of an application or plug-in on the list does not constitute a recommendation or guarantee of results.

The following accessibility related plug-ins and support are available for OpenOffice Impress:

- [PowerTalk](#) – an accessibility tool that provides a good approximation of how presentations will sound with a screen reader.

- [OOo2GD](#) – an extension that allows you to export, update and import documents, spreadsheets and presentations between OpenOffice.org applications and Google docs.

## Accessibility Help

If you are interested in what features are provided to make using OpenOffice Impress more accessible to users, documentation is provided in the Help system:

1. Go to menu item: **Help > OpenOffice.org Help** (F1)
2. Enter "accessibility" as the **Search Term**

## References and Resources

1. [OpenOffice Impress Help](#)
2. [WebAim: OpenOffice.org and Accessibility](#)
3. [GAWDS Writing Better Alt Text](#)

4. [OpenOffice.org 3 Impress Guide (PDF)](#)

# Acknowledgments

This document was produced as part of the [Accessible Digital Office Document (ADOD) Project](#).

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   Substantial contributions have also been made to the project by [AnySurfer](#), the [City of Toronto](#), and [OCAD University](#).

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**Source:** [Authoring Techniques for Accessible Office Documents:](#)

# PDF PRODUCTION APPLICATIONS

# Adobe InDesign CS6 and CC

## Usage Notes

At the time of testing, Adobe InDesign CS6 (April 2013) and Adobe InDesign Creative Cloud 2019 (December 2019) provide a set of accessibility features that are sufficient to enable the production of accessible digital documents.

## What is "InDesign"?

You should use the technique below when you are using InDesign to create documents that are:

- Intended to be used by people (*i.e., not computer code*),
- Text and Image based (*intended for design*)
- Fully printable and can be digitized
- Creative design (*layout, e.g., books, packages, poster, interactive web*)

Note: InDesign is best for print design, but there are also options of doing web and digital publishing. If you are creating forms, web pages, applications, or other dynamic and/or interactive content, the techniques below will be useful, but consult the W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0) because these are specifically designed to provide guidance for highly dynamic and/or interactive content.

# File Formats

The default file format for InDesign is **(.indd)**.

In addition, InDesign offers many other web format saving options. Most of these have not been checked for accessibility.

- ePub
- PDF (print and interactive)
- Flash Player SWF (for interactive)
- HTML, XHTML
- XML

# Document Conventions

We have tried to formulate these techniques so that they are useful to all authors, regardless if they use a mouse. However, there are several instances where mouse-only language is used for clarity purposes . Below are the mouse-only terms and their keyboard alternatives:

- *Right-click: To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (*some keyboard have this to the right of the spacebar*) or Shift+F10.

## *Disclaimer and Testing Details:*

Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups. In cases where more certainty is required, it is

recommended that you test the documents with end users with disabilities, including screen reader users.

# Technique 1. Use Accessible Templates

InDesign starts with a simple blank page that can be adjusted to any size. There are no build-in templates for InDesign. However, you can create your own templates from scratch or download already made templates from Adobe.

Templates provide the starting point for documents, so accessibility is critical. If you are unsure whether a template is accessible, check the document using Acrobat Pro. Export the file and use the Accessibility Checker in Acrobat Pro.

*To create an accessible template*

- Select **File** > **New** > **New Document**

> Keyboard shortcut: Ctrl + N (*on Windows*) and Cmd + N (*on Mac*)

1. Select *print*, *web*, or *mobile* and **Page Size**
2. **Uncheck** the **Facing Pages box** if your document is **NOT** intended to be in **book format**
3. Select **OK**
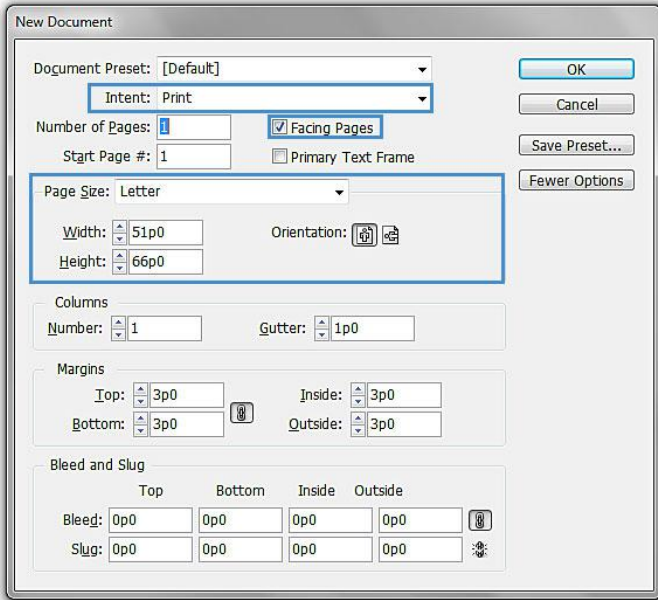
**Editor's note:** Adobe InDesign CC users will see a different version of the dialog box with the same menu items.
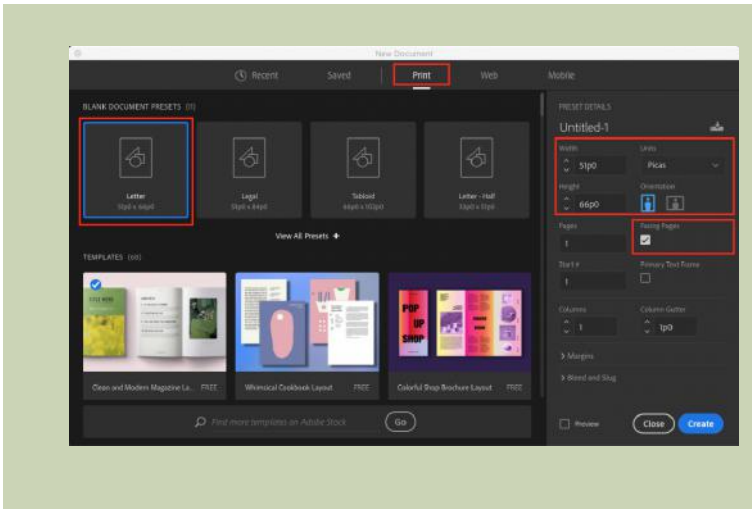
*To Saving File as a Template*

- **Select file** > **Save**

> Keyboard shortcut: Ctrl + S (*on Windows*) and Cmd + S (*on Mac*)

1. Insert file name and under **Save as type** select **CS6 InDesign template**
2. Select **Save**

> **Editor's note:** InDesign CC, users will see the following dialog box.
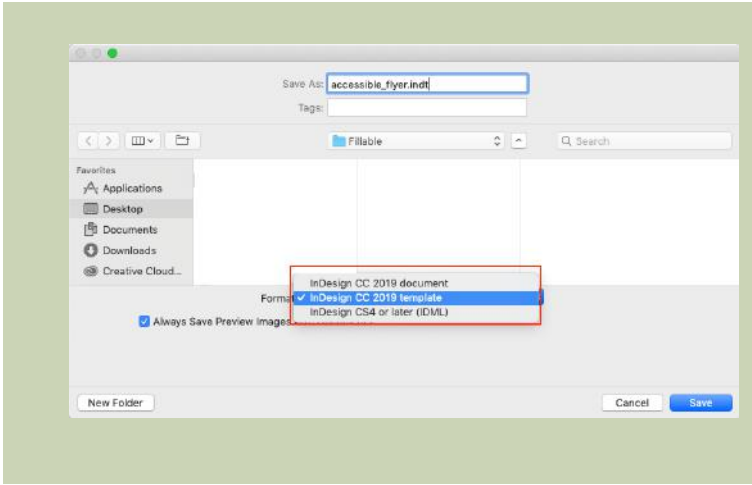
## Technique 2. Specify Document Language

The language setting in InDesign will set language within the program only. This language setting in InDesign will not carry over to the exported PDF. Be sure to set the document language in Adobe Acrobat after exporting to PDF.

*To specify the document language for an exported PDF*

1. Choose **File** > **Export**.
2. Specify a name and location for the file. For Compatibility, choose the lowest PDF version necessary to open the files you create.
3. For **Save As** *Type* (Windows) or *Format* (Mac OS), choose **Adobe PDF (Print)**, and then click **Save**.
4. Find the **Advanced** tab, and go to **Accessibility Options.**

5. Under **Language**, choose the document language for the PDF. This determines the default language for the exported PDF.
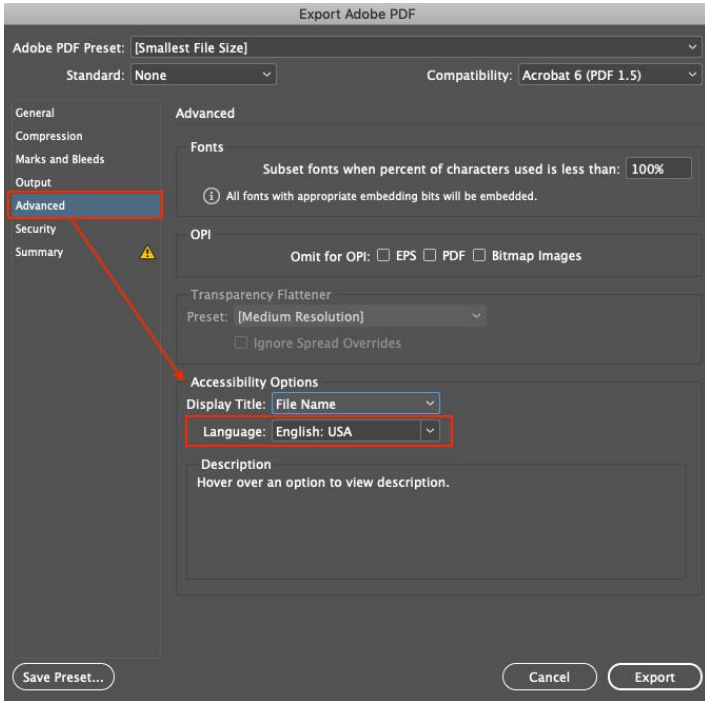


## Technique 3. Creating Artifacts for Objects

The **artifact** tag allows users to hide items on the page, such as page numbers or unimportant objects, when viewing the exported PDF file in Reflow view, which displays only tagged items. This is also useful when viewing PDF files on a mobile device or in other PDF readers.

There are two options to creating artifacts:

- Option 1 uses Object Export Options Dialog box where the user select the images in the document individually and add

artifact.

- Option 2 uses Tag pane where the users individually select the object and add the required tagging.

## Artifact Option 1

1. Select the image or object
2. Select **Object** > **Object Export Options**
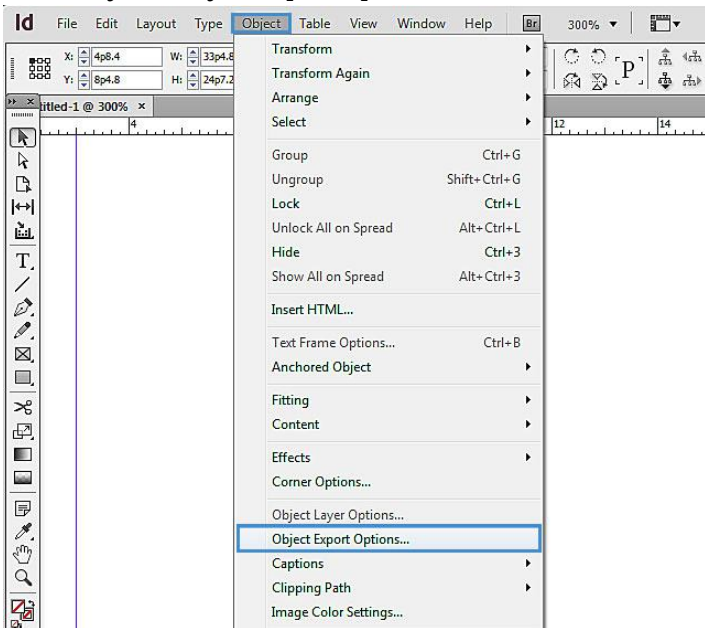


3. Select **Tagged PDF** > **Apply Tag**
4. Choose either **Artifact** or **Based on Object**
5. Select **Done**
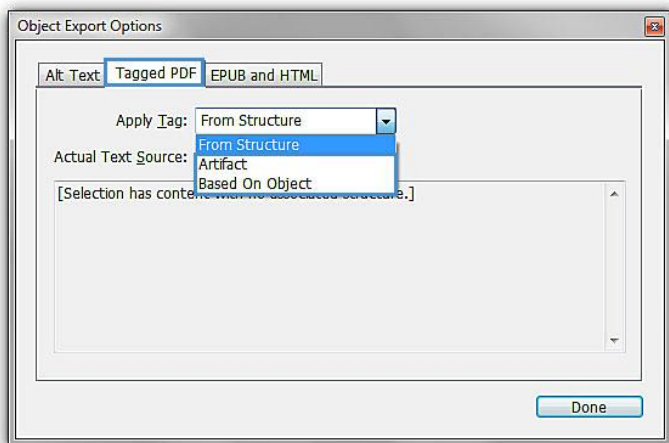
## Artifact Option 2

1. Select the object or artifact
2. In **Tag pane** select **Artifact**
   *Note:* to view Tags Panel: (**Window** > **Utilities** > **Tags**)
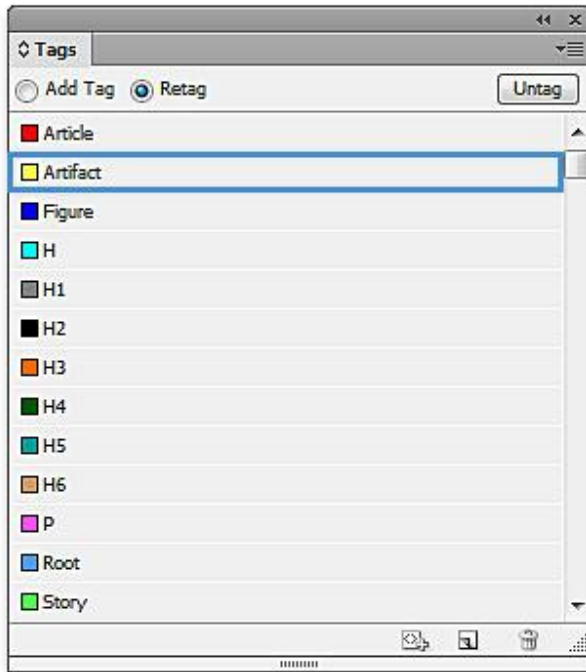
*Note:* for more detail information on tagging and structure pane see [Technique 7](#).

## Technique 4. Alternative Text for Images and Graphical Objects

When using images or other graphical objects, such as graphs, shapes, and background, it is important to ensure that the information you intend to convey using the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image.

*Tips for Writing Alternative Text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank and create an artifact (e.g., background images should generally have no alt text, other decorative images should only have alt text if they form a crucial part of the content, message, and purpose of the document).
- If the image contains meaningful text, ensure all of the text is replicated.
- For logos, the alternative text should be the organization's name.
- For groups of logos, one logo can be chosen to represent the group.
- Sometimes text is included as part of a logo or footer image (e.g. the image might contain a phone number), this text should be set as the alternative text of the image.
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences.
- Test by having others review the document with the images replaced by the alternative text.

There are two options to add Alternative Text to images Option one uses the **Object Export Options** dialog box where the user select the images in the document individually and add the alternative text. Option two uses Structure panel that create attribute to individual images.

When you export the document, the alt text you've assigned will travel with the image.

1. Select the image or object
2. Select **Object** > **Object Export Options**

## *To add alternative text to images (Option 1)*

1. Select **Alt Text** > **Alt Text Source** drop down menu
2. Choose **Custom**
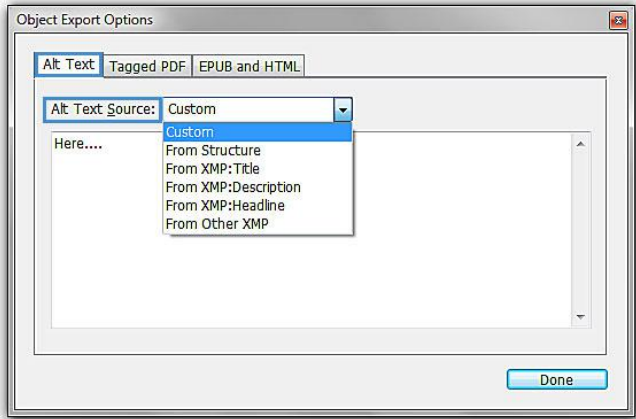


3. Type the description in the box below
4. Select **Done**

## *To add alternative text to images (Option 2 – Using Structure Panel)*

1. **Structure Panel** (**View** > **Structure** > **Show Structure**)
2. Select the Figure in the panel.
3. Select ▼≡ or ≡
4. Select **New Attribute**
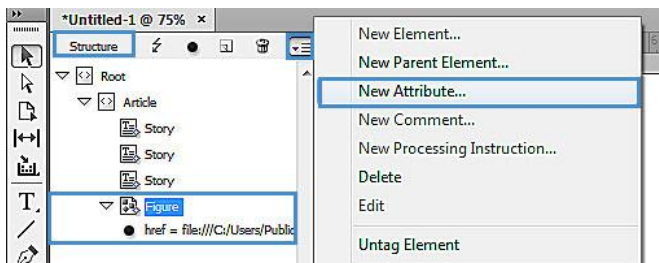
5. Insert **Alt** (case sensitive) under **Name** (Note: You *must use a capital "A" and lowercase "lt" to be valid*)
6. Place the descriptions under **Value**
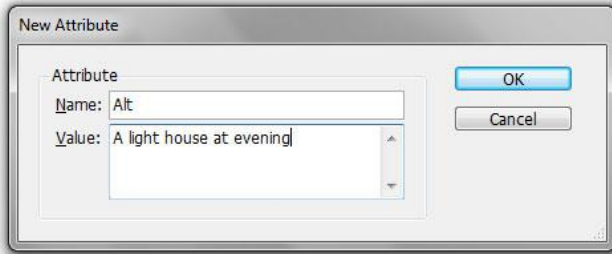


# Technique 5. Creating Paragraph Styles

Any document that is longer than a few paragraphs require structure to make them more straightforward for readers to understand. Creating Paragraph styles will set the headings and style for the document. It will also help in creating a Table of Contents. The structural elements that indicate order and level provide a meaningful sequence to users of assistive technologies.

- Select **Paragraph Styles** (*in typography workspace*)

Keyboard shortcut: F11 (*on Windows*) Cmd + F11 (*on Mac*)

1. Select [icon] or [icon] in the top right corner for more options.

2. Select **New Paragraph Style...**
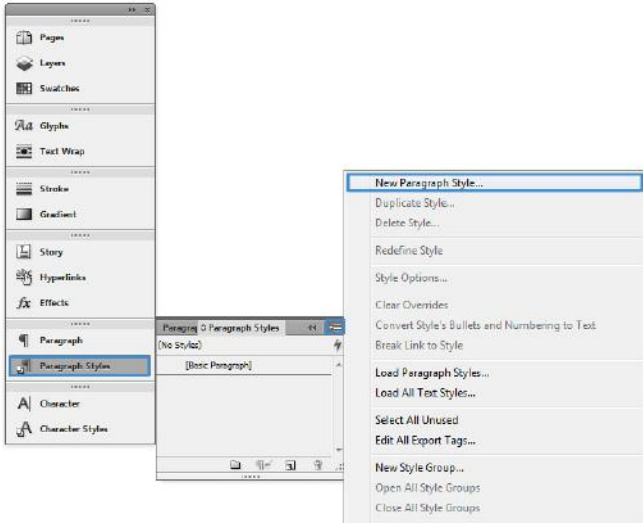


3. Select **General** > **Style Name** and insert a title for the style
   (*e.g., header, body text, caption .etc*)
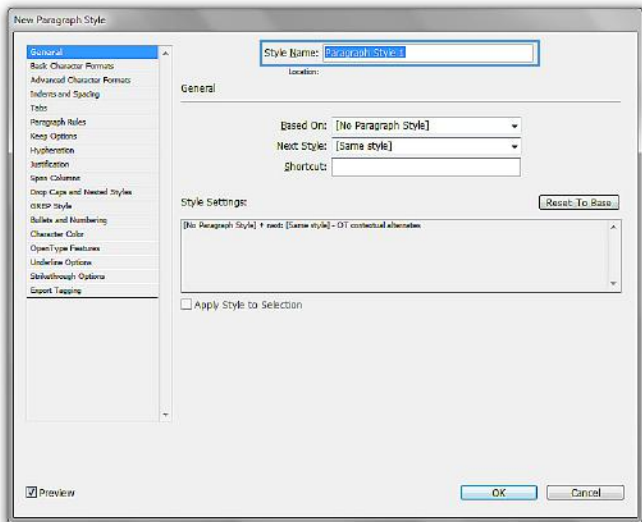


4. Select **Basic Character Formats** located in the left side
   pane
5. Choose the font, font style and the size

# Technique 6. Creating Accessible Tables

When using tables, it is important to ensure that they are clear and appropriately structured. This helps all users to better understand the information in the table and allows assistive technologies (*e.g.*, *screen readers*) to provide context so that the information within the table can be conveyed in a meaningful way.

When creating accessible tables in InDesign, there are some things to keep in mind:

- Be sure to add alternative text to facilitate understanding of the table (see Technique 3).
- After converting your InDesign document to PDF, be sure to review the document in Adobe Acrobat and ensure that the table is properly tagged.

*Tips for tables*

- Only use tables for tabular information, not for formatting, such as to position columns.
- Use "real tables" rather than text formatted to look like tables using the TAB key or space bar. These will not be recognized by assistive technology.
- Keep tables simple by avoiding merged cells and dividing complex data sets into separate smaller tables, where possible.
- If tables split across pages, set the header to

show at the top of each page. Also set the table to break between rows instead of in the middle of rows.

- Create a text summary of the essential table contents. Any abbreviations used should be explained in the summary.
- Table captions or descriptions should answer the question "what is the table's purpose and how is it organized?" (*e.g.*, "A *sample order form with separate columns for the item name, price and quantity*").
- Table header cell labels should be concise and clear.

*To create tables*

Keyboard short cut: Ctrl + Alt + Shift + T (*on Windows*), Cmd + Shift + Option + T (*on Mac*)

1. Create a table, go to **Table** > **Create Table**
2. Insert **Body Rows** and **Columns**
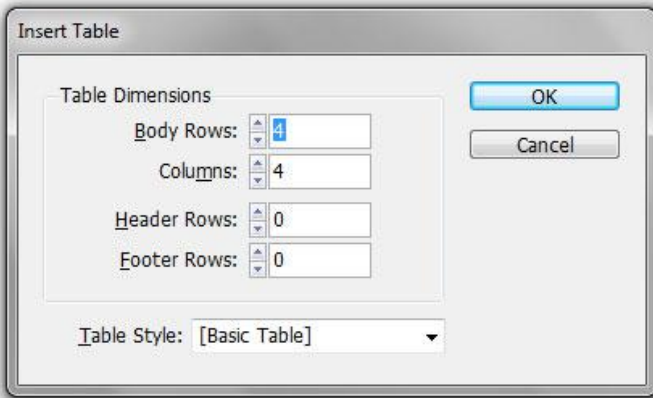
3. Select **OK**

## *To convert Text (with tabs) to a Table*

If you have created text with tabs. To convert the text to a table:

1. Select all the text
2. **Table** > **Convert To Table**
3. **Column Separator** > **Tab**
4. Select **OK**
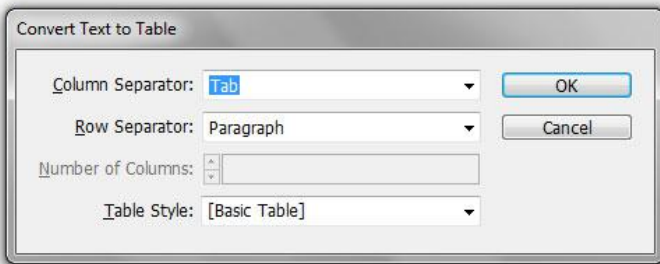
## *Removing Table Lines*

1. Place the Type cursor on top of the table until the cursor changes to an upside down black arrow.
2. Click and drag the cursor to select all of the chart (*or part of the chart*)
3. In the top navigation. It'll show a line box where you can choose which side you would like to remove the line from.
4. Once selected. Click on the "**None**" outline button
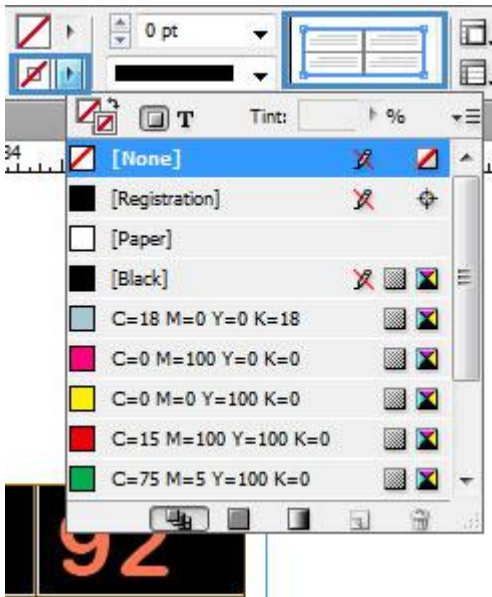


## *Repeat table header*

If you have a table that spans more than one page or spread, it's important to ensure that table headers are repeated to facilitate understanding of the content.

1. Go to **Table** > **Table Options** > **Table Setup...**

2. The **Table Options** dialog box appears.
3. Under the **Table Setup** tab, indicate the number of **Header Rows**, under Table Dimensions.
4. Next, go to the **Headers and Footers** tab. Here you can indicate if you would like your table header repeated on every page, column, or frame.
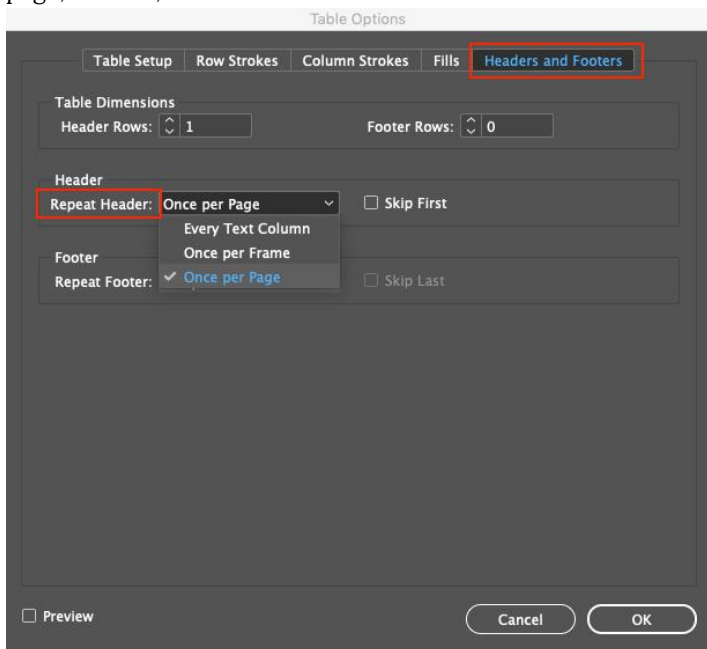


## Technique 7. Tagging Items

Tagging items will help assistive technologies (*e.g.*, *screen readers*) to locate the logical order of the assigned headings. Also, when exporting the document to a PDF, the tagging will automatically be embedded, therefore, the user does not need to apply tagging in Acrobat.

*To quickly tag the items in the file*

*Note:* This does not tag all content correctly. To correctly tag all content, you would have to assign the tags manually (see [To Assign Tags Manually](#)).

1. Structure Panel (**View** > **Structure** > **Show Structure**) keyboard shortcut Alt + Ctrl + 1 (on Window), Cmd + Option + 1 (on Mac)
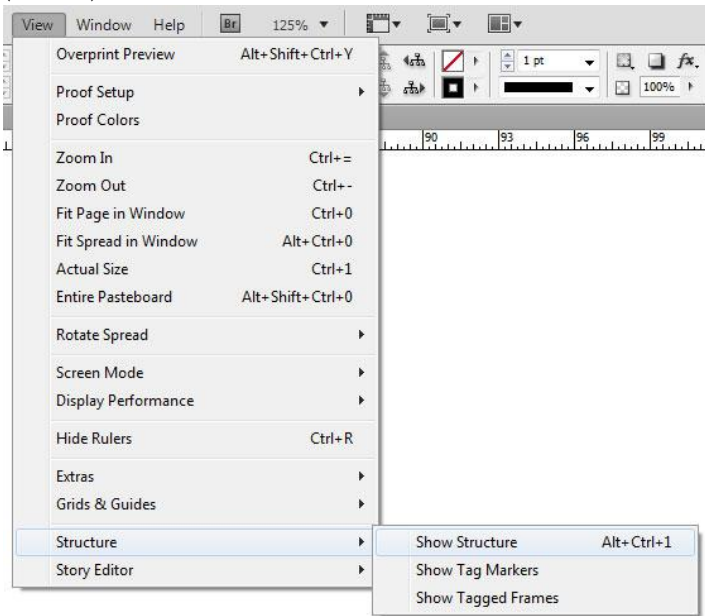


2. In the structure pane click the three line button and choose **Add Untagged Items**
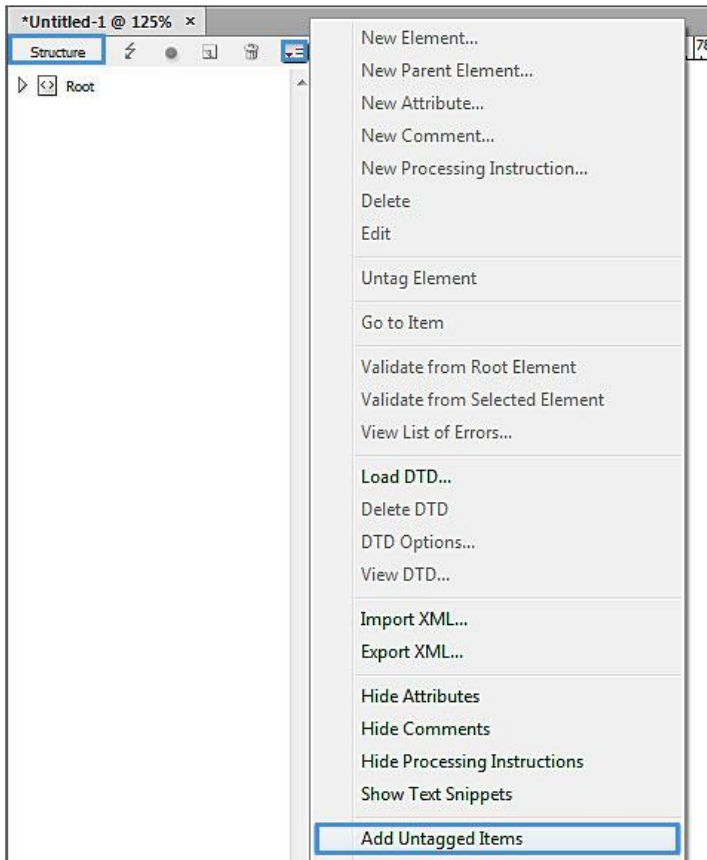
*To view which items have been tagged*

1. **View** > **Structure** > **Show Tagged Frames**
2. The boxes will be coloured according to the tagging in the **Tags Panel**. (**Window** > **Utilities** > **Tags**)

*Note:* You must be in preview mode (*keyboard shortcut* W) to view the tagged items.

## To Assign Tags Manually (and correctly)

1. Tag pane (**Window** > **Utilities** > **Tags**)
2. Click [icon] > **Map Style to Tags...**
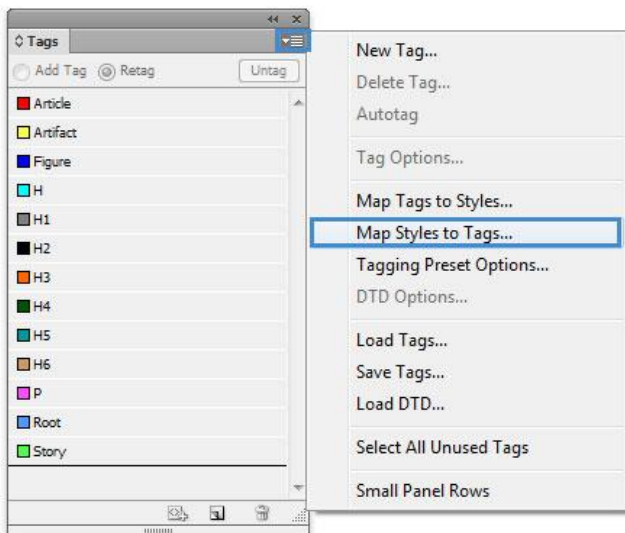
3. Select the style and change **[Not Mapped]** to a **heading title** (*e.g. H, H1, H2 etc.*).
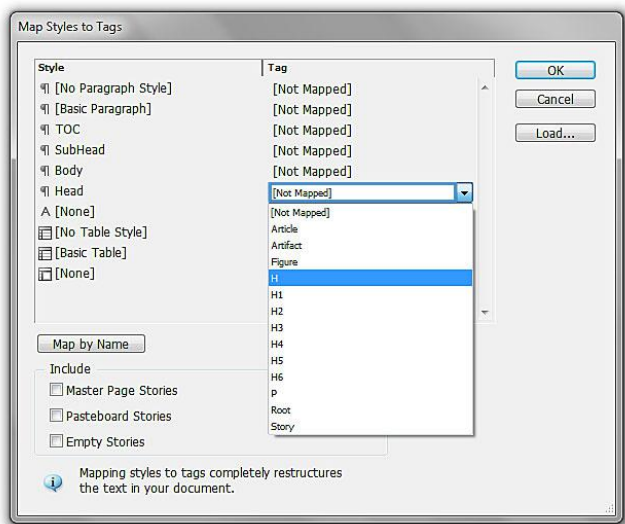
1. Double click on the paragraph style (*e.g.*, "*heading*").
2. In the dialog box **Paragraph Style Options** choose **Export tagging**.
3. Under PDF > **Tag:** select the appropriate heading title (*e.g. style name: heading & Tag: H*).
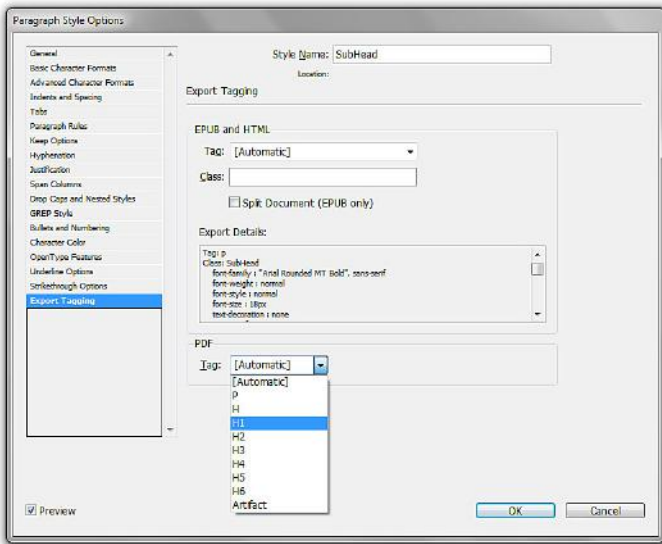


*Note:* To make the reading order and tags easier to manage make thread text boxes. If possible make one text box per page.

## Technique 8. Creating Table of Contents

1. Create a paragraph style (see [Technique 5](#))
2. For all the contents in the table of contents assign the title to the style "TOC"
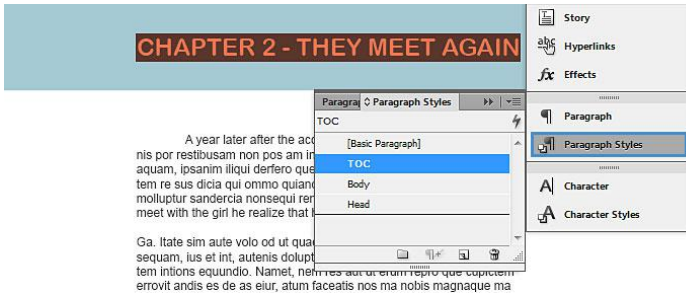
**Optional:** creating another style for the body of the table of content once all the contents are in the style of "TOC"

1. Select **Layout** > **Table of Contents...**
2. Under **Other Styles** select the style
3. Select the **<< Add** button to transfer the style to Include Paragraph Styles:
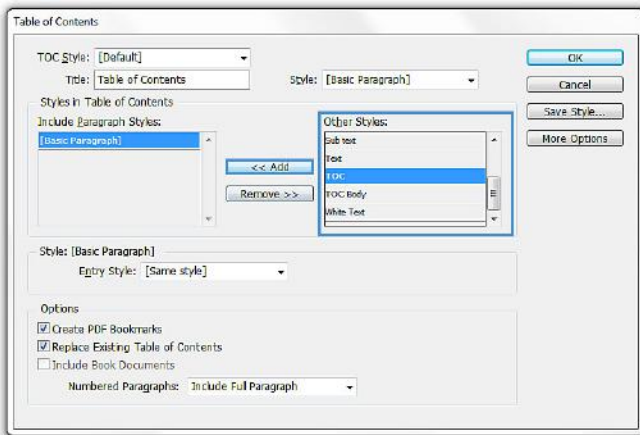


**Optional**: to change the body of the table of contents to a different style than the header of the table of contents. Select **entry style**

and change **same** **style** to another style.
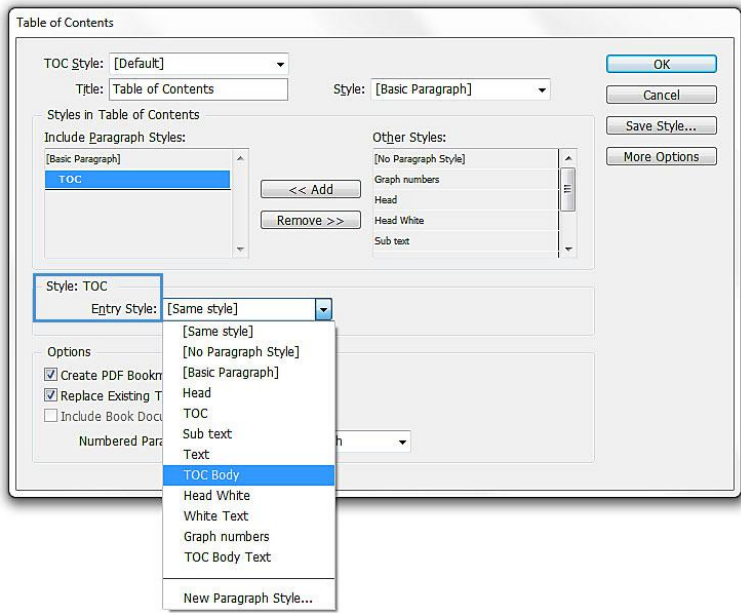


- Drag the cursor to create a large box for the table of content. *Note*: The table of contents will automatically create the title, contents and page numbers.

## 8.1 Columns

Use Columns feature for placing text in columns instead of creating multiple text boxes.

## 8.2 Use Page Numbering

Numbering the pages of your document helps those reading and

editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document.

## 8.3 Naming PDF before exporting

1. **File** > **File Info**
   keyboard shortcut: Ctrl + Alt + Shift + I (on Window), Cmd + Shift + Option + I (on Mac)
2. **Descriptions** > **Document title:** Insert the file title
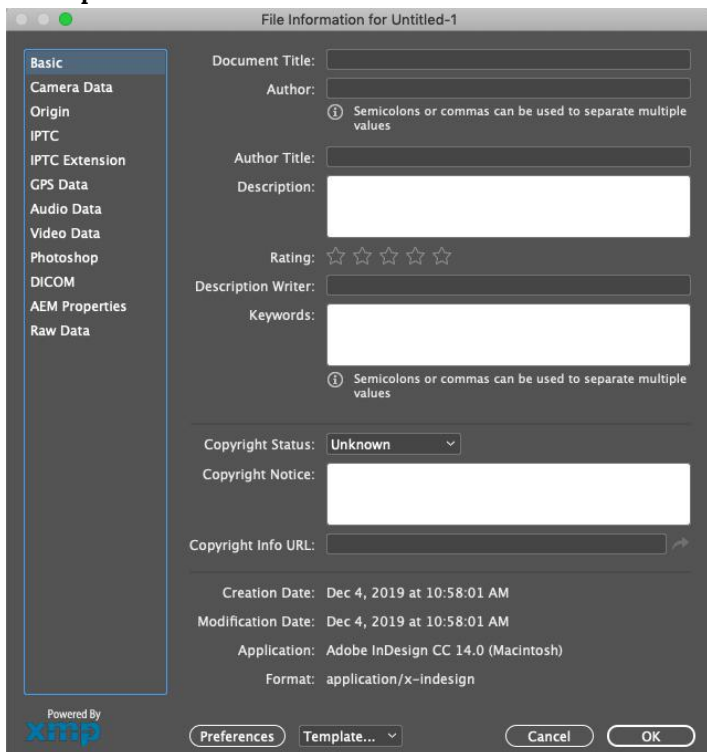


*Note*: You can also fill in the author's name and description.

# Technique 9. Make Content Easier to See

Here are some other things to keep in mind:

## 9.1 Format of Text

When formatting text, especially when the text is likely to printed, try to:

- Use font sizes between 12 and 15 points for body text.
- Use fonts of normal weight, rather than bold or light weight fonts. If you do choose to use bold fonts for emphasis, use them sparingly.
- Use standard fonts with clear spacing and easily recognized upper and lower case characters. Sans serif fonts (e.g., Arial, Verdana) may sometimes be easier to read than serif fonts (e.g., Times New Roman, Garamond).
- Avoid large amounts of text set all in caps, italic or underlined.
- Use normal or expanded character spacing, rather than condensed spacing.
- Avoid animated or scrolling text.

**But can't users just zoom in?** Because printing is an important aspect of many workflows and changing font sizes directly will change documents details such the pagination, the layout of tables, etc., it is best practice to always format text for a reasonable degree of accessibility.

## 9.2 Use Sufficient Contrast

The visual presentation of text and images of text should have a

contrast ration of at least 4.5:1. To help you determine the contrast, here are some examples on a white background:

- Very good contrast (Foreground=black, Background=white, Ratio=21:1)
- Acceptable contrast (Foreground=#767676, Background=white, Ratio=4.54:1)
- Unacceptable contrast (Foreground=#AAAAAA, Background=white, Ratio=2.32:1)

Also, always use a single solid color for a text background rather than a pattern.

In order to determine whether the colors in your document have sufficient contrast, you can consult an online contrast checker, such as:

- WebAIM: Contrast Checker
- Juicy Studio: Luminosity Color Contrast Ratio Analyzer
- Joe Dolson Color Contrast Spectrum Tester
- Joe Dolson Color Contrast Comparison

## 9.3 Avoid Using Color Alone

Color should not be used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In order to spot where color might be the only visual means of conveying information, you can create a screenshot of the document and then view it with online gray-scale converting tools, such as:

- GrayBit v2.0: Grayscale Conversion Contrast Accessibility Tool

> **Editor's note:** GrayBit v2.0 is no longer available. However, multiple tools can be found online: [Google Search: gray-scale conversion tool](#).

## 9.4 Avoid Relying on Sensory Characteristics

The instructions provided for understanding and operating content should not rely solely on sensory characteristics such as the color or shape of content elements. Here are two examples:

- Do not track changes by simply changing the color of text you have edited and noting the color. Instead use [InDesign's "Track Changes" feature](#) to track changes.
- Do not distinguish between images by referring to their appearance (e.g., "the bigger one"). Instead, label each image with a figure number and use that for references.

## 9.5 Avoid Using Images of Text

Before you use an image to control the presentation of text (e.g., to ensure a certain font or color combination), consider whether you can achieve the same result by styling "real text". If this is not possible, as with logos containing stylized text, make sure to provide alternative text for the image following the techniques noted above.

## Technique 10. Make Content Easier to

# Understand

## Write Clearly

By taking the time to design your content in a consistent way, it will be easier to access, navigate and interpret for all users:

- Whenever possible, write clearly with short sentences.
- Introduce acronyms and spell out abbreviations.
- Avoid making the document too "busy" by using lots of whitespace and by avoiding too many different colors, fonts and images.
- If content is repeated on multiple pages within a document or within a set of documents (e.g., headings, footings, etc.), it should occur consistently each time it is repeated.

## Accessibility Checker

To check for accessibility, first, the InDesign file must be exported to a PDF and viewed in Acrobat Pro.

1. **File** > **Export** (keyboard shortcut: *Windows*: Ctrl + E; *Mac*: Cmd + E)
2. **Save as:** PDF (Interactive or Print)
3. Select **Save**
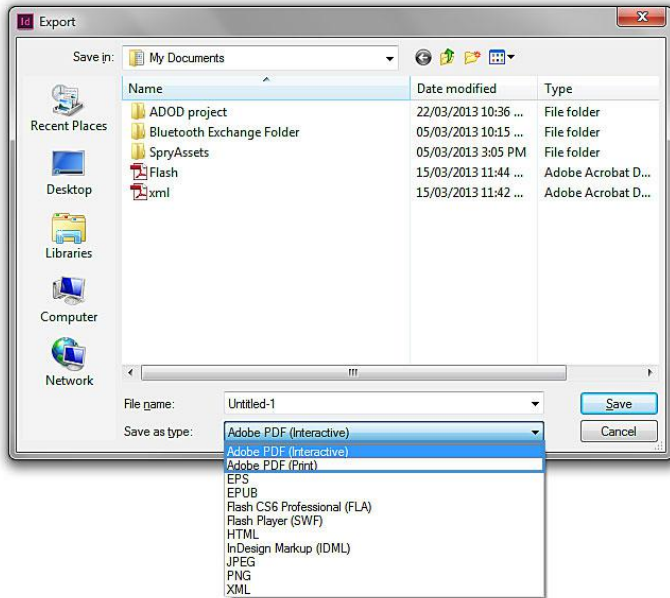
## To evaluate PDF accessibility in Adobe Acrobat Professional

1. Go to menu item: **Advanced > Accessibility > Full Check…**
2. In the **Full Check** dialog, select all the checking option
3. Select the **Start Checking** button

**Editor's note:** For detailed instructions, see our section on [how to check accessibility using Adobe Acrobat Professional](#).

Using the Acrobat 10 Action Wizard

In Acrobat 10 Pro, there is a special accessibility Action Wizard for InDesign CS6 where the user can follow to make the file accessible.

- To Follow the Action Wizard in Acrobat 10: select **Tools** > **Action Wizard> InDesign (CS6) Accessibility Touch up**.

**Editor's note:** At the time of testing (December 2019), we were not able to download and use the Acrobat 10 Action Wizard. If you do already have the required application, see [how to use the Action Wizard for InDesign](#) for more details.

## Accessibility Help

If you are interested in what features are provided to make using InDesign more accessible to users, documentation is provided in the Help button or the search bar.

- [Adobe InDesign Accessibility](#)
- [Creating accessible PDF documents with Adobe InDesign CS6 (PDF)](#)

## References and Resources

- [Adobe InDesign Tutorials](#)
- [Adobe InDesign Accessibility](#)
- [Adobe InDesign CS6 tutorials](#)

- [Adobe InDesign: Export to PDF](#)
- [Creating Accessible PDFs from Adobe InDesign (University of Washington)](#)

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# Adobe Acrobat 11 Pro and DC

## Usage Notes

At the time of testing (December 2019), Acrobat 11 Pro and Acrobat Pro DC enables the production of accessible digital documents. Both Acrobat 11 Pro and DC include an accessibility checking feature.

*Note:* While PDF accessibility has improved over the years, accessibility support for PDF by authoring tools, viewers, and assistive technologies (e.g., screen readers) is not as widespread as for HTML documents.

**We recommend considering HTML instead of or in addition to PDF where appropriate.**

## Should I use ADOD or WCAG 2.0?

These techniques can help you to use Acrobat 11 Pro to create documents that are:

- **Intended to be used by people** (i.e. not computer code),
- **Text-based** (i.e. not simply images, although they may contain images),
- **Fully printable** (i.e. where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e. without hyperlinks to other documents, unlike web content), and

- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.)

*Note:* If you are creating forms, web pages, applications, or other dynamic and/or interactive content, these you should also consult the W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0). The WCAG working group has provided PDF Techniques for WCAG 2.0.

## File Formats

The default file format for Acrobat 11 Pro and DC is **Adobe Portable Document Format (PDF)**. In addition, Acrobat 11 Pro offers several other word processor and web format saving options. These have not been checked for accessibility.

## Document Conventions

We have tried to write these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or (2) Shift+F10.
- **\*Drag:** Unfortunately, there is no keyboard alternative for several operations in Acrobat 11 Pro that require dragging.

# Disclaimer and Testing Details:

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Adobe Acrobat 11 Pro (ver.11.0, Windows 7, April. 2013) and Adobe Acrobat Pro DC (version 2019.021.20056, macOS Mojave version 10.14.6, December 2019).
- Unfortunately, tasks completed in [Technique 3](), [Technique 4](), and [Technique 5]() cannot be undone. It is recommended that you save your PDF document often under different names, especially before you make significant changes.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results

## Technique 1. Use Accessible Source Documents

In the Adobe Acrobat 11 Pro workflow, all PDF documents start with a source document created in an office document authoring application, such as Microsoft Word or OpenOffice.org Writer. Because source documents provide the starting-point for the PDF documents, accessibility is very important.

*To create an accessible source document*

1. Create a new document in the authoring application (from the

default blank template or from one of the pre-packaged templates).

2. Ensure that you follow the **ADOD Authoring Techniques** provided for the authoring application (an updated version available at [Understanding Document Accessibility](#)).

3. When you are finished, you should also check the accessibility of the document (see "Accessibility Checking" in the Authoring Techniques for the authoring application).

Once you have completed the above steps, you are ready to convert your document to PDF using Adobe Acrobat 11 or Acrobat DC.

*To convert single source documents to PDF*

1. Go to the menu item: **File > Create > PDF From file…**
2. Locate and select your source document and select the **Open** button, Acrobat will then proceed to convert the file.

A batch conversion process is also available from the menu item: **File > Create PDF > Batch Create Multiple Files**.

## Scanned Content

If you created a PDF from a scanned document, then it will be inherently inaccessible to screen readers and other assistive technologies. The document will be less useful because graphic representations of text cannot be selected, edited or searched.

In this case, it is necessary that you convert the scanned images of text to searchable content using Acrobat's **optical character recognition (OCR)** feature before addressing the accessibility features of the document.

# Technique 2. Check Accessibility

> ### "Make Accessible Action Wizard
>
> The "Make Accessible" Action Wizard can help you create accessible PDFs by leading you through the techniques in this guide (e.g., setting alternative text, setting document properties, etc.).

You can complete the wizard in its entirety by pressing **Start** or you can follow the the instructions below:

1. Select **Add Document Description**

## Make Accessible

Files to be processed:

SampleDocument.pdf

Add Files...

**Start**

### 1. Prepare

Set a title and ensure it displays in the window title bar.

Add Document Description

Set Open Options

Recognize Text using OCR

Detect Form Fields

Set Tab Order Property

### 2. Set Language & Tags
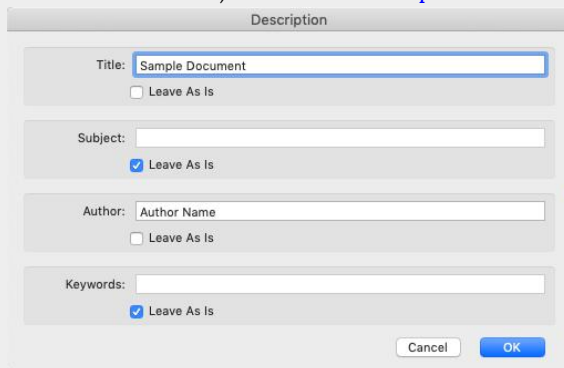
Set Reading Language

Autotag Document

Set Alternate Text

### 3. Run Accessibility Check

2. Fill in the **Title** (author, subject and keywords can also be filled in). See also [Technique 6](#).



3. Select **Set Open Options**
4. Select **Set Tabs Order Property**
5. Select **Set Reading Language**
6. In the drop down menu, select the language for the file). See also [Technique 6](#).



7. Select **Add Tags to Document**
   *Note*: This will automatically add tags to the file. Unfortunately, this process sometimes misinterprets the structure and reading order of complex page elements. Therefore, you should

still manually check the tags (see [Technique 3](#)).

8. Select **Set Alternative Text**. See also [Technique 4](#).

   The wizard automatically searches for" figures" in the file. You must then fill in the alternate text in the pop up box.

   *Note:* The wizard might not tag all the images as figures, so check if tags are correct.
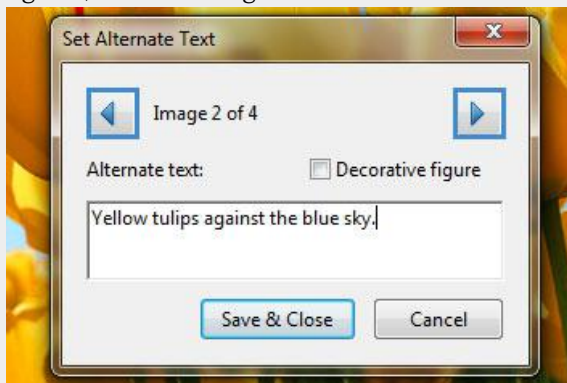


9. Select **Run Accessibility Full Check**. See also [Technique 2](#).

10. **Recognize Text using OCR**.

11. **Detect Form Fields**. This is only required if the file is intended to be a fillable form.

   See also [Creating Accessible PDF Documents in Adobe Acrobat](#) by the National Center on Disability and Access to Education for a video walkthrough and handout on the "Make Accessible" Wizard.

The most basic requirement for a PDF document to be accessible is for it to be **"tagged"** with hidden labels ("tags") that describe the

structure of the document (e.g. that text should be interpreted as a header, paragraph, table cell, etc.). Screen readers can use these tags to convey the document's information effectively to people with visual disabilities.

The other requirements for a PDF document to be accessible (e.g. alternate text, logical reading order, etc.) can only all apply once the document is tagged.

*Caution!*: The "Quick Check" feature is **not recommended** because it misses some important accessibility issues. Always perform a "Full Check" instead.

## To perform a "Full Check"

*Note*: If "Accessibility" is not visible under tools, go to menu item: **View > Tools > Accessibility**

1. Select **Tools** > Accessibility > Full Check Up
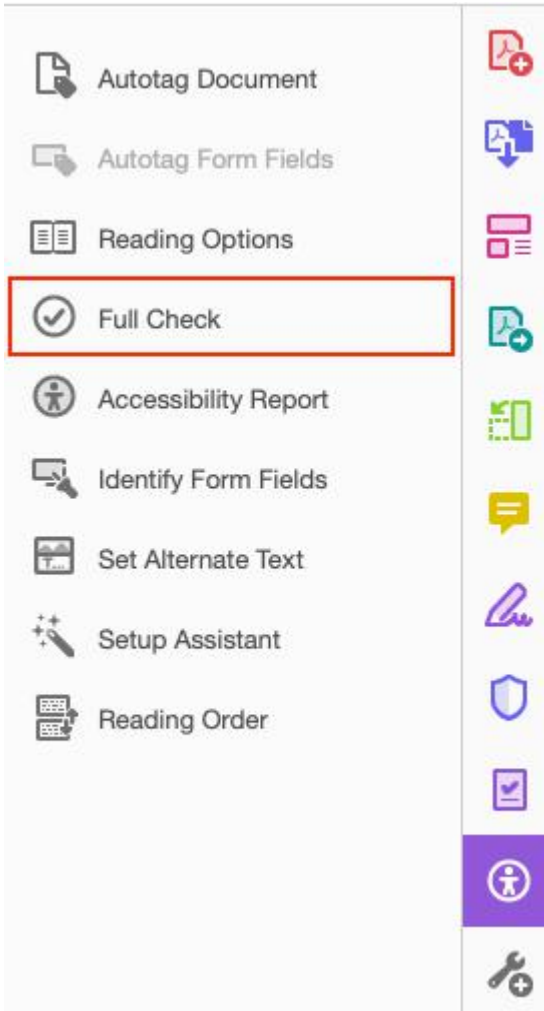
2. Once the file is fully run through the checker, a panel will show which parts of the files are correct and which parts need to be fixed.

## Accessibility

### Accessibility Checker ✕

▼ **Document (2 issues)**

✔ Accessibility permission flag - Passed

✔ Image-only PDF - Passed

✔ Tagged PDF - Passed

❓ **Logical Reading Order - Needs manual check**

✔ Primary language - Passed

✔ Title - Passed

✔ Bookmarks - Passed

❓ **Color contrast - Needs manual check**

❯ Page Content

❯ Forms

▼ Alternate Text

✔ Figures alternate text - Passed

✔ Nested alternate text - Passed

✔ Associated with content - Passed

✔ Hides annotation - Passed

✔ Other elements alternate text - Passed

▼ Tables

✔ Rows - Passed

✔ TH and TD - Passed

✔ Headers - Passed

✔ Regularity - Passed

If you have a large document, it may be more efficient to run a full check one page or a page range at a time.

## Technique 3. Add and Edit Tags

*Caution!*: Actions taken using the TouchUp Reading Order tool and Order Panel cannot be undone and in some cases Acrobat may misinterpret your intentions. Remember to save your work frequently! If you frequently create PDF files you might consider using one of these [accessible PDF support tools](#).

If tags are missing, then they must be added. When tags are present, they should still be checked for correctness and edited as needed.

## Touch Up Reading Order Tags

The **TouchUp Reading Order** dialog box offers some basic document tag options. Acrobat's Help text describes the tags as follows:

**Text**

Tags the selection as text.

**Figure**

Tags the selection as a figure. *Text contained within a figure tag is defined as part of the image and is not read by screen readers, though alternate text defined for the figure is read out.Note: An*

effective way of handling very complex text constructs (e.g. flow charts) is to group it all as a figure and then provide a unified alt text description for the entire group.

**Form Field**

Tags the selection as a form field.

**Figure/Caption**

Tags a selected figure and caption as a single tag. Any text contained in the tag is defined as a caption. Useful for tagging photos and captions and preventing caption text from being incorrectly added to adjacent text blocks. *Note:* Unless the caption actually describes the image, the figures will still require alternate text.

**Heading 1, Heading 2, Heading 3**

Tags the selection as a first, second, third, fourth, fifth, or sixth level heading tag. You can convert heading tags to bookmarks to help users navigate the document.

**Table**

Tags the selection as a table. When this selection is made, Acrobat analyzes the selection to determine the location of headings, columns, and rows.
*Note:* Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

**Cell**

Tags the selection as a table or header cell. Use this option to merge cells that are incorrectly split.
*Note:* Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

**Formula**

Tags the selection as a formula. *Note:* Because speech software may handle formula tags differently from normal text, you should still add alternate text.

**Background**

> Tags the selection as a background element, or artifact, removing the item from the tag tree so that it does not appear in the reflowed document and is not read by screen readers.

# Additional Tags

Not all tags are available using the TouchUp Reading order dialog window. Additional tags can be accessed from the Tags pane. See the **Editing tags using the Tags pane** section for more information.

## *Document Section Tags*

There are additional tags that help define semantic and structural file elements in more detail. The Adobe Acrobat website categorizes and defines all standard tags as follows (some appear in the section above):

**Container elements**

> Container elements are the highest level of element and provide hierarchical grouping for other block-level elements.

**Document**

> Document element. The root element of a document's tag tree.

**Part**

> Part element. A large division of a document; may group smaller units of content together, such as division elements, article elements, or section elements.

**Div**

> Division element. A generic block-level element or group of block-level elements.

**Art**

> Article element. A self-contained body of text considered to be a single narrative.

**Sect**

> Section element. A general container element type, comparable to Division (DIV Class="Sect") in HTML, which is usually a component of a part element or an article element.

## Heading and Paragraph Elements

Heading and paragraph elements are paragraph-like, block-level elements that include specific level heading and generic paragraph (P) tags. A heading (H) element should appear as the first child of any higher-level division. Six levels of headings (H1 to H6) are available for applications that don't hierarchically nest sections (See TouchUp Reading Order Tags section above for more).

## Label and List Elements

Label and list elements are block-level elements used for structuring lists.

**L**

> List element. Any sequence of items of similar meaning or other relevance; immediate child elements should be list item elements.

**LI**

> List item element. Any one member of a list; may have a label element (optional) and a list body element (required) as a child.

**LBL**

> Label element. A bullet, name, or number that identifies and

distinguishes an element from others in the same list.

**LBody**

    List item body element. The descriptive content of a list item.

## *Special Text Elements*

Special text elements identify text that isn't used as a generic paragraph (P).

**BlockQuote**

    Block quote element. One or more paragraphs of text attributed to someone other than the author of the immediate surrounding text.

**Caption**

    Caption element. A brief portion of text that describes a table or a figure.

**Index**

    Index element. A sequence of entries that contain identifying text and reference elements that point out the occurrence of the text in the main body of the document.

**TOC**

    Table of contents element. An element that contains a structured list of items and labels identifying those items; has its own discrete hierarchy.

**TOCI**

    Table of contents item element. An item contained in a list associated with a table of contents element.

## Table Elements

Table elements are special elements for structuring tables.

**Table**

> Table element. A two-dimensional arrangement of data or text cells that contains table row elements as child elements and may have a caption element as its first or last child element.

**TR**

> Table row element. One row of headings or data in a table; may contain table header cell elements and table data cell elements.

**TD**

> Table data cell element. A table cell that contains non-header data.

**TH**

> Table header cell element. A table cell that contains header text or data describing one or more rows or columns of a table.

## Inline-Level Elements

Inline-level elements identify a span of text that has specific formatting or behavior. They are differentiated from block-level elements. Inline-level elements may be contained in or contain block-level elements.

**BibEntry**

> Bibliography entry element. A description of where some cited information may be found.

**Quote**

> Quote entry element. An inline portion of text that is attributed to someone other than the author of the text surrounding it; different from a block quote, which is a whole paragraph or multiple paragraphs, as opposed to inline text.

**Span**

> Span entry element. Any inline segment of text; commonly
> used to delimit text that is associated with a set of styling
> properties.

## Special Inline-Level Elements

Similar to inline-level elements, special inline-level elements
describe an inline portion of text that has special formatting or
behavior.

**Code**

> Code entry element. Computer program text embedded within
> a document.

**Figure**

> Figure entry element. A graphic or graphic representation
> associated with text.

**Form**

> Form entry element. A PDF form annotation that can be or has
> been filled out.

**Formula**

> Formula entry element. A mathematical formula.

**Link**

> Link entry element. A hyperlink that is embedded within a
> document. The target can be in the same document, in another
> PDF document, or on a website.

**Note**

> Note entry element. Explanatory text or documentation, such
> as a footnote or endnote, that is referred to in the main body
> of text.

**References**

Reference entry element. A citation to text or data that is found elsewhere in the document.

## To add tags automatically

*Note:* The automatic tagging feature may be sufficient on simple layouts, but it sometimes misinterprets the structure and reading order of complex page elements (e.g. closely spaced columns, irregular text alignment, and tables without borders.). Therefore, use the automatic tagging feature as a starting point, and always manually check and edit the tags as explained below.

1. Go to menu item: **Tools > Accessibility > Add Tags To Document**
   *To Show the hidden "Accessibility" drop down menu Go to menu item: **View > Tools > Accessibility**
   *Note:* This command removes any tags that were in the document before the command was run. If any potential problems were encountered, an Add Tags Report appears in the navigation pane.

## To add/edit tags manually

There are two ways of adding and editing tags in Adobe Acrobat. You can either do it through the TouchUp Reading Order dialog box, or using the Tags navigation pane.

*Note:* Some tag types are not available through the TouchUp Reading Order dialog box. For documents with complex layouts and elements, use it together with the Tags pane method described below.

## Adding/Editing tags using TouchUp Reading Order

1. Go to menu item: **Tools > Accessibility > TouchUp Reading Order…**
   In most cases, it will help to have the four checkboxes checked (**Show page content groups**, **Show table cells**, **Display like elements in a single block**, **Show tables and figures**)

2. Using the **TouchUp Reading Order** tool, [drag*](#) within the document pane to select a region of the page that contains one type of content (e.g. a text block)
   *Note*: If you drag* over part of an already tagged element, the element is sometimes split up. This is helpful when splitting larger elements to ensure correct reading over of sub-elements.

3. To add more page content to the current selection, **Shift + drag***

4. To remove page content from the current selection, **Ctrl + drag***

5. Select the appropriate button in the **TouchUp Reading Order** dialog to specify the tag type, a box should now encapsulate the element ([the tags are explained here](#)).

# Reading Order

Draw a rectangle around the content then click one of the buttons below:

| Text/Paragraph | | Figure |
|---|---|---|
| Form Field | | Figure/Caption |
| Heading 1 | Heading 4 | Table |
| Heading 2 | Heading 5 | Cell |
| Heading 3 | Heading 6 | Formula |
| Reference | Note | Background/Artifact |

Table Editor

☑ Show page content groups ■
  ◉ Page content order
  ○ Structure types
☑ Show table cells ■
☑ Display like elements in a single block
☑ Show tables and figures ■

| Clear Page Structure... | Show Order Panel |
|---|---|
| Help | Close |
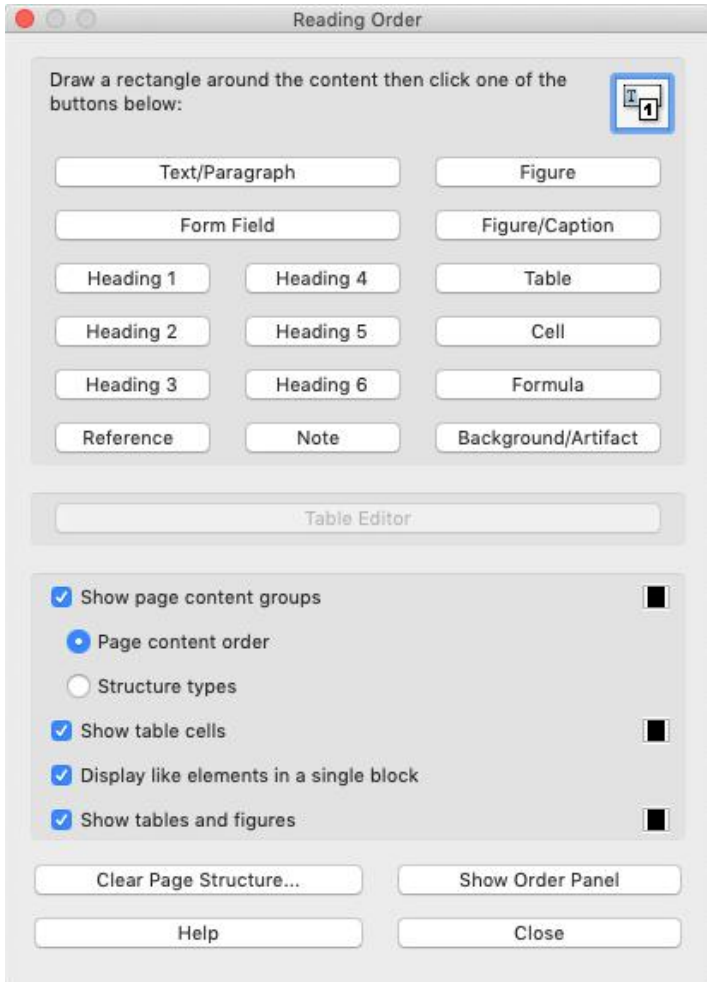
*Tips for Tagging*

- On the "Touch Up Reading Order" dialog, make sure to select the **Show page content groups** checkbox and the **Structure types** radio button. This will display the type of structure for each tag, which will help you to spot mis-tagged content.
- A good place to start is tagging "Background" content, since this will reduce the number of tags to deal with. Background content should include:

  - empty boxes,
  - visible or invisible text box borders (especially in busy areas where they overlap with text),
  - visuals that are decorative or redundant (e.g., backgrounds, illustrations), whose content is described adequately in the text .

- If you are having difficulty tagging complex content (e.g., a complex table), consider either:

  - Editing the source document to simplify it, or
  - Selecting the complex content and tagging it as a figure for which you must then add alternative text that properly conveys all of the information in the new figure

## Editing tags using the Tags pane

1. Go to menu item: **View > Show/Hide > Navigation Panes > Tags...**
   *Note*: For best results, use 'Add Tags to Document' first. You can also create a new tag using the TouchUp Reading Order dialog box and then edit it in the Tags Pane.
2. To change a tag, locate it in the structure tree.
3. Right-click* on the tag, and select **Properties**. From the drop-down menu next to tag type, select the tag you would like to use.
4. Alternatively, you can edit tags by clicking on the tag name drop-down menu, and then typing the appropriate tag name (see list of tags above).

# Technique 4. Provide Alternative Text

When using images, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If the image is purely decorative, mark it as background.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank (e.g. Background images should generally have no alt text, other decorative images should only have alt text if they form a crucial part of the content, message, and purpose of the document)
- If the image contains meaningful text, ensure all of the text is replicated
- For logos, the alternative text should be the organization's name
- For groups of logos, one logo can be chosen to represent the group
- Sometimes text is included as part of a logo or footer image (e.g. the image might contain a phone number), this text should be set as the alternative text of the image
- Alternative text should be fairly short, usually a

sentence or less and rarely more than two
sentences
- If more description is required (e.g. for a chart
or graph), provide a short description in the
alternative text (e.g. a summary of the trend) and
more detail in the long description, see below
- Test by having others review the document with
the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text
alternatives (see above) are insufficient to answer
the question "what information is the image
conveying?"
- In some situations, the information being
conveyed will be how an image looks (e.g. an
artwork, architectural detail, etc.). In these cases,
try to describe the image without making too
many of your own assumptions.
- One approach is to imagine you are describing
the image to a person over the phone
- Ensure that you still provide concise alternative
text to help readers decide if they are interested
in the longer description

> - Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, the images should be marked as "Background" and you do not have to provide alternate text within the image.

## *To add alternative text to images*

1. **Tools** > **Accessibility** > **Set Alternate Text**
   (If "Accessibility" is not listed, it can be opened from menu item: **View > Tools > Accessibility**
2. Select **Ok** the Adobe Acrobat pop up box
3. Type in the description in the Set Alternative Text pop up box
4. Select the right arrow to set alternative text on the next figure
5. When complete select **Save & Close**

The dialog box will automatically select all the objects that are tags as figure.

## *To add alternative text to links*

1. Select the text or object for which you want to create a link.
2. Right-click* the selection, and choose Create Link from the context menu.
3. In the Create Link dialog box, select the appropriate options, and then follow the onscreen instructions to specify a URL, page view, or file as the link target.

# Technique 5. Set a Logical Reading Order

Setting up reading order will set up the way the device will read the file out loud to view and change reading order:

1.  Select the **Order Pane** (**View** > **Show/Hide** > **Navigation Panes** > **Order**)

    

2.  Once the order pane is selected the file will show numbers per page showing the reading order.

3.  If the reading order is incorrect, select the following information from the pane and move the information bellow or above to make the reading order correct.

## *To test the reading order*

Sometimes it may not be clear by looking at content, what would be the most logical aural reading order. In these cases, it is recommended to preview the reading order.

> *Caution!*: The "Read Out Loud" feature is **not recommended** for checking the aural order because it will provide inaccurate results.

One method for testing the reading order of your document is called "reflowing", which temporarily presents it as a single column that is the width of the document pane. Only readable text appears in the reflow view.

If the tagged PDF does not reflow the way you want, it means that the content order or reading order of the PDF contains inconsistencies. If this is the case, in addition to correcting the reading order, it may also be helpful to edit the document tags.

1. Go to menu item: **View > Zoom > Reflow**
2. To return to regular view, go to menu item: **View > Zoom > Reflow**

Another way to test the aural accessibility of a document is to attempt to access the document with the screen readers that your readers will use (e.g., NVDA or JAWS on Windows, VoiceOver on Mac OS).

# Technique 6. Set Document Properties

It is important to set up the PDF correctly in order for assistive technologies (e.g., screen readers) to be able to present your document accurately.

1. **File** > **Properties**
   *keyboard shortcut*: Ctrl + D (on windows), Cmd + D (on Mac)
2. Under **Descriptions** tab fill in the title and author. (Subject and Keywords can also be filled in)
3. Under **Initial Views** change the following

   - **Layout and Magnification**
   - Navigation Tab: **Bookmarks Panel and pages**
   - Magnification: **Fit Page**
   - Open to Page: **1**
   - **Window Options**
   - Check **Center window on Screen**
   - **Show** > **Document Title**

4. Under the **Advanced** tab select **Language** and change to the preferred language. If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.

5.  Select **OK**

## *To apply a language directly to selected element*

1.  Go to menu item: **View > Navigation Panels > Tags**
2.  In the **Tags** tab, select the element
3.  Right-click\* the element and select **Properties...**
4.  In the **Content** tab, select the language from the **Language** drop-down list
5.  Select **Close**

## *To set the page structure to document structure*

1.  Select all the pages (*ctrl + A or cmd + A*) in the page

**Thumbnails Panel**

2.  Select **Page Properties**



3.  Under **Tab Order** select **Use Document Structure.**

4. Select **OK.**

## Technique 7. Adjust Security Settings

It is possible to specify that no part of an accessible PDF is to be copied, printed, extracted, commented on, or edited. This can be accomplished by encrypting the document with password security. However, this could interfere with a screen reader's ability to read the document, because screen readers must be able to copy or extract the document's text in order to convert it to speech. In Acrobat 11 Pro, it is possible to maintain high-encryption-level security while at the same time providing the necessary access to assistive technologies.

*To allow assistive technologies access to content*

1. Go to menu item: **File >Properties > Security.**
2. In the **Security Method** drop down menu select **Password Security.**
3. In the **Password Security – Settings** dialog, under **Permissions**, select **Restrict editing and printing of the document.**
4. For low-encryption-level security, select **Enable copying of text, images, and other content.**
5. For high-encryption-level security, select **Enable text access for screen reader devices for the visually impaired** (this overrides the document's security settings only for the purpose of giving assistive software, such as screen readers, access to the content).
6. Select **OK.**

# Technique 8. Set Bookmarks

A bookmark is a type of link with representative text in the **Bookmarks** panel in the navigation pane. Each bookmark goes to a different view or page in the document. In Acrobat 11 Pro, you can use bookmarks to mark a place in the PDF to which you want to return, or to jump to a destination in the PDF, another document, or a web page. There are several ways to create bookmarks.

*Note*: An Acrobat user can only add bookmarks to a document only if the security settings allow it.

## *To add a bookmark manually*

1. **Bookmark** > **New Bookmark**



2. Insert the title of the content

3. Scroll to the page that the bookmark is intended to link.
4. **\*Right click** the bookmark title > **Set Destination**



## *To add bookmarks automatically*

Bookmarks can also be generated automatically from various types of structures that will be in your document if you have tagged it properly:

1. **Bookmark** > **New Bookmark from Structure** (in the drop down menu in the bookmark pane).
2. Select the structure to generate bookmarks from.

# Accessibility Support Tools

- **axesPDF**: A plug-in for Microsoft Word 2007/2010 that makes it easier to create accessible PDFs (free public beta program);
- **CommonLook Office**: A plug-in for Microsoft Word 2007/2010 and PowerPoint 2007/010 that makes it easier to create accessible PDFs.
- **CommonLook PDF**: A plug-in for Adobe Acrobat that helps identify, report and correct accessibility problems.
- **MadeToTag**: A plug-in for for Adobe InDesign that makes it easier to create accessible PDF from InDesign documents.
- **PDFGoHTML**: A free Adobe Acrobat plug-in that converts tagged PDF into HTML, which can be useful in debugging tagging structures.

# References and Resources

- Adobe Acrobat XI Pro Accessibility Guide [PDF]
- Using the Acrobat X Pro Accessibility Checker [PDF]
- PDF Techniques for WCAG 2.0
- WebAIM PDF Accessibility: Acrobat and Accessibility
- GAWDS Writing Better Alt Text
- Ryerson University: Adobe Acrobat Accessibility Tipsheet (PDF)
- Create and verify PDF accessibility (Acrobat Pro)
- PDF Accessibility Training (Video Tutorials) – This PDF Accessibility training series was provided to Microsoft employees on creating accessible PDF documents. Use these videos, along with documentation from https://adobe.com/accessibility to learn to create, remediate, and check for accessibility issues. To test your knowledge, use the PDF sample documents at https://aka.ms/PDFSamples.
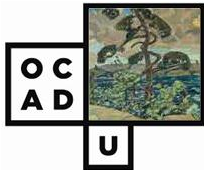
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# Adobe Acrobat 10 Pro

## Usage Notes

At the time of testing (March 2013), Acrobat 10 Pro (Windows) enables the production of accessible digital documents. Acrobat 10 Pro includes an accessibility checking feature.

*Note:* While PDF accessibility has improved over the years, accessibility support for PDF by authoring tools, viewers, and assistive technologies (e.g., screen readers) is not as widespread as for HTML documents. **We recommend considering HTML instead of or in addition to PDF where appropriate.**

## Should I use ADOD or WCAG 2.0?

These techniques can help you to use Acrobat 10 Pro to create documents that are:

- **Intended to be used by people** (i.e. not computer code),
- **Text-based** (i.e., not simply images, although they may contain images),
- **Fully printable** (i.e., where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e., without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

*Note:* If you are creating forms, web pages, applications, or other

dynamic and/or interactive content, these you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](). The WCAG working group has provided [PDF Techniques for WCAG 2.0]().

## File Formats

The default file format for Acrobat 10 Pro is **Adobe Portable Document Format (PDF)**. In addition, Acrobat 10 Pro offers several other word processor and web format saving options. These have not been checked for accessibility.

## Document Conventions

We have tried to write these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or (2) Shift+F10.
- **\*Drag:** Unfortunately, there is no keyboard alternative for several operations that require dragging.

# Disclaimer and Testing Details:

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Adobe Acrobat 10 Pro (ver.10.0, Windows 7, Mar. 2011) while creating a PDF document.
- Tasks completed in [Technique 3](#), [Technique 4](#), and [Technique 5](#) cannot be undone. It is recommended that you save your PDF document before and after you make significant changes.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results.
- If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca)

## Technique 1. Use Accessible Source Documents

In the Adobe Acrobat 10 Pro workflow, all PDF documents start with a source document created in an office document authoring application, such as Microsoft Word or OpenOffice.org Writer. Because source documents provide the starting-point for the PDF documents, accessibility is very important.

*To create an accessible source document*

1. Create a new document in the authoring application (from the default blank template or from one of the prepackaged

templates).

2. Ensure that you follow the **ADOD Authoring Techniques** provided for the authoring application (available at: [How to Use This Resource](#)).

3. When you are finished, you should also check the accessibility of the document (see [Accessibility Checking](#) in the Authoring Techniques for the authoring application).

Once you have completed the above steps, you are ready to convert your document to PDF using Adobe Acrobat 10.

### *To convert single source documents to PDF*

1. Go to the menu item: **File > Create PDF > From file...**
2. Locate and select your source document and select the **Open** button, Acrobat will then proceed to convert the file.

*Note:* A batch conversion process is also available from the menu item: **File > Create PDF > Batch Create Multiple Files**

## Scanned Content

If you created a PDF from a scanned document, then it will be inherently inaccessible to screen readers and other assistive technologies. The document will be less useful because graphic representations of text cannot be selected, edited or searched. In this case, it is necessary that you convert the scanned images of text to searchable content using Acrobat's **optical character recognition (OCR)** feature before addressing the accessibility features of the document.

# Technique 2. Check Accessibility

The most basic requirement for a PDF document to be accessible is for it to be **"tagged"** with hidden labels ("tags") that describes the structure of the document (e.g. that text should be interpreted as a header, paragraph, table cell, etc.). Screen readers can then use these tags to convey the document's information effectively to people with visual disabilities. The other requirements for a PDF document to be accessible (e.g. alternate text, logical reading order, etc.) can only all apply once the document is tagged.

> *Caution!:* The "Quick Check" feature is **not recommended** because it misses some important accessibility issues. Always perform a "Full Check" instead.

## *To perform a "Full Check"*

*Note:* If "Accessibility" is not visible under tools, go to menu item: **View > Tools > Accessibility**

1. Select **Tools** > Accessibility > Full Check Up

Running a Wizard Action Full Check when the file is first created would be ideal. This allows you to fix a few mistakes before the check up.
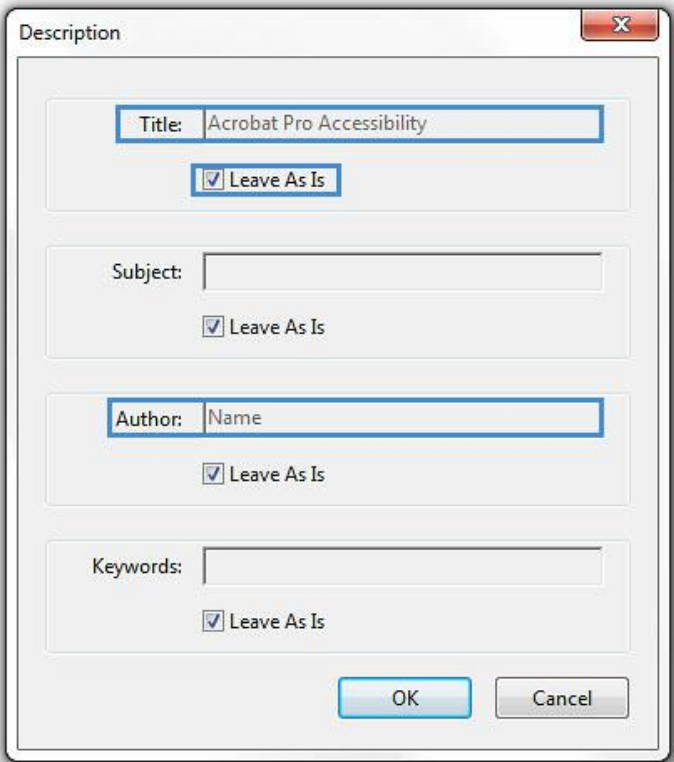
1.  Select **Tools** > **Action Wizard** > **Create Accessible PDF's** *Note*: If the PDF file was created from InDesign, then select "InDesign CS6 Accessibility Touch up"
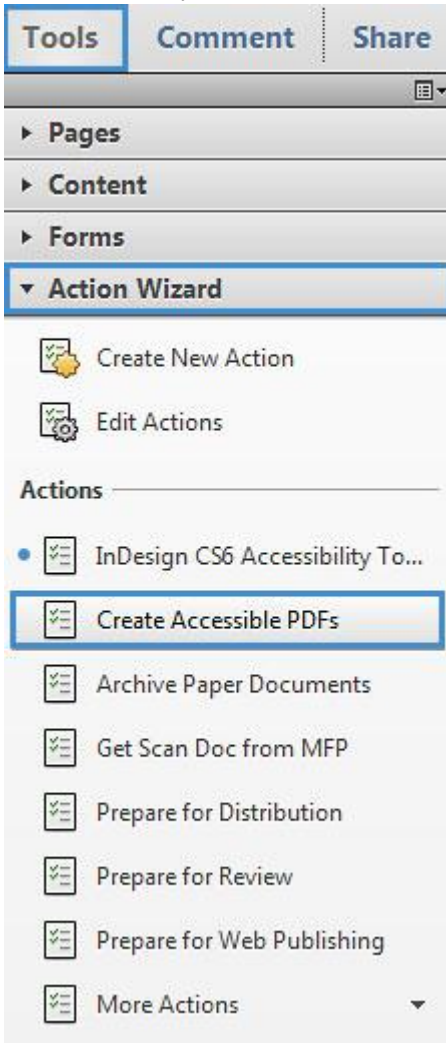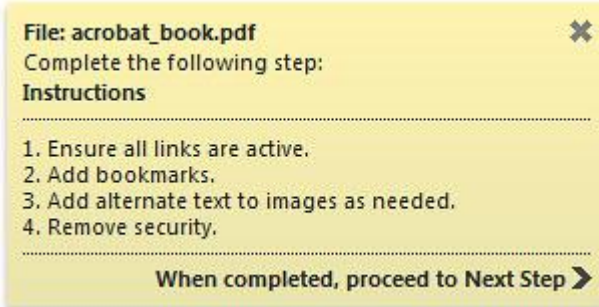


2.  Select "**5 Accessibility Check (Full)"** (in the Action: Create Accessible PDFs)
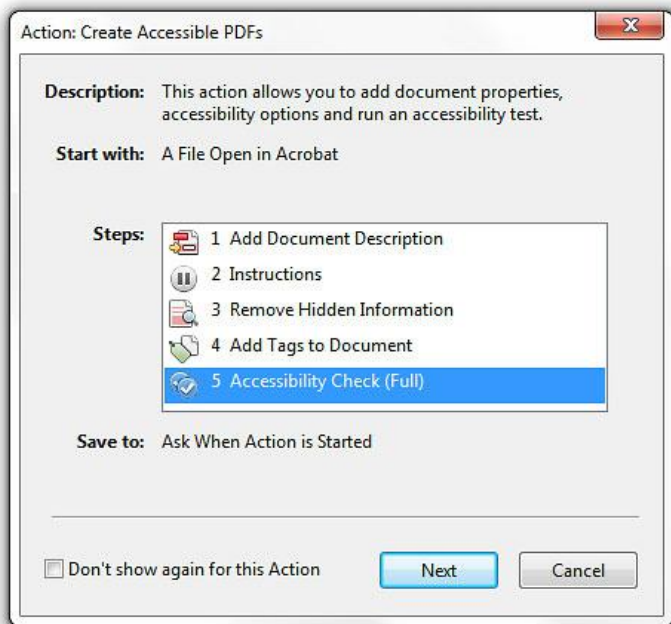
3. Select **Next**
4. Select the folder to save the file (in **Browse For Folder**)
5. Insert **Title** and **Author** (you can also insert subject and keyword)**. In order to insert you must uncheck the "Leave As Is" button.**

6.  **Follow the Wizard** (a yellow sticky note-like pop-up box)



File: acrobat_book.pdf
Complete the following step:
**Instructions**

1. Ensure all links are active.
2. Add bookmarks.
3. Add alternate text to images as needed.
4. Remove security.

**When completed, proceed to Next Step ❯**

7.  In the **Remove Hidden Information** pop up box select **OK**. All of the checked items will be removed.
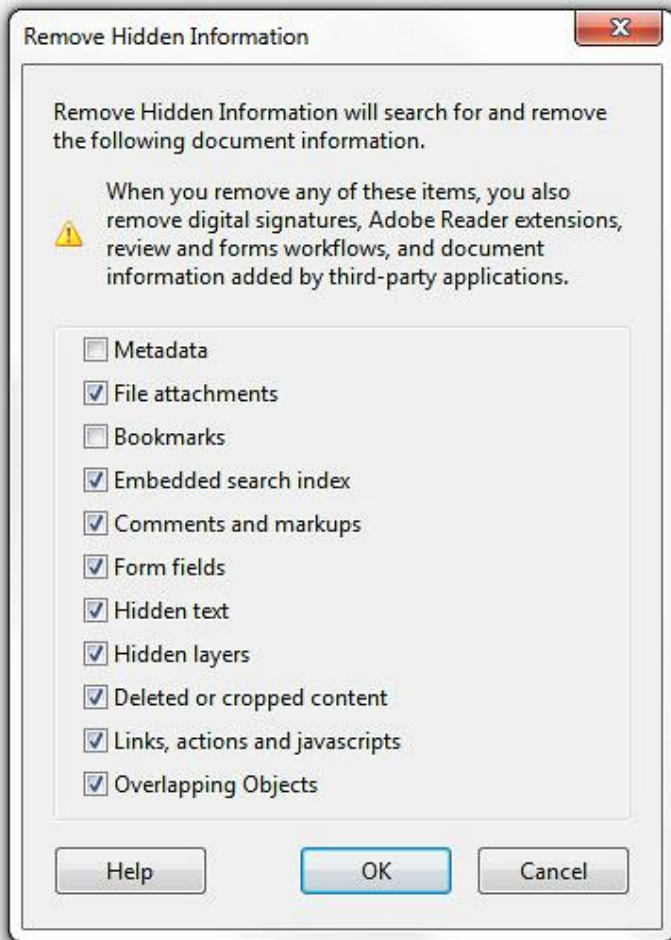
8. **Start Checking**
9. **Save** file. If the file is not fully accessible the errors (report) will be shown on the left panel).

# Technique 3. Add and Edit Tags

> *Caution!*: Actions taken using the TouchUp Reading Order tool and Order Panel cannot be undone. Remember to save your work frequently. If you frequently create PDF files you might consider using one of these [accessible PDF support tools](#).

If tags are missing, then they must be added. When tags are present, they should still be checked for correctness. Acrobat's Help text describes the tags as follows:

**Text**

 Tags the selection as text.

**Figure**

 Tags the selection as a figure. *Text contained within a figure tag is defined as part of the image and is not read by screen readers, though alternate text defined for the figure is read out. Note*: An effective way of handling very complex tex constructs (e.g. flow charts) is to group it all as a figure and provide alt text.

**Form Field**

 Tags the selection as a form field.

**Figure/Caption**

 Tags a selected figure and caption as a single tag. Any text contained in the tag is defined as a caption. Useful for tagging photos and captions and preventing caption text from being incorrectly added to adjacent text blocks. *Note*: Unless the caption actually describes the image, the figures will still require alternate text.

**Heading 1, Heading 2, Heading 3**

 Tags the selection as a first, second, third, fourth, fifth, or sixth level heading tag. You can convert heading tags to bookmarks to help users navigate the document.

**Table**

Tags the selection as a table. When this selection is made, Acrobat analyzes the selection to determine the location of headings, columns, and rows. *Note:* Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

**Cell**

Tags the selection as a table or header cell. Use this option to merge cells that are incorrectly split. *Note:* Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

**Formula**

Tags the selection as a formula. *Note:* Because speech software may handle formula tags differently from normal text, you should still add alternate text.

**Background**

Tags the selection as a background element, or artifact, removing the item from the tag tree so that it does not appear in the reflowed document and is not read by screen readers.

## *To add tags automatically*

*Note:* The automatic tagging feature may be sufficient on simple layouts, but it sometimes misinterprets the structure and reading order of complex page elements (e.g. closely spaced columns, irregular text alignment, and tables without borders.). Therefore, you should still manually check the tags as explained below.
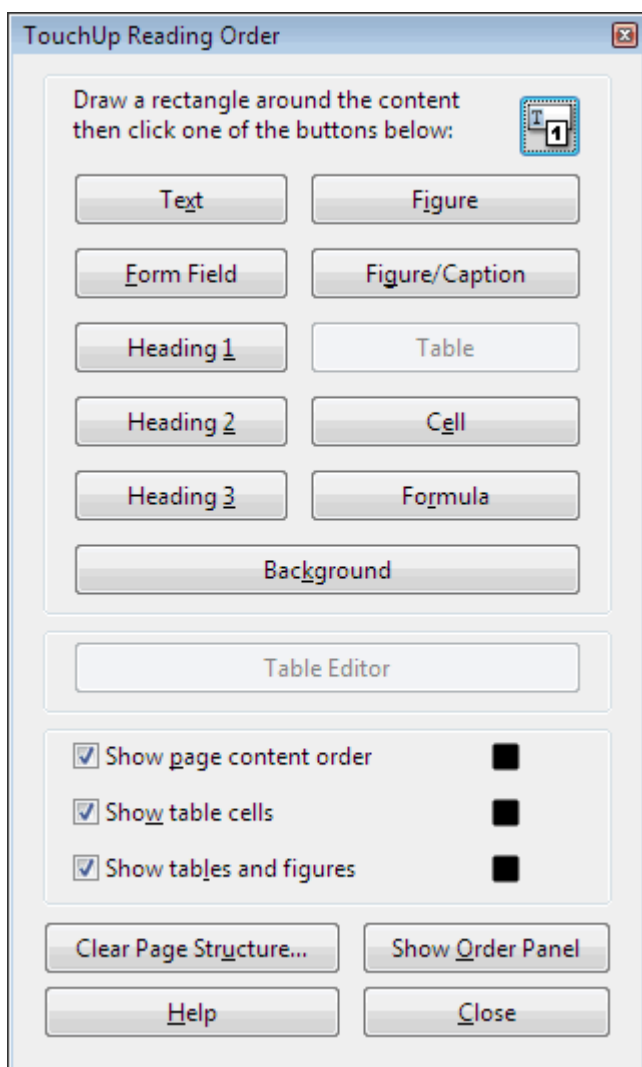
- Go to menu item: **Advanced > Accessibility > Add Tags To Document**
  *Note:* This command removes any tags that were in the

document before the command was run. If any potential problems were encountered, an Add Tags Report appears in the navigation pane.

## *To add/edit tags manually*

1. **TouchUp Reading Order...** In most cases, it will help to have the three checkboxes checked (**Show page content order**, **Show table cells**, **Show tables and figures**)
2. Using the **TouchUp Reading Order** tool, [drag\*](#) within the document pane to select a region of the page that contains one type of content (e.g. a text block)
3. To add more page content to the current selection, **Shift + drag\***
4. To remove page content from the current selection, **Ctrl + drag\***
5. Select the appropriate button in the **TouchUp Reading Order** dialog to specify the tag type, a box should now encapsulate the element ([the tags are explained here](#))

**TouchUp Reading Order**

Draw a rectangle around the content then click one of the buttons below:

| | |
|---|---|
| Text | Figure |
| Form Field | Figure/Caption |
| Heading 1 | Table |
| Heading 2 | Cell |
| Heading 3 | Formula |
| Background | |

Table Editor

☑ Show page content order ■
☑ Show table cells ■
☑ Show tables and figures ■

Clear Page Structure...   Show Order Panel

Help   Close

*Tips for Tagging*

- A good place to start is tagging "Background" content, since this will reduce the number of tags to deal with. Background content should include:

  - empty boxes,
  - visible or invisible textbox borders (especially in busy areas where they overlap with text),
  - visuals that are decorative or redundant (e.g. backgrounds, illustrations), whose content is described adequately in the text .

- If you are having difficulty tagging complex content (e.g. a complex table), consider either:

  - Editing the source document to simplify it, or
  - Selecting the complex content and tagging it as a figure for which you must then add alternative text that properly conveys all of the information in the new figure.

*To change the tag for a region*

1. With the **TouchUp Reading Order** tool...
2. In the document pane, drag* to select a highlight region or

select the number of the highlighted region (or select from the **Order Panel**)

*Note*: If you drag* over part of an already tagged element, the element is sometimes split up. This is helpful when splitting larger elements to ensure correct reading over of sub-elements.

3. Select the appropriate button in the **TouchUp Reading Order** dialog to specify the tag ([the tags are explained here](#))

## *To Modify Tagging*

1. **Tools** > **Content** > **Edit Object**
2. Select items required to be tagged*right click > **properties...**
3. Under Tag select type (paragraph, heading level, span etc.) *Tip*: Tagging items and adding alternative text before converting to PDF will save time.
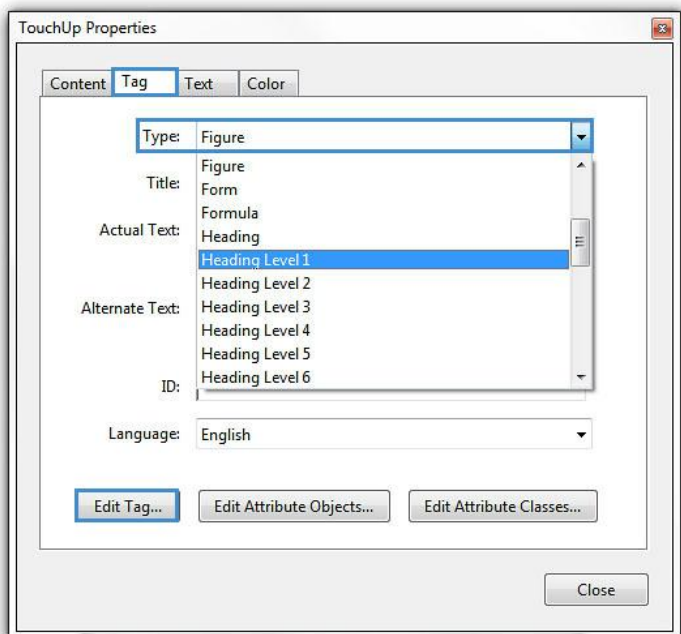
## Correcting Visual Side-Effects of Tagging

Sometimes tagging can result in unexpected visual side effects, such as text disappearing behind background images. The following steps can be taken to correct such side-effects:

1. Open **Content** panel (**View** > **Show/Hide** > **Navigation Panes** > **Content**)
2. Move any <Artifact> elements to the top (this places them behind all other elements).
3. *See if this fixes the problem. If not, continue:*
4. Click **Gears** icon > **Highlight Content**
5. Drag* mouse over unwanted element or the area where missing element should be
6. Click **Gears** icon > **"Find content from selection"** to locate

selection in Content tree

7. In the Content panel tree, click on the "Container" node of the selected element and then adjacent nodes.

8. *As you click, note which element is highlighted on screen. When you have found the element you want to correct, continue:*

9. If you found text that is hidden behind another element, move the hidden element DOWN within the Content panel tree (this moves it above other elements).

10. If you found an element that should not be there, move it UP within the Content panel tree (this moves in behind other elements) or delete it if necessary (remember to Save beforehand)

*Note*: The order of items in the Content panel tree indicates their layer order in the document. If item A is lower in the tree than item B, then if item A and B overlap in the document, A will be in front. Some people find this confusing, so a good way to remember how this works is to imagine putting documents in a pile and noting their names in a list. The last document placed will be on top of the pile, covering the others, and its name will be on the bottom of the list.

## Technique 4. Provide Alternative Text

When using images, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If the image is purely decorative, mark it as background.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank (e.g. Background images should generally have no alternative text, other decorative images should only have alt text if they form a crucial part of the content, message, and purpose of the document)
- If the image contains meaningful text, ensure all of the text is replicated
- For logos, the alternative text should be the organization's name
- For groups of logos, one logo can be chosen to represent the group
- Sometimes text is included as part of a logo or footer image (e.g. the image might contain a phone number), this text should be set as the alternative text of the image
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g. for a chart or graph), provide a short description in the alternative text (e.g. a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image conveying?"
- In some situations, the information being conveyed will be how an image looks (e.g. an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- One approach is to imagine you are describing the image to a person over the phone
- Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description
- Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, the images should be marked as "Background" and you do not have to provide alternate text within the image.

*To add alternative text to images*

1. **Tools** > **Content** > **Edit Object**
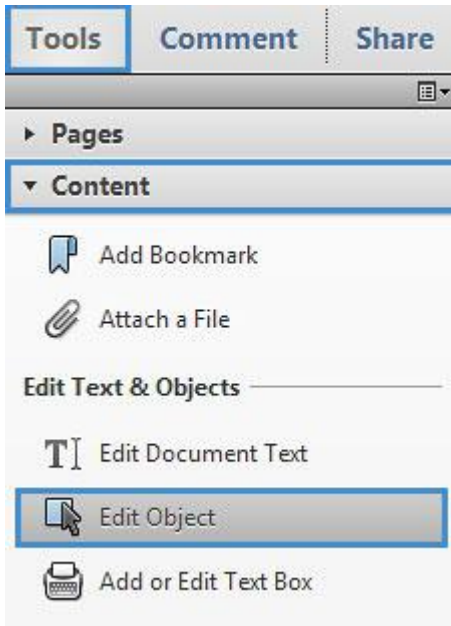
2. Select image *right click > **properties...**
3. Under Tag select type (*figure, table etc.*)
4. Alternative text inserts text
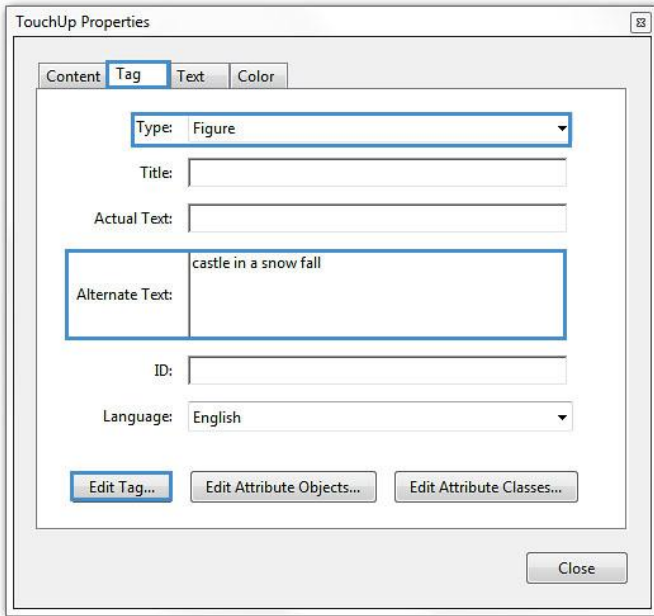
## To add alternative text to links

1. In the tag tree, select the **Link** tag for the link
2. Select **Options > Properties**
3. In the **TouchUp Properties** dialog, select the **Tag** tab
4. Type alternative text for the link
5. Select **Close**

## To create an artifact

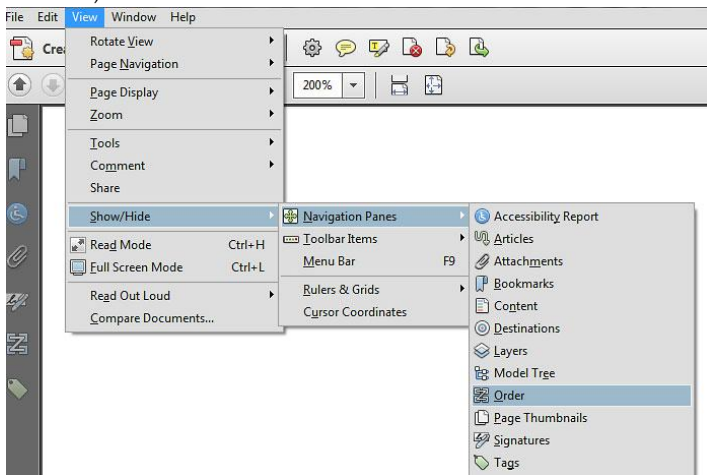Artifacts are for objects that are not required to be read out loud (eg. background colours)

1. **Tools** > **Content** > **Edit Object**

2. Select image *right click > **Create Artifact**

# Technique 5. Set a Logical Reading Order

Setting up reading order will set up the way the device will read the file out loud to view and change reading order:

1. Select the **Order Pane** (**View** > **Show/Hide** > **Navigation Panes** > **Order**)



2. Once the order pane is selected the file will show numbers per page showing the reading order.

3. If the reading order is incorrect select the following information from the pane and move the information bellow or above to make the reading order correct.

## To test the reading order

Sometimes it may not be clear by looking at content, what would be the most logical aural reading order. In these cases, it is recommended to preview the reading order.

> *Caution!*: The "Read Out Loud" feature is **not recommended** for checking the aural order because it will provide an inaccurate .

One method for testing the reading order of your document is called "reflowing", which temporarily presents it as a single column that is the width of the document pane. Only readable text appears in the reflow view. If the tagged PDF does not reflow the way you

want, it means that the content order or reading order of the PDF contains inconsistencies. If this is the case, in addition to correcting the reading order, it may also be helpful to edit the document tags.

1. Go to menu item: **View > Zoom > Reflow**
2. To return to regular view, go to menu item: **View > Zoom > Reflow**

Another way to test the aural accessibility of a document is to attempt to access the document with the screen readers that your readers will use (e.g., NVDA or JAWS on Windows, VoiceOver on Mac OS).
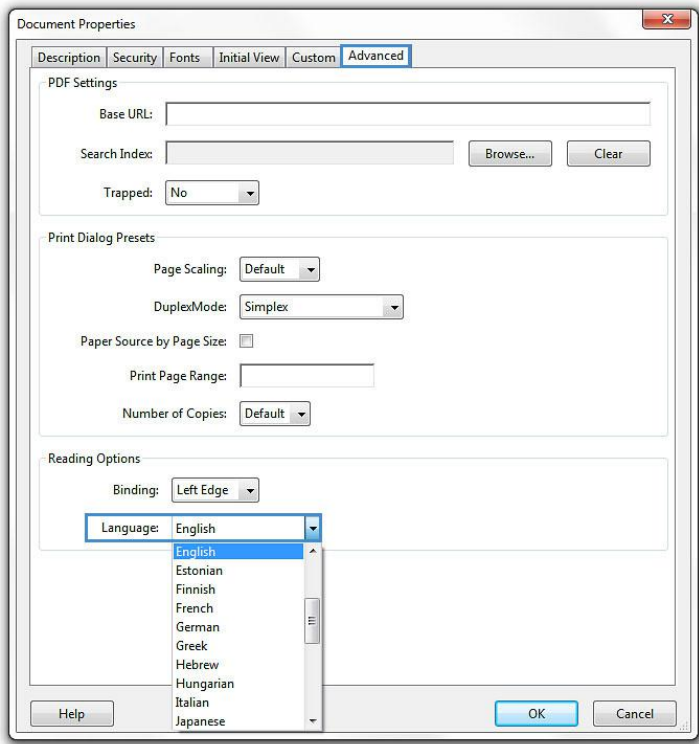
# Technique 6. Set Document Properties

It is important to set up the PDF correctly in order for assistive technologies (e.g. screen readers) to be able to present your document accurately.

1. **File** > **Properties** *keyboard shortcut*: Ctrl + D (on windows), Cmd + D (on Mac)
2. Under **Descriptions** tab fill in the title and author. (Subject and Keywords can also be filled in)
3. Under **Initial Views** change the following

   ◦ **Layout and Magnification**
   ◦ Navigation Tab: **Bookmarks Panel and pages**
   ◦ Magnification: **Fit Page**
   ◦ Open to Page: **1 Window Options**
   ◦ Check **Center window on Screen**
   ◦ **Show** > **Document Title**

4.  Under the **Advanced** tab select **Language** and change to the preferred language If a different natural language is used for a paragraph or selected text, this also needs to be clearly indicated.
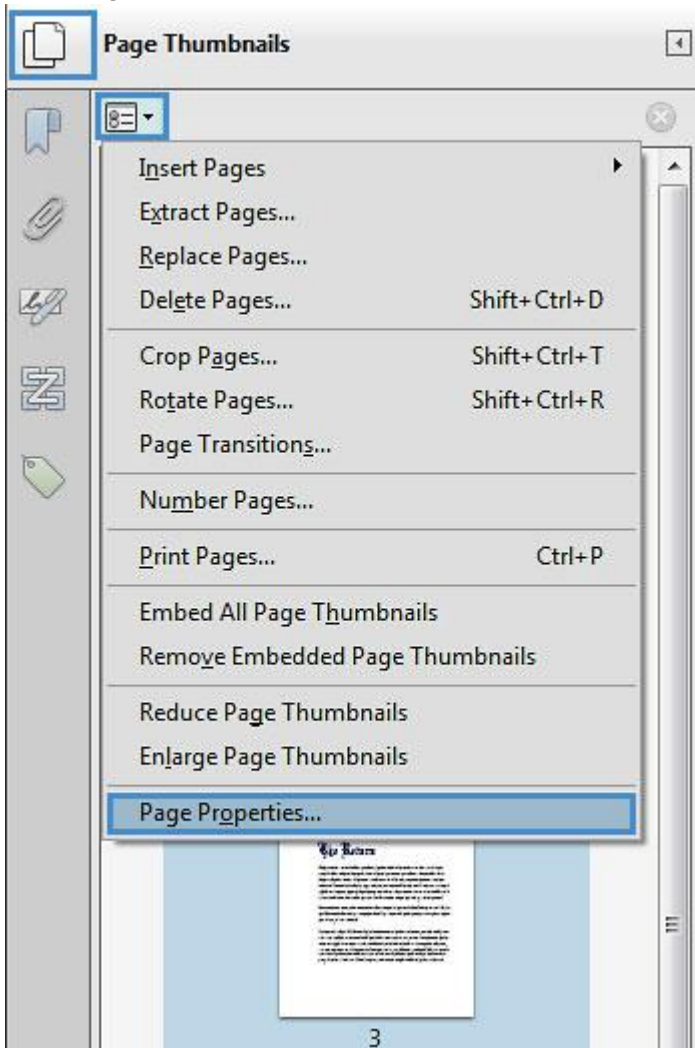
5. Select **OK**

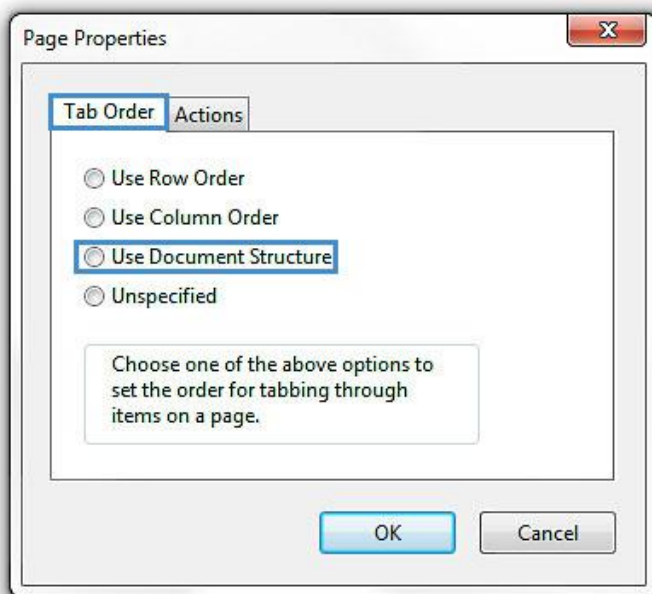## To apply a language directly to selected element

1. Go to menu item: **View > Navigation Panels > Tags**
2. In the **Tags** tab, select the element
3. Right-click* the element and select **Properties...**
4. In the **Content** tab, select the language from the **Language** drop-down list
5. Select **Close**

*To set the page structure to document structure*

1. Select all the pages (*ctrl* + A *or cmd* + A) in the page **Thumbnails Panel**
2. Select **Page Properties**



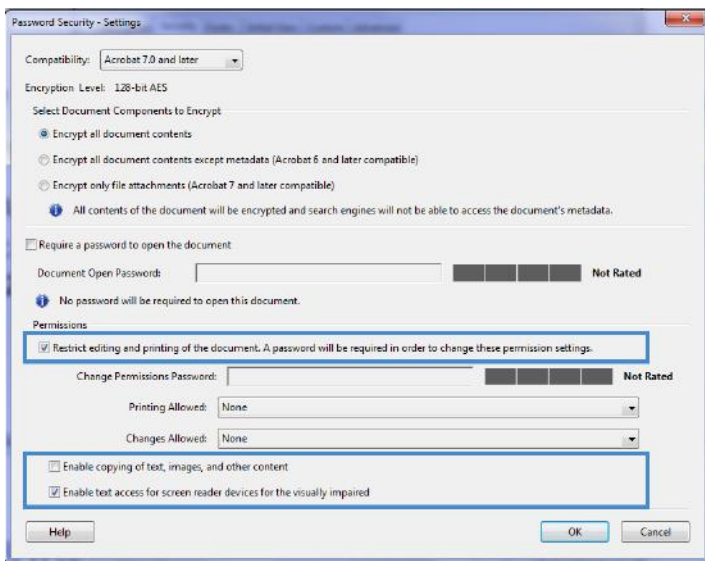3. Under **Tab Order** select **Use Document Structure**

4. Select **OK**

# Technique 7. Adjust Security Settings

It is possible to specify that no part of an accessible PDF is to be copied, printed, extracted, commented on, or edited. This can be accomplished by encrypting the document with password security. However, this could interfere with a screen reader's ability to read the document, because screen readers must be able to copy or extract the document's text in order to convert it to speech. In Acrobat 10 Pro, it is possible to maintain high-encryption-level security while at the same time providing the necessary access to assistive technologies.

*To allow assistive technologies access to content*

1. Go to menu item: **File >Properties > Security Properties**
2. **Security Method** > **Password Security**
3. In the **Password Security – Settings** dialog, under **Permissions**, select **Restrict editing and printing of the document**
4. For low-encryption-level security, select **Enable copying of text, images, and other content**
5. For high-encryption-level security, select **Enable text access for screen reader devices for the visually impaired** (this overrides the document's security settings only for the purpose of giving assistive software, such as screen readers, access to the content)
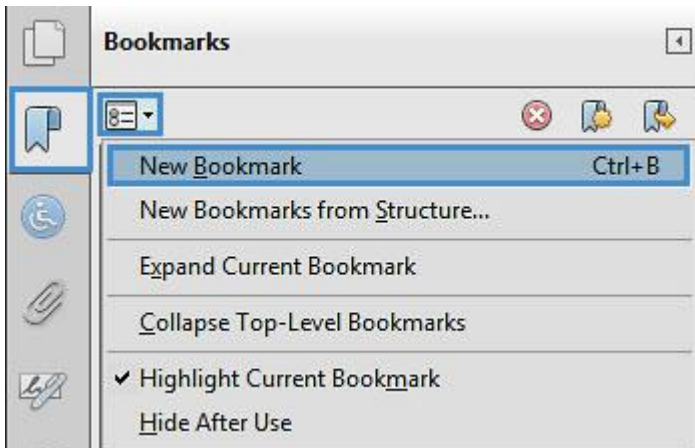6. Select **OK**

# Technique 8. Set Bookmarks

A bookmark is a type of link with representative text in the **Bookmarks** panel in the navigation pane. Each bookmark goes to a different view or page in the document. In Acrobat 10 Pro, you can use bookmarks to mark a place in the PDF to which you want to return, or to jump to a destination in the PDF, another document, or a web page. There are several ways to create bookmarks.
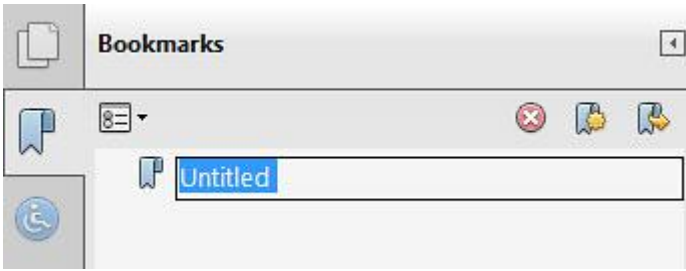
   *Note:* An Acrobat user can only add bookmarks to a document only if the security settings allow it.
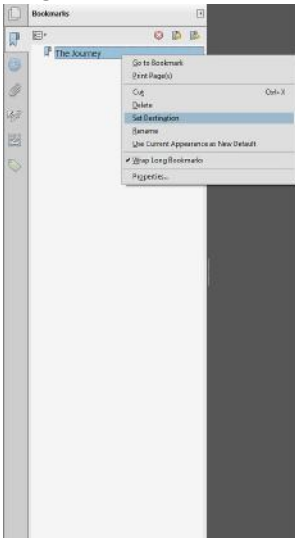
## *To add a bookmark manually*

1.  **Bookmark** > **New Bookmark**



2.  Insert the title of the content

3. Scroll to the page that the bookmark is intended to link.
4. **\*Right click** the bookmark title > **Set Destination**



## *To add bookmarks automatically*

Bookmarks can also be generated automatically from various types of structure that will be in your document if you have tagged it properly:

1. **Bookmark** > **New Bookmark from Structure** (in the drop down menu in the bookmark pane)
2. Select the structure to generate bookmarks from.

# Accessibility Support Tools

- **axesPDF**: A plug-in for Microsoft Word 2007/2010 that makes it easier to create accessible PDFs (free public beta program);
- **CommonLook Office**: A plug-in for Microsoft Word 2007/2010 and PowerPoint 22007/010 that makes it easier to create accessible PDFs.
- **CommonLook PDF**: A plug-in for Adobe Acrobat that helps identify, report and correct accessibility problems.
- **MadeToTag**: A plug-in for for Adobe InDesign that makes it easier to create accessible PDF from InDesign documents.
- **PDFGoHTML**: A free Adobe Acrobat plug-in that converts tagged PDF into HTML, which can be useful in debugging tagging structures.

# References and Resources

- WebAIM: PDF Accessibility
- Adobe Acrobat X Accessibility Overview
- PDF Techniques for WCAG 2.0
- WebAIM PDF Accessibility: Acrobat and Accessibility
- GAWDS Writing Better Alt Text
- Ryerson University: Adobe Acrobat Accessibility Tipsheet (PDF)

# Acknowledgments

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Authoring Techniques for Accessible Documents: Acrobat Pro 10 is licensed under a Creative Commons Attribution-ShareAlike 3.0 Unported License.

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# Adobe Acrobat 9 Pro

## Usage Notes

At the time of testing (January 19, 2011), Acrobat 9 Pro (Windows) enables the production of accessible digital office documents. Acrobat 9 Pro includes an accessibility checking feature.

*Note*: While PDF accessibility has improved over the years, accessibility support for PDF by authoring tools, viewers and assistive technologies (e.g. screen readers) is not as widespread as for HTML documents. **We recommend considering HTML instead of or in addition to PDF where appropriate.**

## Should I use ADOD or WCAG 2.0?

These techniques can help you to use Acrobat 9 Pro to create documents that are:

- **Intended to be used by people** (i.e. not computer code),
- **Text-based** (i.e. not simply images, although they may contain images),
- **Fully printable** (i.e. where dynamic features are limited to automatic page numbering, table of contents, etc. and do not include audio, video, or embedded interactivity),
- **Self-contained** (i.e. without hyperlinks to other documents, unlike web content), and
- **Typical of office-style workflows** (Reports, letters, memos, budgets, presentations, etc.).

*Note*: If you are creating forms, web pages, applications, or other

dynamic and/or interactive content, these you should also consult the [W3C-WAI Web Content Accessibility Guidelines (WCAG 2.0)](#). The WCAG working group has provided [PDF Techniques for WCAG 2.0](#).

## File Formats

The default file format for Acrobat 9 Pro is **Adobe Portable Document Format (PDF)**. Several other word processor and web format saving options are also offered, but these have not been checked for accessibility.

## Document Conventions

We have tried to write these techniques so that they are useful to all authors, regardless of whether they use a mouse. However, for clarity there are several instances where mouse-only language is used. Below are the mouse-only terms and their keyboard alternatives:

- **\*Right-click:** To right-click with the keyboard, select the object using the Shift+Arrow keys and then press either (1) the "Right-Click" key (some keyboard have this to the right of the spacebar) or (2) Shift+F10.
- **\*Drag:** Unfortunately, there is no keyboard alternative for several operations that require dragging.

# Disclaimer and Testing Details:

- **Following these techniques will increase the accessibility of your documents, but it does not guarantee accessibility to any specific disability groups**. In cases where more certainty is required, it is recommended that you test the office documents with end users with disabilities, including screen reader users.
- The application-specific steps and screenshots in this document were created using Adobe Acrobat 9 Pro (ver.9.0.0, Windows 7, Jan. 2011) while creating a PDF document.
- Tasks completed in [Technique 3](#), [Technique 4](#), and [Technique 5](#) cannot be undone. It is recommended that you save your PDF document before and after you make significant changes.
- This document is provided for information purposes only and is neither a recommendation nor a guarantee of results.
- If errors are found, please report them to: [adod-comments@idrc.ocad.ca](mailto:adod-comments@idrc.ocad.ca)

## Technique 1. Use Accessible Source Documents

In the Adobe Acrobat 9 Pro workflow, all PDF documents start with a source document created in an office document authoring application, such as Microsoft Word or OpenOffice.org Writer. Because source documents provide the starting-point for the PDF documents, accessibility is very important.

*To create an accessible source document*

1. Create a new document in the authoring application (from the default blank template or from one of the prepackaged

templates).

2. Ensure that you follow the **ADOD Authoring Techniques** provided for the authoring application (available at: [How to Use This Resource](#)).

3. When you are finished, you should also check the accessibility of the document (see "Accessibility Checking" in the Authoring Techniques for the authoring application).

Once you have completed the above steps, you are ready to convert your document to PDF using Adobe Acrobat 9.

### *To convert single source documents to PDF*

1. Go to the menu item: **File > Create PDF > From file...**
2. Locate and select your source document and select the **Open** button, Acrobat will then proceed to convert the file.

*Note*: A batch conversion process is also available from the menu item: **File > Create PDF > Batch Create Multiple Files**

## Scanned Content

If you created a PDF from a scanned document, then it will be inherently inaccessible to screen readers and other assistive technologies.The document will be less useful because graphic representations of text cannot be selected, edited or searched.

In this case, it is necessary that you convert the scanned images of text to searchable content using Acrobat's **optical character recognition (OCR)** feature before addressing the accessibility features of the document.
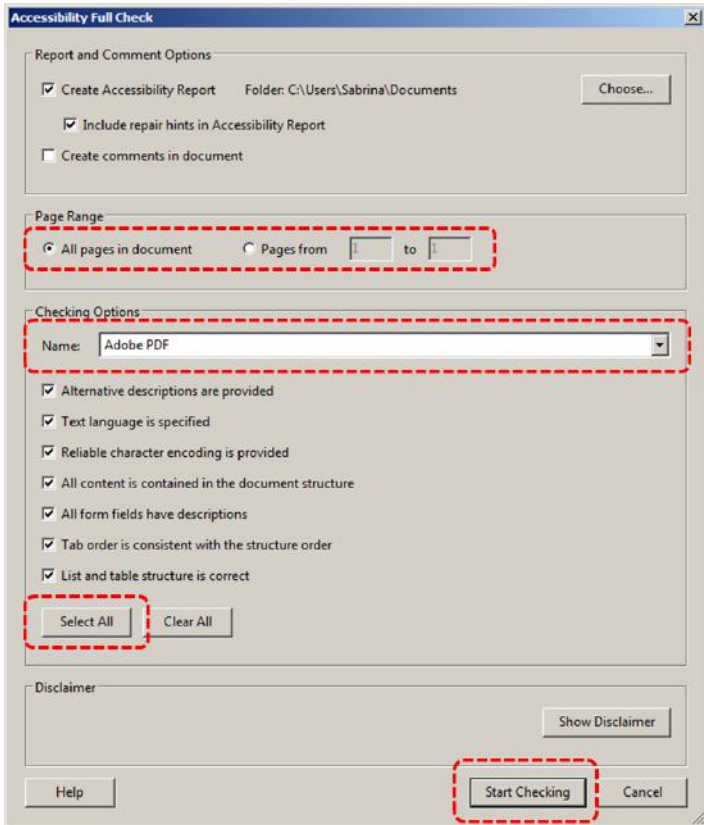
# Technique 2. Check Accessibility

The most basic requirement for a PDF document to be accessible is for it to be **"tagged"** with hidden labels ("tags") that describes the structure of the document (e.g. that text should be interpreted as a header, paragraph, table cell, etc.). Screen readers can then use these tags to convey the document's information effectively to people with visual disabilities.

The other requirements for a PDF document to be accessible (e.g. alternate text, logical reading order, etc.) can only all apply once the document is tagged.

*Caution!:* The "Quick Check" feature is **not recommended** because it misses some important accessibility issues. Always perform a "Full Check" instead.

## To perform a "Full Check"

1. Go to menu item: **Advanced > Accessibility > Full check**
2. Under **Report and Comment Options**, select how you would like to view the results
3. If you would like to do a full check on individual sections of a document, under **Page Range**, select a page range (when you have a large document, running a full check on one section at a time can be more efficient.)
4. Under **Checking Options**, select an accessibility standard from the **Name** drop-down list
5. Under **Checking Options**, select **Select All** to run a complete accessibility check
6. Select **Start Checking**

## Technique 3. Add and Edit Tags

> *Caution!*: Actions taken using the TouchUp Reading Order tool and Order Panel cannot be undone. Remember to save your work frequently. If you frequently create PDF files you might consider using one of these [accessible PDF support tools](#).

If tags are missing, then they must be added. When tags are present, they should still be checked for correctness. Acrobat's Help text describes the tags as follows:

**Text**

Tags the selection as text.

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Tags the selection as a figure. *Text contained within a figure tag is defined as part of the image and is not read by screen readers, though alternate text defined for the figure is read out.Note*: An effective way of handling very complex tex constructs (e.g. flow charts) is to group it all as a figure and provide alt text.

**Form Field**

Tags the selection as a form field.

**Figure/Caption**

Tags a selected figure and caption as a single tag. Any text contained in the tag is defined as a caption. Useful for tagging photos and captions and preventing caption text from being incorrectly added to adjacent text blocks. *Note*: Unless the caption actually describes the image, the figures will still require alternate text.

**Heading 1, Heading 2, Heading 3**

Tags the selection as a first, second, third, fourth, fifth, or sixth level heading tag. You can convert heading tags to bookmarks to help users navigate the document.

**Table**

Tags the selection as a table. When this selection is made, Acrobat analyzes the selection to determine the location of headings, columns, and rows. *Note*: Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

**Cell**

> Tags the selection as a table or header cell. Use this option to merge cells that are incorrectly split. *Note*: Table editing can be especially challenging. Try to keep them as simple as possible in the source document.

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> Tags the selection as a formula. *Note*: Because speech software may handle formula tags differently from normal text, you should still add alternate text.

**Background**

> Tags the selection as a background element, or artifact, removing the item from the tag tree so that it does not appear in the reflowed document and is not read by screen readers.

## *To add tags automatically*

*Note*: The automatic tagging feature may work for simple layouts, but it sometimes misinterprets the structure and reading order of complex page elements (e.g., closely spaced columns, irregular text alignment, and tables without borders). Therefore, you should still manually check the tags as explained below.

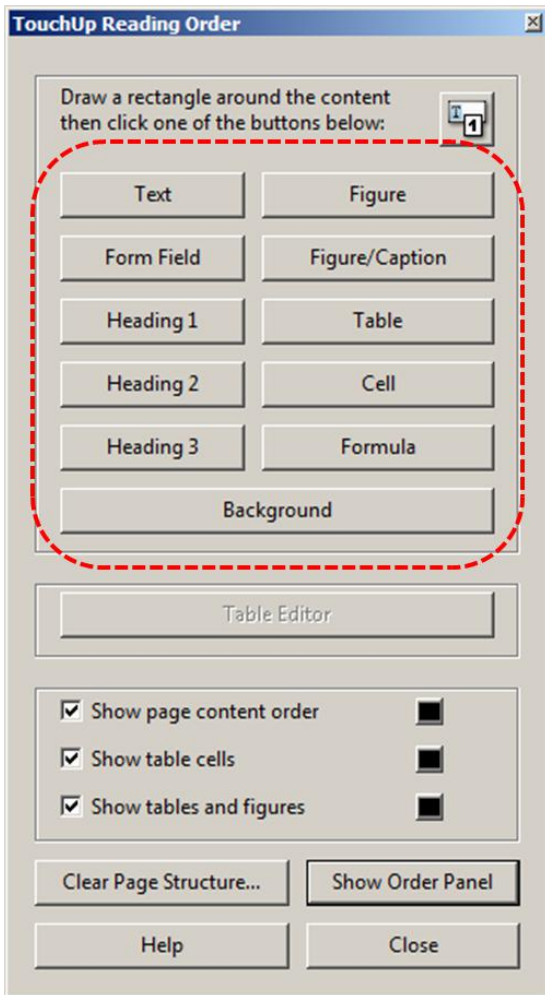1. Go to menu item: **Advanced > Accessibility > Add Tags To Document**
   *Note*: This command removes any tags that are present in the document before the command was run. If any potential problems are encountered, an Add Tags Report appears in the navigation pane.

*To add/edit tags manually*

1. Go to menu item: **Advanced > Accessibility > TouchUp Reading Order…**
   In most cases, it will help to have the three checkboxes checked (**Show page content order**, **Show table cells**, **Show tables, and figures**).
2. Using the **TouchUp Reading Order** tool, [drag*](#) within the document pane to select a region of the page that contains one type of content (e.g., a text block).
3. To add more page content to the current selection, **Shift + drag\***
4. To remove page content from the current selection, **Ctrl + drag\***
5. Select the appropriate button in the **TouchUp Reading Order** dialog to specify the tag type, a box should now encapsulate the element ([the tags are explained above](#))

*Tips for Tagging*

- A good place to start is tagging "Background" content, since this will reduce the number of tags to deal with. Background content should include:

  ◦ empty boxes,
  ◦ visible or invisible textbox borders (especially in busy areas where they overlap with text),
  ◦ visuals that are decorative or redundant (e.g., backgrounds, illustrations), whose content is described adequately in the text .

- If you are having difficulty tagging complex content (e.g., a complex table), consider either:

  ◦ Editing the source document to simplify it, or
  ◦ Selecting the complex content and tagging it as a figure for which you must then add alternative text that properly conveys all of the information in the new figure

*To change the tag for a region*

1. With the **TouchUp Reading Order** tool...
2. In the document pane, drag* to select a highlight region or

select the number of the highlighted region (or select from the **Order Panel**)

*Note*: If you drag\* over part of an already tagged element, the element is sometimes split up. This is helpful when splitting larger elements to ensure correct reading over of sub-elements.

3. Select the appropriate button in the **TouchUp Reading Order** dialog to specify the tag ([the tags are explained here](#))

## Technique 4. Provide Alternative Text

When using images, it is important to ensure that the information you intend to convey by the image is also conveyed to people who cannot see the image. This can be accomplished by adding concise alternative text to each image. If the image is purely decorative, mark it as background.

*Tips for writing alternative text*

- Try to answer the question "what information is the image conveying?"
- If the image does not convey any useful information, leave the alternative text blank (e.g., Background images should generally have no alt text, other decorative images should only have alt text if they form a crucial part of the content, message, and purpose of the document)

- If the image contains meaningful text, ensure all of the text is replicated
- For logos, the alternative text should be the organization name
- For groups of logos, one logo can be chosen to represent the group
- Sometimes text is included as part of a logo or footer image (e.g., the image might contain a phone number), this text should be set as the alternative text of the image
- Alternative text should be fairly short, usually a sentence or less and rarely more than two sentences
- If more description is required (e.g., for a chart or graph), provide a short description in the alternative text (e.g., a summary of the trend) and more detail in the long description, see below
- Test by having others review the document with the images replaced by the alternative text

*Tips for writing longer descriptions*

- Long descriptions should be used when text alternatives (see above) are insufficient to answer the question "what information is the image

conveying?"

- • In some situations, the information being conveyed will be how an image looks (e.g., an artwork, architectural detail, etc.). In these cases, try to describe the image without making too many of your own assumptions.
- • One approach is to imagine you are describing the image to a person over the phone
- • Ensure that you still provide concise alternative text to help readers decide if they are interested in the longer description.
- • Alternatively, you can include the same information conveyed by the image within the body of the document, providing the images as an alternate to the text. In that case, the images should be marked as background and you do not have to provide alternate text within the image.

## *To add alternative text using the Navigation Panel*

1. Go to menu item: **View > Navigation Panels > Tags**
2. In the **Tags** tab, select the element
3. [Right-click*](#) the element and select **Properties...**
4. In the **Tag** tab, fill in the alternative text in the **Alternative Text** box
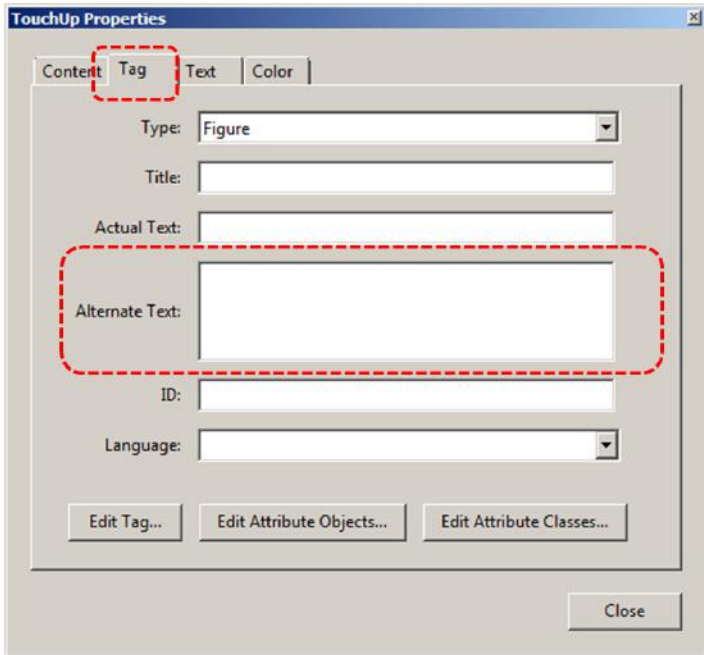
5. Select **Close**

*Tip*: If you have a number of images arranged together, pick the main image and assign alternative text to it that describes the whole. Then, mark the secondary images as Background to be ignored (i.e. untag them)

## To add alternative text directly to the element

1. Right-click* the element and select **Edit Alternate Text...**
2. Enter the alternative text in the **Alternate Text** box
3. Select **OK**

## To add alternative text to links

1. In the tag tree, select the **Link** tag for the link
2. Select **Options > Properties**
3. In the **TouchUp Properties** dialog, select the **Tag** tab
4. Type alternative text for the link
5. Select **Close**

## Correcting visual side-effects of tagging

Sometimes tagging can result in unexpected visual side effects, such as text disappearing behind background images. The following steps can be taken to correct such side-effects:

1. Open **Content** panel (this is another option in the same location as the **Order** panel)
2. Move any <Artifact> elements to the top (this places them behind all other elements).
3. *See if this fixes the problem. If not, continue:*
4. Click **Gears** icon > **Highlight Content**
5. Drag* mouse over unwanted element or the area where missing element should be
6. Click **Gears** icon > **"Find content from selection"** to locate selection in Content tree
7. In the Content panel tree, click on the "Container" node of the selected element and then adjacent nodes.
8. As you click, note which element is highlighted on screen. When you have found the element you want to correct, continue:
9. If you found text that is hidden behind another element, move the hidden element DOWN within the Content panel tree (this moves it above other elements).
10. If you found an element that should not be there, move it UP

within the Content panel tree (this moves in behind other elements) or delete it if necessary (remember to Save beforehand)

*Note*: The order of items in the Content panel tree indicates their layer order in the document. If item A is lower in the tree than item B, then if item A and B overlap in the document, A will be in front. Some people find this confusing, so a good way to remember how this works is to imagine putting documents in a pile and noting their names in a list. The last document placed will be on top of the pile, covering the others, and its name will be on the bottom of the list.

# Technique 5. Set a Logical Reading Order

The order in which elements in a document are read by assistive software is determined by the reading order. Each section of page content appears as a separate highlighted region and is numbered according to its placement in the reading order. You can change the reading order of the highlighted regions without changing the actual appearance of the PDF. For example, by reordering highlighted regions on the page, you can make a figure and caption read at the specific point that they are referenced in the text without actually moving the elements on the page.

## *To correct the reading order*

1. Go to menu item: **Advanced > Accessibility > TouchUp Reading Order…**
2. Select **Show Order Panel**
3. In the **Order** tab, navigate through the list of highlighted regions that appear in the document pane
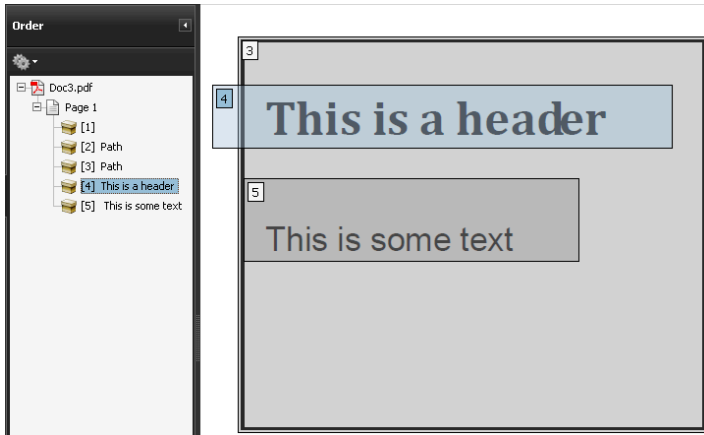
4. If a highlighted region is misplaced, right-click* and select **Cut**
5. Navigate to the location where the region should be placed, right-click* the item above the location in the list and select **Paste**. After you drag* an item to a new location, the highlighted regions are renumbered accordingly.

   *Note:* You can also complete steps 4 and 5 by dragging* the tag for the region to the location you want. As well, you can select and move multiple adjacent regions at once.

## To test the reading order

Sometimes it may not be clear by looking at content, what would be the most logical aural reading order. In these cases, it is recommended to preview the reading order.

*Caution!:* The "Read Out Loud" feature is **not recommended** for checking the aural order because it will provide an inaccurate .

One method for testing the reading order of your document is called "reflowing", which temporarily presents it as a single column that is the width of the document pane. Only readable text appears in the reflow view.

If the tagged PDF does not reflow the way you want, it means that the content order or reading order of the PDF contains

inconsistencies. If this is the case, in addition to correcting the reading order, it may also be helpful to edit the document tags.

1. Go to menu item: **View > Zoom > Reflow**
2. To return to regular view, go to menu item: **View > Zoom > Reflow**

Another way to test the aural accessibility of a document is to attempt to access the document with the screen readers that your readers will use (e.g. NVDA or JAWS on Windows, VoiceOver on Mac OS).

# Technique 6. Set Document Properties

## 6.1 Document Language

It is important to set up the PDF correctly in order for assistive technologies (e.g. screen readers) to be able to present your document accurately.

### *To change the default language*

1. Go to menu item: **File > Properties**
2. Select the **Advanced** tab
3. In the **Reading Options** section, select the language from the **Language** drop-down list
4. Select **OK**

*To apply a language directly to selected element*

1. Go to menu item: **View > Navigation Panels > Tags**
2. In the **Tags** tab, select the element
3. Right-click* the element and select **Properties...**
4. In the **Tag** tab, select the language from the **Language** drop-down list
5. Select **Close**

## 6.2 Document Title

In case the document is ever converted into HTML, it should be given a descriptive and meaningful title.

*To change the title of the current document*

1. Go to menu item: **File > Properties**
2. Select the **Description** tab
3. Enter a descriptive title in the **Title** box. It is also helpful to enter descriptive information in the text boxes that follow (**Author**, **Subject**, **Keywords** or select **Additional Metadata**)
4. Select **OK**

## Technique 7. Adjust Security Settings

It is possible to specify that no part of an accessible PDF is to be copied, printed, extracted, commented on, or edited. This can be accomplished by encrypting the document with password security. However, this could interfere with a screen reader's ability to read

the document, because screen readers must be able to copy or extract the document's text in order to convert it to speech. In Acrobat 9 Pro, it is possible to maintain high-encryption-level security while at the same time providing the necessary access to assistive technologies.

## *To allow assistive technologies access to content*

1. Go to menu item: **Advanced > Security > Show Security Properties**
2. Set the **Security Method** field to "No Security" or enable "Content Copying for Accessibility" in the Document Restrictions
3. Go to menu item: **Advanced > Security > Encrypt with Password**
4. In the **Password Security – Settings** dialog, under **Permissions**, select **Restrict editing and printing of the document**
5. For low-encryption-level security, select **Enable copying of text, images, and other content**
6. For high-encryption-level security, select **Enable text access for screen reader devices for the visually impaired** (this overrides the document's security settings only for the purpose of giving assistive software, such as screen readers, access to the content)
7. Select **OK**
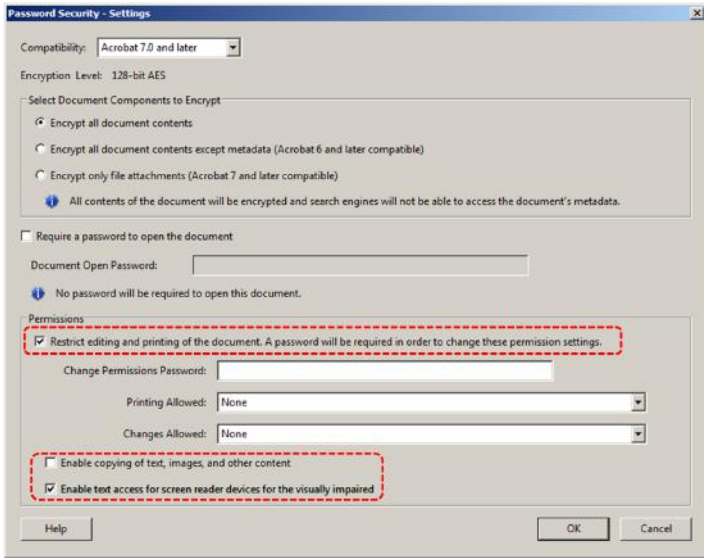
## Technique 8. Set Bookmarks

A bookmark is a type of link with representative text in the **Bookmarks** panel in the navigation pane. Each bookmark goes to a different view or page in the document. In Acrobat 9 Pro, you can use bookmarks to mark a place in the PDF to which you want to return, or to jump to a destination in the PDF, another document, or a web page.

   *Note:* An Acrobat user can only add bookmarks to a document only if the security settings allow it.

*To create a bookmark*

1.  Select text to bookmark
2.  Type **Ctrl+B**
3.  Type a name the bookmark (or leave the default text)

4. To create a bookmark without keyboard shortcuts

## To delete a bookmark

1. In the **Bookmarks** pane, *right-click on the bookmark
2. Select **Delete**

## To create a bookmark hierarchy

1. In the **Bookmarks** pane, *right-click on the bookmark to move
2. Select **Cut**
3. *right-click on the new bookmark you would like the moved bookmark to appear under
4. Select **Paste Under Selected Bookmark**

# Accessibility Support Tools

- **axesPDF**: A plug-in for Microsoft Word 2007/2010 that makes it easier to create accessible PDFs (free public beta program);
- **CommonLook Office**: A plug-in for Microsoft Word 2007/2010 and PowerPoint 2007/010 that makes it easier to create accessible PDFs.
- **CommonLook PDF**: A plug-in for Adobe Acrobat that helps identify, report and correct accessibility problems.
- **MadeToTag**: A plug-in for for Adobe InDesign that makes it easier to create accessible PDF from InDesign documents.
- **PDFGoHTML**: A free Adobe Acrobat plug-in that converts tagged PDF into HTML, which can be useful in debugging tagging structures.

# References and Resources

1. [Adobe Acrobat 9 Pro Pro Accessbility Guide](#)
2. [PDF Techniques for WCAG 2.0](#)
3. [WebAIM PDF Accessibility: Acrobat 7-9 and Accessibility](#)
4. [GAWDS Writing Better Alt Text](#)
5. [Ryerson University: Adobe Acrobat Accessibility Tipsheet (PDF)](#)

# Acknowledgements

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# Document Accessibility Resources

Here is a curated list of resources brought to you by the editors of this resource.

## Courses on Document Accessibility

- [WebAIM: Document Accessibility Training](#)
- [LinkedIn Learning: Creating Accessible Documents in Microsoft Office](#)
- [PDF Accessibility Training (Video Tutorials)](#) – This PDF Accessibility training series was provided to Microsoft employees on creating accessible PDF documents. Use these videos, along with documentation from [Adobe Accessibility](#) to learn to create, remediate, and check for accessibility issues. To test your knowledge, use the PDF sample documents at [PDF Accessibility Training – Sample Docs](#).
- [LinkedIn Learning: Creating Accessible PDFs](#)
- [LinkedIn Learning: Advanced Accessible PDFs](#)

## Resources on Document Accessibility

- [Accessibility for Microsoft Word, PowerPoint, Excel (Penn State)](#)
- [Creating Accessible Documents (University of Washington)](#)
- [Accessible Documents (Ryerson University)](#)

# Creating Accessible PDFs

- [Create and verify PDF accessibility (Acrobat Pro)](#)
- [WebAIM PDF Accessibility](#)

# Colour & Contrast Testing

- [WebAIM Contrast Checker](#)
- [Accessible Color Palette Tool](#)