

Avenues to Accessibility: A Beginner's Guide

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About Avenues to Accessibility

Avenues to Accessibility is a project focused on sharing information about the basics of web accessibility. While the content of these modules focus primarily on best practices for designing digital content, anyone who uses the web can benefit from this project.

Technical writing and accessibility

Avenues to Accessibility was created for a technical writing class using MadCap Flare, an industry-standard help authoring tool. When creating documentation or publishing in digital formats, it is important to consider accessibility in all steps of the process. Using an industry-standard product to talk about accessibility fosters compatibility between technical writing and accessible design, which can benefit all users whether they have a disability or not.

What to expect

This project has three chapters, each containing two or three modules, all of which revolve around how to achieve accessible design.

The first chapter focuses on discussing accessibility as a whole: defining accessibility, the importance of accessibility, and what digital content creators can do to ensure accessibility.

The second chapter is all about alternative text (alt text), which is a fundamental web accessibility practice. The modules go over the definition of alt text, how to write alt text, and the different methods of adding alt text in MadCap Flare.

The final chapter discusses web accessibility specifically for neurodiversity. The modules cover neurodiversity more generally, including what it means as both a definition and social movement. The second module discusses best design practices for neurodivergence, and related guidelines that might be helpful.

Cover image by [Kelly](#) via [Pexels](#).

What is accessibility?

Accessibility is the extent to which someone can interact with their environment.

When thinking about disability, you might think of someone who uses a wheelchair or someone who is blind or deaf. However, disability can range across a spectrum both physically and cognitively. While most people see accessibility in terms of the physical world, such as including ramps for entrances, accessibility must also exist digitally.

Digital accessibility is a design goal, specifically in making digital content usable for everyone, but especially those with disabilities. While everyone can benefit from accessible design, it is important to keep disabled people in mind when considering the audience.

Some examples of digital accessibility include

- Using Universal Design principles when creating content.
- Writing effective alternative text for images.
- Writing in plain language.
- Provide informative, unique page titles.

One way of thinking about digital accessibility could be thinking about the different ways someone might interact with your content. For example, someone might use various assistive technology, such as screen readers or joysticks, to navigate the web. This may impact how you use headings or lay out your content.

These changes can be beneficial for everyone. For example, writing in [plain language](#) can make your content easier to read. By implementing accessibility best practices into our content and web design processes, we can make the internet a more inclusive place for everyone, especially those with disabilities.

Why is accessibility important?

Accessibility is important on a legal, ethical, and universal standpoint, and should be considered from the beginning of the design process for any content.

Legality of accessibility

According to Section 508 of the Rehabilitation Act, all electronic forms of information and information technology created by federal agencies must be accessible. The Americans with Disabilities Act (ADA) extends the protections of Section 508 to all businesses. Therefore, it is illegal for digital content to be inaccessible. Implementing accessibility best practices from the beginning will ensure legal compliance throughout the design process.

Ethics of accessibility

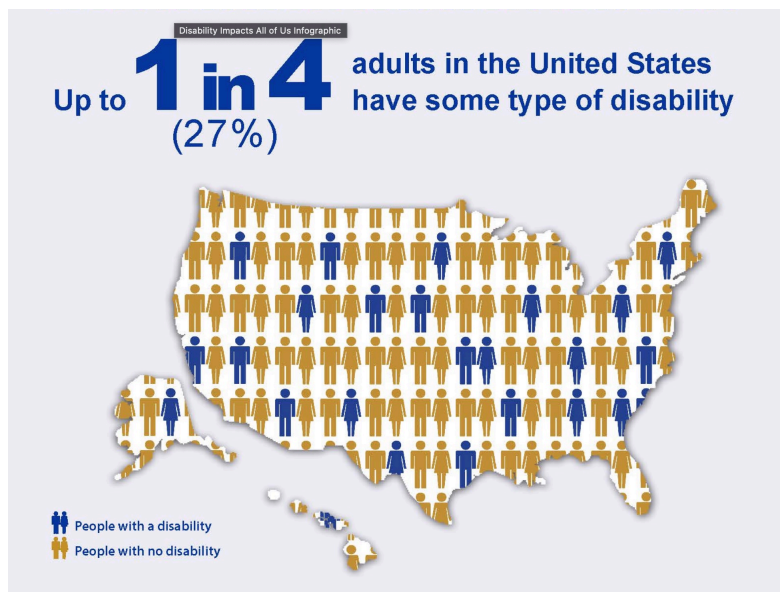
In the 1950s and 60s, there was a summer camp specifically for people with disabilities called Camp Jened. Larry Allison, the director of the camp, said the following about the responsibility of non-disabled people:

"...the problem did not exist with people with disabilities. The problem existed with people that didn't have disabilities. It was our problem. So it was important for us to change."

As creators, we have a responsibility to ensure equity when it comes to navigating digital content. If the people creating an environment or product do not consider accessibility, then those with disabilities are forced to accommodate themselves, creating a more difficult user experience than necessary. The responsibility should not fall on those with disabilities—they should have ease of access from the start.

Universality of accessibility

We tend to think of disability as a rare occurrence, but it is more common than one might think. According to the CDC, about 27% of Americans have a disability. Accessibility can improve usability for everyone, but this is not to undermine the large number of people who rely on accessibility to navigate digital content.



Infographic via [CDC](#)

Disability is also diverse in its experience. One may experience disability permanently, temporarily, and/or situationally. For example, vision impairment could be permanent like blindness, temporary like cataracts, or situational like being distracted while driving. While these experiences differ from one another, all of these experiences benefit from accessibility.

Resources

- [Section 508 of the Rehabilitation Act of 1973](#)
- [Americans with Disabilities Act](#)
- [Crip Camp: A Disability Revolution](#)
- [CDC: Disability Health and Overview](#)

What can we do as digital content creators?

We do not need to be experts to make our digital content accessible. We have a responsibility as creators to ensure that our content can be used by everyone, and that means thinking about accessibility.

What we can do

Make content accessible

One method to ensure accessibility is to take the Universal Design approach when creating content. Universal Design aims for products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. Rather than disability becoming an afterthought, Universal Design considers people with disabilities at the start of the design process and throughout.

Include people with disabilities in the creation of digital content

Some ways to ensure inclusion may be:

- Including people with disabilities in usability testing or user research.
- Having people with disabilities on the team for the project.

When we include people with disabilities in the design process, considering others' experiences becomes inherent in the content design. As a result, people are not cast as "others" when it comes to interacting with your content, allowing for accessibility from the beginning.

Have empathy

Having an empathetic approach allows for a more accessible design. This can include:

- Being aware of stereotypes surrounding disability.
- Avoid using disability-related metaphors.
- Consider the use of person-first language (“person with disability”) versus identity-first language (“disabled person”) based on the preferences of your audience.
- Using inclusive language.

Always keep learning

Resources such as [Web Content Accessibility Guidelines](#) (WCAG) can be a great start when implementing Universal Design into a project. WCAG are recommendations for web accessibility best practices ranked by level of accessibility.

There are other ways to stay informed, such as following news surrounding disability and accessibility and following disability creators and activists on social media.

Resources

- [National Institute of Health: Person-First Language](#)
- [Universal Design and Accessibility](#)

What is alt text?

Alternative text, or alt text, describes the content of non-text content, such as images, graphics, and data visualizations, within the context of the surrounding information on the page.

Alt text is essential for those who use screen readers. A screen reader is a tool that allows users to navigate the web via an audio format. If you're interested in learning more about screen readers, the DOIT Center provides an informative [video demonstration of the screen reading process](#).

Alt text is also useful when images do not load on a page, whether due to poor internet connection or a similar temporary situation. While the purpose of alt text is to provide descriptions for those using screen readers, it can benefit everyone.

Writing alt text is more than just describing an image; alt text needs to provide the user with an experience and sense of understanding. Therefore, it is important to write descriptive, purposeful alt text to create an easier and more accessible user experience.

For more information on how to write effective alt text, see "[How do I write effective alt text?](#)" on page 17.

Screen Readers May Read Out Ugly Filenames for Images Without Alt Text

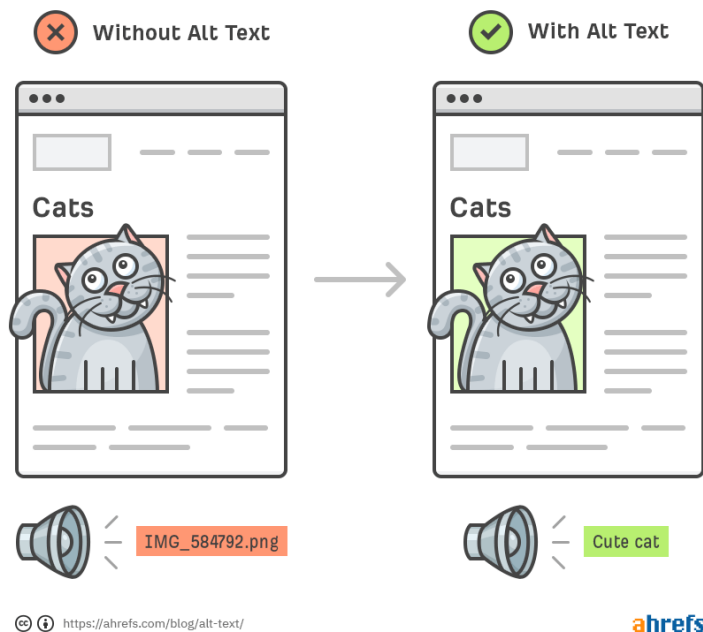


Image via ahrefs.com.

How do I write effective alt text?

Effective Alt Text



"Corgi lounging on the beach."
"Corgi enjoys a relaxing beach vacation."

Ineffective Alt Text



"Dog"
"Picture of dog"
"image1"

Dog Image Credit: [Pixabay](#) via [Pexels](#).

Keep it brief

The recommended length for alt text is 1-2 sentences, totaling around 150 characters. The length will vary based on the image and the surrounding information on the page.

For visuals that require more details, provide a description

When describing complex graphs or infographics, include a description of the content and results. Consider what the graphic is trying to portray or show, such as specific statistics and data. To view an example, refer to the description for the CDC's

infographic [Disability Impacts All of Us](#).

Avoid repetitive language

In general, avoid starting your alt text with phrases such as “An image of.” The screen reader already provides this information, so repeating it in the alt text makes it redundant.

Be sure your alt text differs from the text on your page. Sometimes the content surrounding the image, such as a caption, can serve the purpose of alt text if it describes the content and purpose of an image. If you find yourself repeating information in your alt text, keep it blank.

Be descriptive with the image content

Consider the most important visual details of the image, then try to describe them in as few words as possible.

Keep context and purpose in mind

The content of your alt text depends on why you included the image in the first place. If you’re not sure where to start, consider these questions:

- What is the overall topic of this page?
- Why am I putting this image on this page?
- What visual information do I want users to get from this image?
- What other information did I already provide on the page?

Keep alt text blank for decorative images

When you have a graphic or an icon used for decoration, leave the alt attribute blank. Decorative images do not add additional information to the surrounding content. Screen readers will indicate this is null alt text and skip over it. In HTML, the alt attribute would look like this: alt="".

Avoid plugging in keywords for SEO purposes

Search engine optimization (SEO) tools will scan alt text for keywords. While alt text can increase SEO, do not plug in keywords to increase SEO. Alt text should still be readable and accurate.

Avoid using the title attribute for alt text

Title (title=" ") is an HTML attribute often used for tooltips and has often been incorrectly used to replace alt text. One feature of the title attribute is that it is only visible when the user hovers over the image, making it unreadable by those using tools other than a mouse. Therefore, the title attribute cannot replace alt text because its visibility relies on specific user actions and input methods.

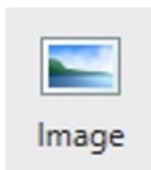
Resources

- [WebAIM: Alternative Text](#)
- [ahref.com: Alt Text for SEO](#)
- [W3C: Decorative Images](#)

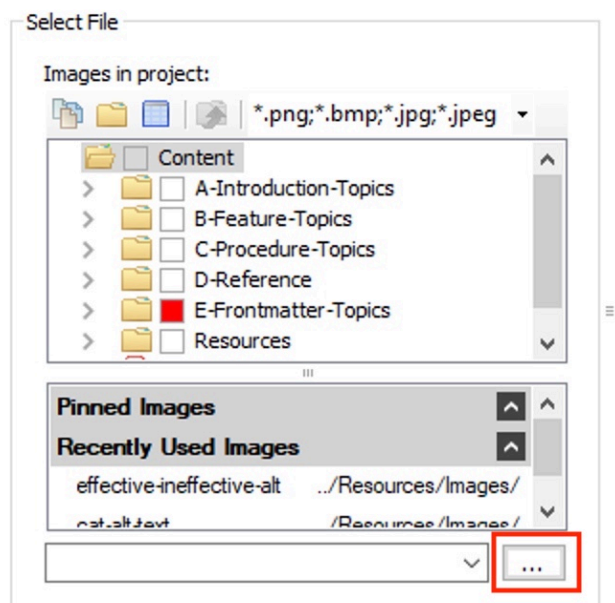
How do I add alt text in MadCap Flare?

When inserting an image for the first time

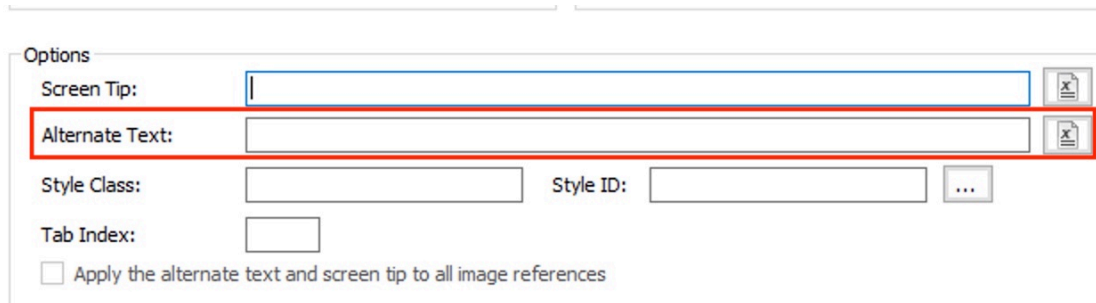
1. Open the topic page you want to insert an image into. Place your cursor where you would like the image to appear.
2. Click **Insert**, then click **Image**. The Insert Image dialog opens.



3. Click the ellipses under Select File.



4. Locate your image, then click **Open**.
5. Type your alt text into the Alternate Text field.



Options

Screen Tip:

Alternate Text:

Style Class: Style ID: ...

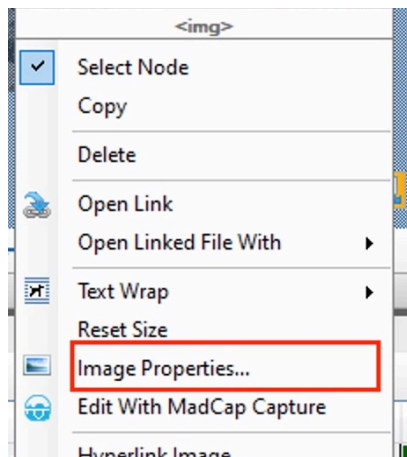
Tab Index:

☐ Apply the alternate text and screen tip to all image references

6. Click **OK**. The Copy to Project dialog opens.
7. Click **OK**. The image appears on your topic page.

When you have already inserted an image

1. Right-click the image you want to add alt text to.
2. Click **Image Properties**. The Image Properties dialog opens.



3. Type your alt text into the Alternate Text field.
4. Click **OK**.

When using HTML

1. Click **Text Editor** in the XML editor window. The HTML text editor window opens.



2. Locate the image in the code, as indicated by the tag.
3. Click inside the tag so your cursor is before the forward slash.

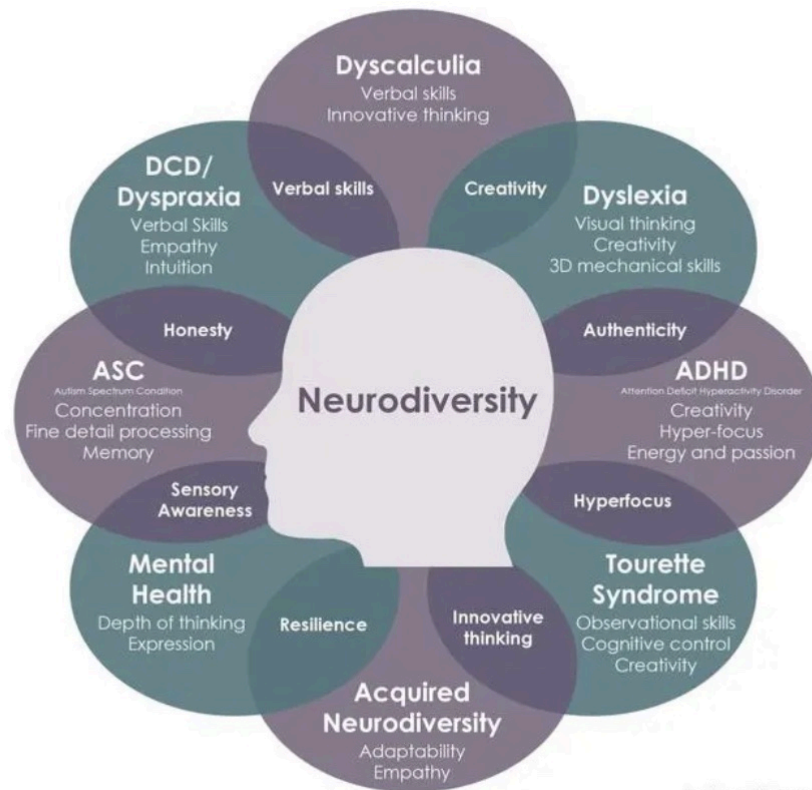
```
ility-statistic.jpeg.jpg" | />  
f="https://www.cdc.gov/">CDC</a
```

4. Type **alt=""** and type your alt text between the quotation marks.

```
.jpeg.jpg" alt="1 in 4 adults in the United States (27%) have some type of disability">
```

What is neurodivergence?

Neurodivergence is an umbrella term to describe the different experiences and interactions one may have with the world around them. The term often refers to those with neurological, cognitive, or developmental conditions such as autism, ADHD, and dyslexia. Understanding neurodivergence can help create a more accessible online experience for cognitive needs.



Dr Nancy Doyle, based on the work of Mary Colley

Infographic via [Forbes](#). Designed by Dr. Nancy Doyle.

Neurodiversity as a social movement

The term “neurodivergent” is a relatively new term to describe those with specific cognitive needs. The push for “neurodiverse” as the preferred term is not just in a clinical sense, but also in terms of social justice, research, and education.

Neurodiversity arose from the social disability model, which views the environment as failing to accommodate those with disabilities rather than relying on those with disabilities to adapt to the world around them. The movement aims for inclusion, acceptance, and equality.

With the rise in neurodiversity comes the rise of self-advocacy for neurodivergent folks, especially regarding their involvement in and contributions to conversations about neurodivergence. Self-advocacy promotes agency and empowerment, whether this is in the context of someone’s personal life or challenging the misconceptions surrounding neurodiversity. As online content creators, it is essential to highlight the needs of neurodivergent folks as expressed by neurodivergent folks to create accessible content.

Language and neurodiversity

Language is an important element of neurodivergent advocacy. Some people prefer person-first language (a person with autism), while others prefer identity-first language (an autistic person). When describing neurodivergence, consider your audience and their preferences.

Resources

- [Harvard Health - What is neurodiversity?](#)
- [DO-IT - How to Be an Ally of the Neurodiversity Movement](#)
- [CalTech - Neurodiversity: A Brief History](#)
- [Autistic Self Advocacy Network - What We Believe](#)

How can we make digital content and websites accessible for neurodiversity?

Neurodivergence comes in many forms, and needs will differ from person to person. While these practices may not address every facet of neurodivergence, considering cognitive accessibility can help address a wide range of needs.

Potential situations designers should consider

Some users, neurodivergent or not, might experience certain situations when navigating the web. They might

- Experience sensory overload due to an overwhelming amount of colors or moving elements.
- Have difficulty completing tasks due to time limits, such as buying tickets or completing a test.
- Have difficulty completing tasks involving reading comprehension, word recognition, spelling, math, and memory.
- Get sidetracked easily.

While there are additional tools that users can activate to increase cognitive accessibility, keeping these situations in mind during the design process can help create more accessible content in the first place.

Best design practices

Here are a few things to consider in the design process to make your content more neurodiversity-friendly. A helpful acronym to help remember these practices is P TRAIN.

Predictability

Content and navigation should appear the same consistently across a website. Consistency should occur in both page layout and interactive elements.

Some examples of creating predictable content include

- Consistent navigation — the location of the navigation bar and the order of navigation links should stay the same.
- Consistent labels — elements with similar functions should have the same labels.
- Consistent icons — iconography should have the same meaning across a single site or document.
- Notifying the user when you need to redirect them to a different page.

Time

Provide users enough time to read and interact with content. Commonly used time limits on sites include logging out after inactivity or a countdown timer to buy tickets for a show or complete a form. Extending or removing time limits is especially helpful for those who get distracted easily or may need more time to read.

You can give your users enough time by

- Providing a toggle to turn off or extend time limits on tasks.
- Giving them ample opportunity to extend their user session (20-30 seconds).
- Respect accommodations for tasks that need to be completed in under 20 hours.
- Ensure that users can continue an activity without losing their progress, and provide warnings when they might.

Readability

Make text content easy to read and understand by using plain language, defining site-specific terms and abbreviations, and providing pronunciation. Some ways you can increase readability include

- Declare the language in the HTML of the page using the <lang> attribute.
- Spell out and define abbreviations upon first use.
- Use [plain language](#).
- Provide the pronunciation of a word.

Adaptability

Content should be able to be presented in multiple formats, including on different devices, without compromising information or ease of navigation. Examples include creating responsive layouts or implementing best practices for screen readers.

Input Assistance

When asking users to input data, such as typing information into a form, try to reduce the likelihood that users will make a mistake. Provide clear feedback when users do make mistakes, such as through automated error detection systems and instructions for remedying the mistake.

Navigation

Provide ways for users to easily navigate websites. Making your content navigable can help users find content with ease, especially those who read slowly or have a short-term memory.

Proper navigation could include

- Adding the <title> attribute to HTML pages.
- Writing clear and descriptive headings and labels.
- Providing multiple methods to find content, such as a table of contents or a search function.
- Writing text for hyperlinks that describe the content and destination of the link.

Related WCAG guidelines

We can look at some related Web Content Accessibility Guidelines (WCAG) to make digital content more accessible for those with neurodivergence. Some examples include controlling audio, controlling content that moves automatically, and removing time limits on tasks.

For more information on guidelines related to neurodivergent-friendly design, refer to [WCAG's article on designing for neurodiversity](#).

Resources

- [WCAG - Digital Accessibility and Neurodiversity: Designing for Our Unique and Varied Brains](#)

- [Mozilla - Cognitive accessibility](#)

What We're About

About this project

Avenues to Accessibility was created for UMass course English 381 as part of the [Professional Writing and Technical Communication](#) (PWTC) program. This project uses MadCap Flare 2023 with both HTML and PDF output. All the content was drafted in Google Docs. All customized content, such as the logos and the pattern design on the PDF, were designed using Adobe Illustrator 2023.

I have ensured that my project is accessible by implementing the following:

- Descriptive headings and following heading semantics
- Descriptive alt text to all images
- Descriptive link text
- Descriptive page titles
- Proper semantic elements (such as with headings and lists)
- Chunking information into small paragraphs/sections
- The [WAVE checker](#) on all of my HTML output pages
- The PDF accessibility tools in Adobe Acrobat Pro

About me

My name is Emma Gill, and I am currently a senior at University of Massachusetts Amherst majoring in English and minoring in Information Technology.



I am also pursuing a certificate in Professional Writing and Technical Communications (PWTC). The coursework focuses not only on technical writing but also web accessibility. For all projects in the program, including this one, accessibility is essential in the design process. With my current knowledge of accessibility from my coursework, I have been able to not only complete these projects but also share my knowledge of accessibility to places outside of UMass, including companies that I have interned for.

Through my studies I'm able to explore both my creative and technological passions. I further fuse these passions with my specializations in the Study and Practice of Writing as well as PWTC, which allow me to go from studying rhetoric, to developing InDesign skills in a publishing context, to designing an HTML portfolio. I also utilize my Commonwealth Honors coursework to explore creative writing, and I have completed a collection of short stories, personal essays, and poetry for my thesis. With experience and passion in both writing and technology, I hope to become a technical writer in the future.

Feel free to reach out via [email](#) or [LinkedIn](#)!