Accessible Design Infographics

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Digital Integration Teaching Initiative
JRNL5480: Research for Media Strategy
Spring 2023

Northeastern University
NULab for Texts, Maps, and Networks

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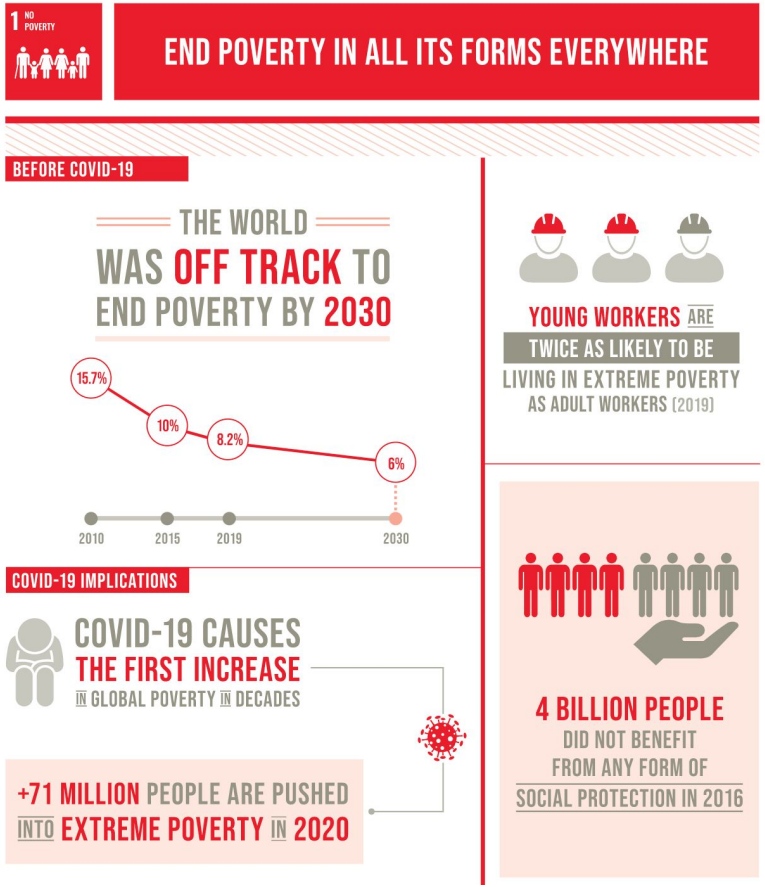
Workshop Agenda

- Learn about infographics as a mode of conveying information in a manner accessible to the most users.
- Review elements, formatting, and best practices of infographics
- Explore how to make infographics using a free online tool
- Discuss big takeaways for data visualization

https://bit.ly/sp23-chung-jrnl5480-canva



SDG Report 2020

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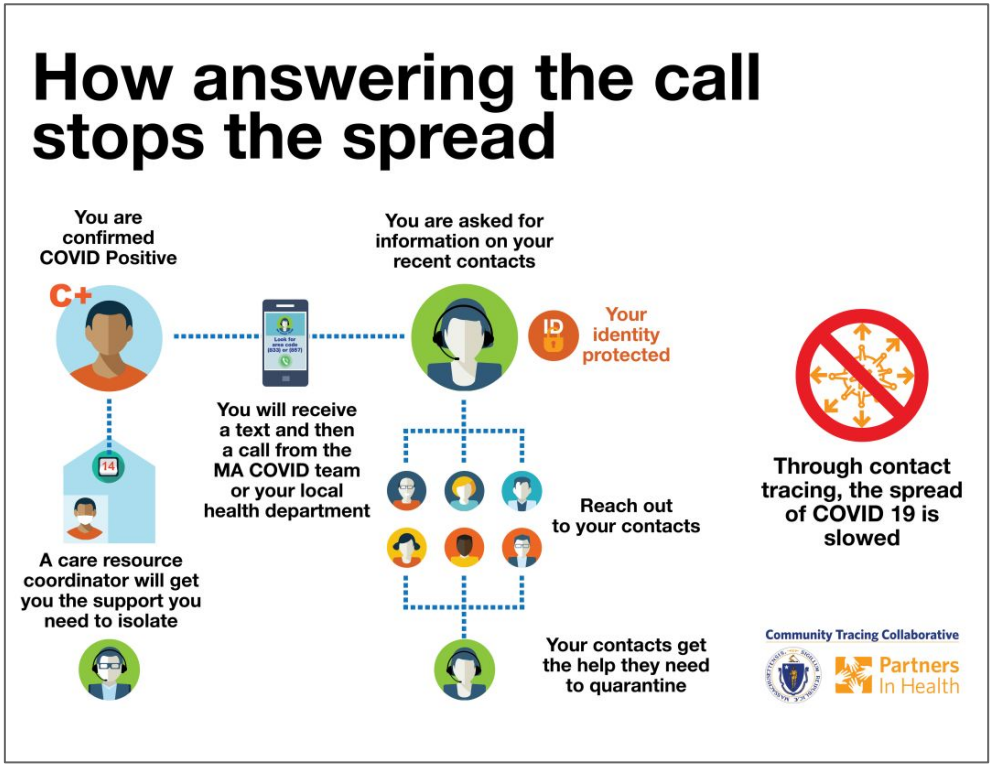
Infographics

https://venngage.com/gallery/post/true-colors-what-your-brand-colors-say/



https://www.mass.gov/info-details/learn-about-the-community-tracing-collaborative

What is an Infographic?

- Presents complex information quickly and clearly, using the processing power of human visual systems
- Tells a story with information, mostly images: numbers, charts, graphs, summary text
- Shows factual information and/or argues a point in a fun and non-confrontational way
- Can be as simple as a road sign or as complex as a visual analysis of global economies

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Why make an Infographic?

Infographics open up several opportunities for more effective communication, to:

- **Catch the attention of new users/audiences** who previously may not have interacted with your data.
- **Manage a large influx of information** without overloading audiences. Infographics help summarize "need to know" information all allow it to be consumed and processed.
- **Develop concise and simple visuals** to help audiences navigate and understand large amounts of data and research
- **Reach across platforms and mediums.** Infographics are well-suited for both print and digital circulation and sharing. You might print your infographic as a conference poster or share it in online communities!

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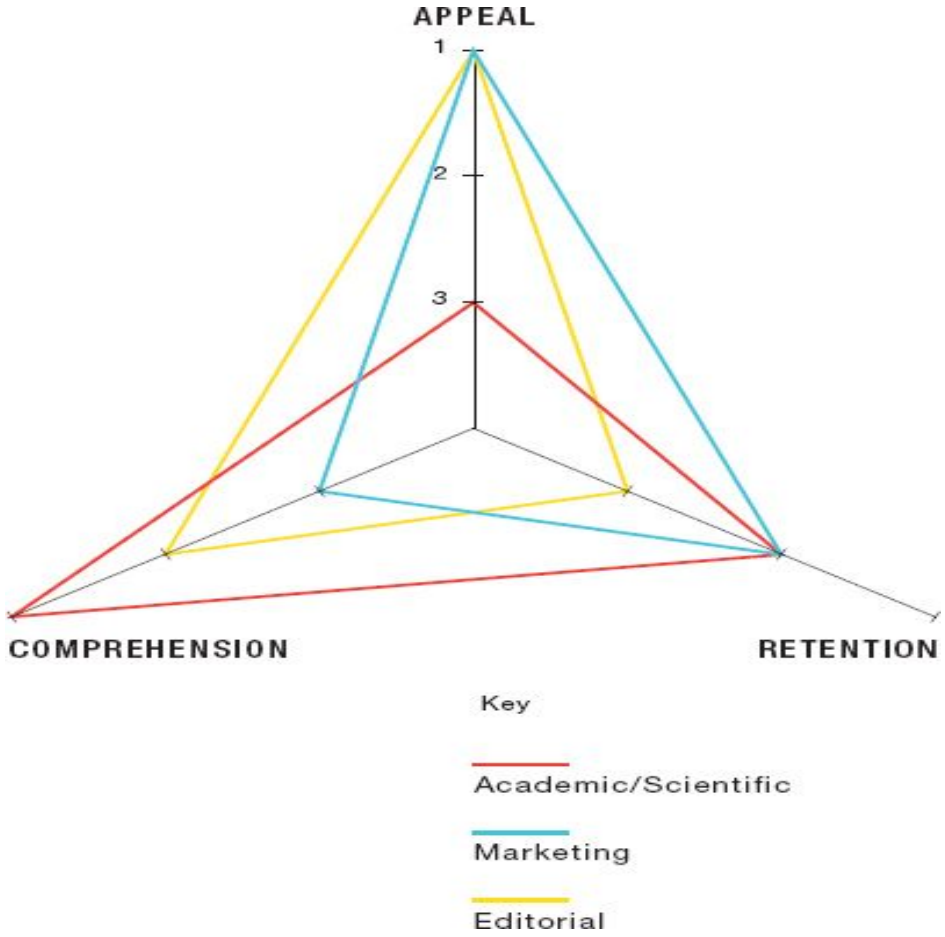
What's going on in this graphic?



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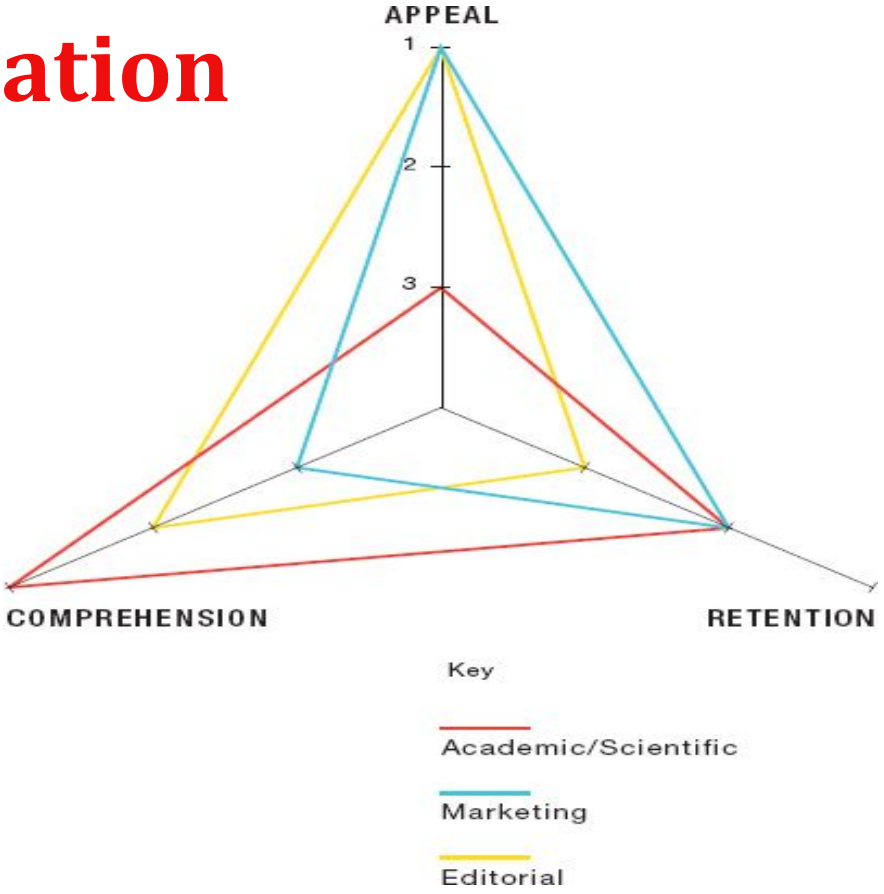
Objectives of Visualization

All information graphics are aimed at communicating information. What varies is the purpose for doing so. This purpose determines a graphic's priorities to a varying degree: *Comprehension, Appeal,* and *Retention.* **Consider your audience. What would help different people understand the information in the graphic?**



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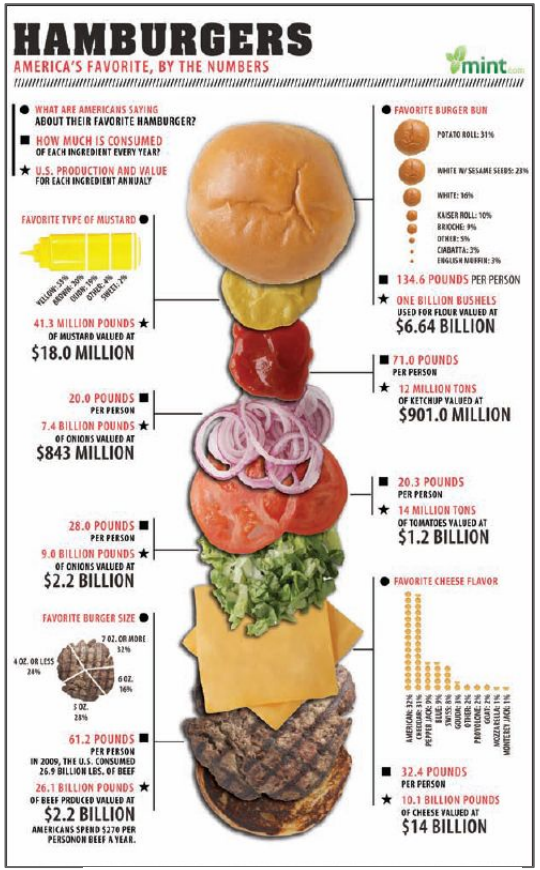
Infographic Formats

Static Infographics:

- Typically fixed information. The display output is a still image.
- User interaction consists of viewing and reading.
- Works best as a narrative but can be explorative in some cases.
- This “Hamburgers” example shows the economics of the hamburger industry and each component layer.



Ross Crooks, *Column Five for* Mint.com.

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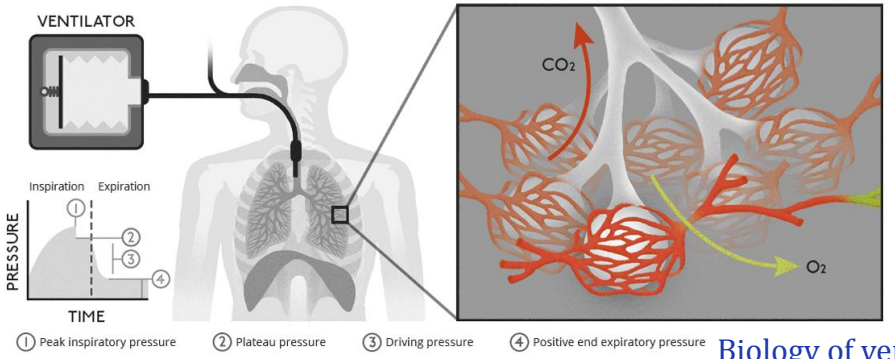
Infographic Formats

Motion Infographics:

- Typically fixed information. Display output is animated, or moving.
- User interaction consists of viewing, listening if there is voiceover, and reading.
- Best used when objective is to communicate a single linear story
- See this example



Biology of ventilation

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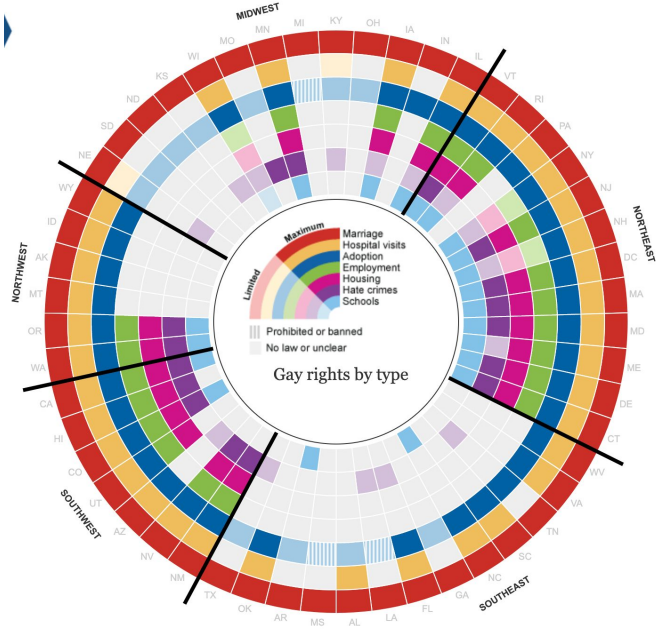
Infographic Formats

Interactive Infographics:

- Can be fixed or dynamic information input.
- User interaction consists of clicking, searching for specific data, actively shaping the content displayed, and choosing which information is accessed and visualized.
- Can be narrative, explorative, or both.
- Useful for large amounts of data, can draw the user in to encourage further exploration.
- See this example infographic
- More examples



Gay rights in the US, state by state, The Gardian

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Elements of Infographics

- An infographic is all about the same topic
- Infographics usually have short and accessible titles
- Infographics typically present information in a particular order: widest view of the topic first and then details
- Effective academic infographics include citations for all of the information included, in small print at the bottom
- Infographics present information that responds to the most obvious or biggest criticisms of an argument
- Infographics can appeal to an audience in a relaxed way that does not threaten the audience or aggressively push opinions

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What Makes a Good Infographic?

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What makes a good infographic

- A good infographic should leave its reader feeling informed about and interested in the topic.
- **Utility:** You should employ an objectives-based approach, provide information in an unbiased fashion, enabling viewers to analyze it and arrive at their own conclusions.
- **Soundness:** You should communicate something meaningful, provide readers with something of value
- **Aesthetics and design:** You should consider format and design quality to deliver an appealing, accurate and high quality visualization

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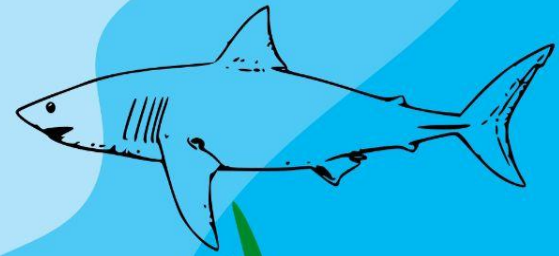
95%

Millenials not saving adequately for retirement

Dolphin: horizontal dorsal fin



Shark: vertical dorsal fin

Tips for Designing Infographics

1

Pick a topic and a theme that "fit together"

Look at this one; the topic is a "how to" and the theme is that of a classroom chalkboard. This kind of synergy helps your message!

2

Structure it "chronologically"

It helps readers to go in one direction; most people read from top to bottom, left to right, so that's the simplest place to start!

* still, don't be afraid to get creative! What matters is that it's easy to follow!

* graphic details like your use of font or elements should also fit your theme!

3

Lastly, Make it fun!

Do that little bit of extra effort to add in some small details throughout.

* They might not directly help your argument, but will make your work pop and help folks appreciate what they're learning!

What makes an accessible infographic

- **Color choice and contrast**
  - Some colors may be easier to see than others. Adee Vision Simulator on Canva shows how images appear to people with color-blindness.
  - Colors with higher contrast from the background are easier to read.
- **Font choice and size**
  - Sans-serif fonts are easier to read than *Decorative fonts*
  - Serif fonts have tapers on letters to help distinguish each letter but are generally harder to read than Sans-serif fonts
  - Larger, bolder fonts stand out and designate importance
  - Overcrowding text makes the information harder to read

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What makes an accessible infographic

- **Text positioning**
  - Place content appropriately so text is not cut off or covered by image
- **Media link names**
  - Use descriptive link names such as “Link to Infographics Presentation”
- **Image alt-text and captions**
  - You can add descriptive, alt-text to your final infographic image by editing its image properties

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Discussion: Accurately Representing Data in Visuals and Infographics

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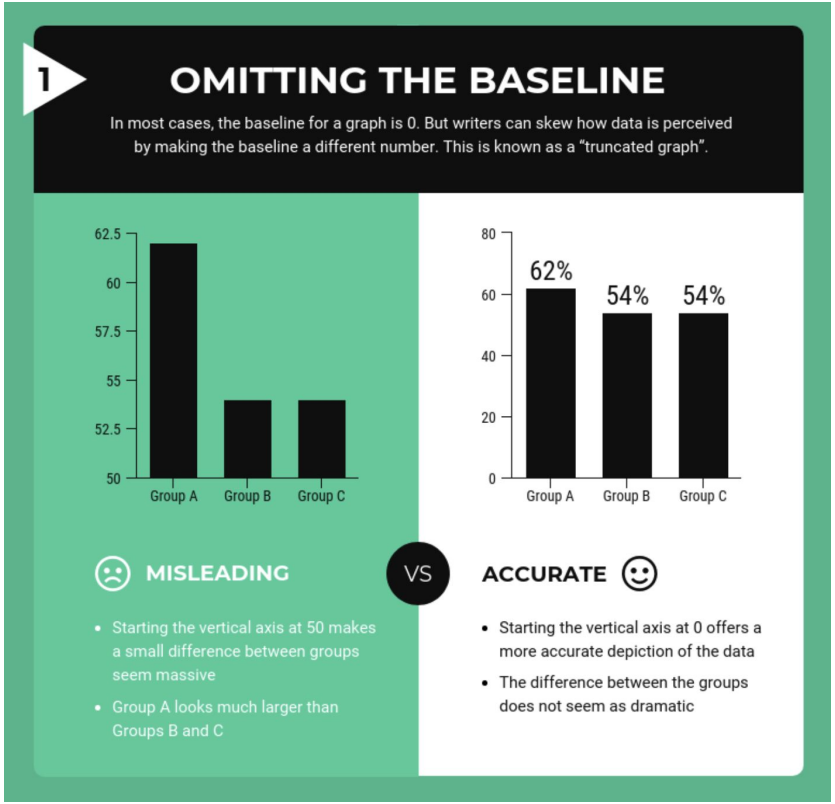
Limitations of Charts, Diagrams, Graphs, & Maps



Discussion:

- What **commonalities** do you notice among the more misleading and more accurate versions of graphs and charts in these examples?
- How would you define "**accuracy**" in the context of data presentation? Why is that question essential to ask?
- In what **contexts** does it make the most sense to use these kinds of visuals to present data? Are there other times where they're inappropriate? How so?

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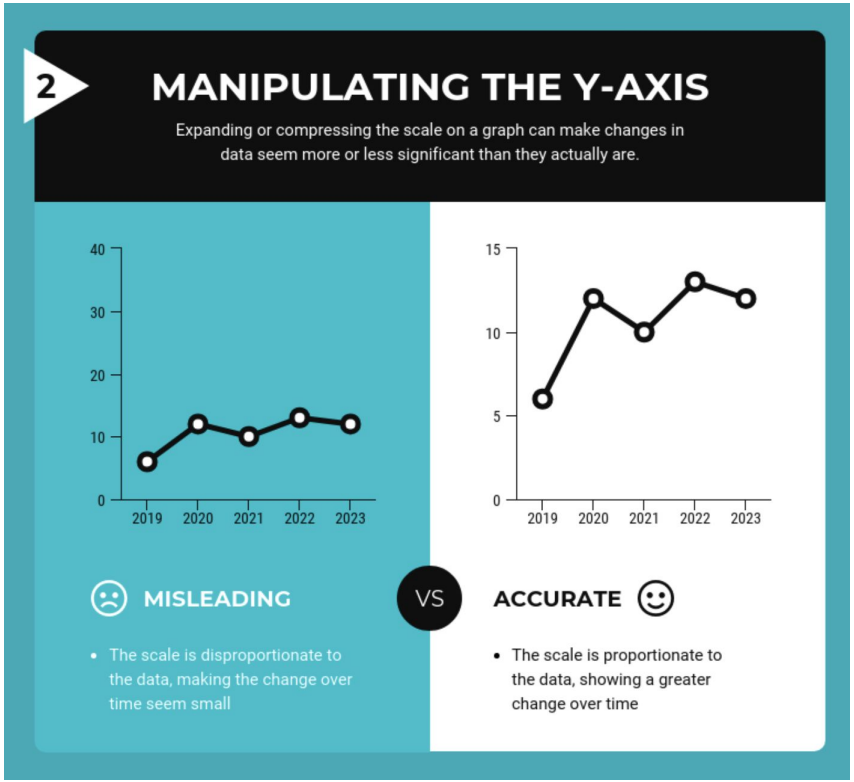
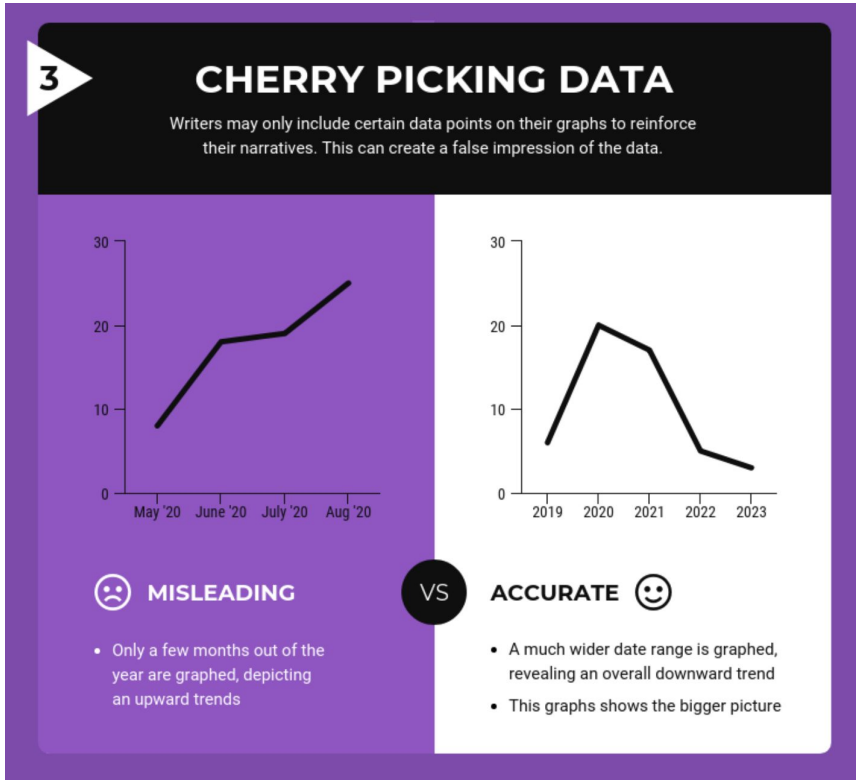
More limitations with presenting data using **CHARTS and DIAGRAMS:**





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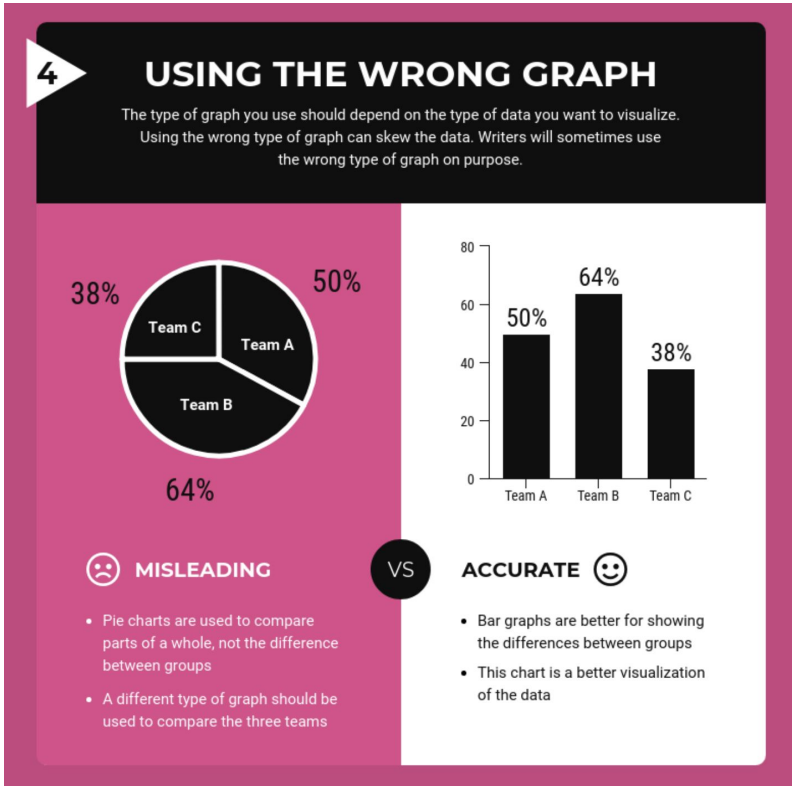
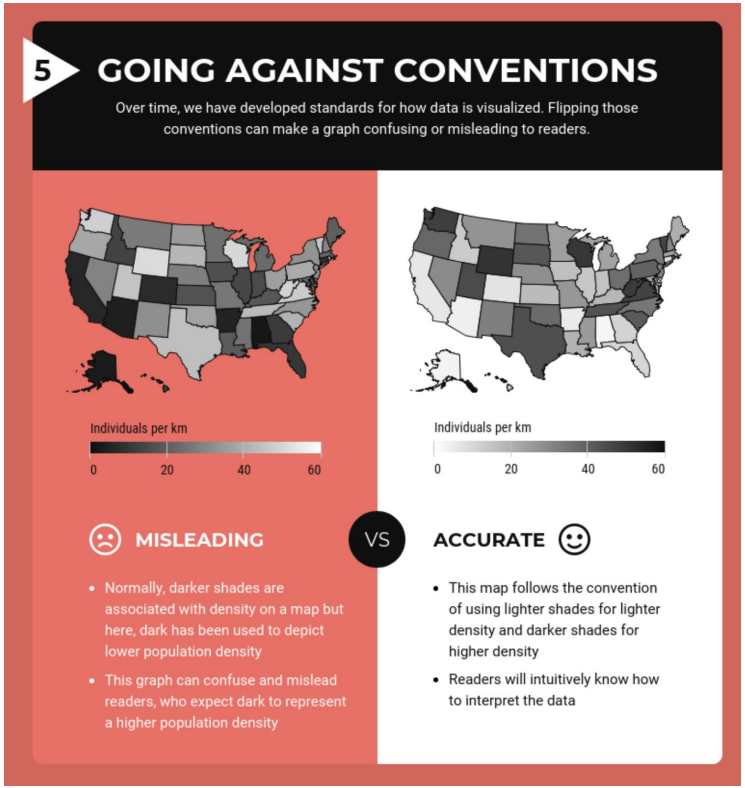
More limitations with presenting data using **GRAPHS and MAPS:**





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Discussion: Inaccessible and Misleading Visuals

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Misleading and Inaccessible Design: Color Contrast

Discussion:

- How easy to read is the information on the high contrast and low contrast flowcharts?
- The bottom image shows the same image with a color blindness filter applied. What is different?
- How does the user experience of the flowchart change? What information do color-blind users miss if the chart has low contrast colors?

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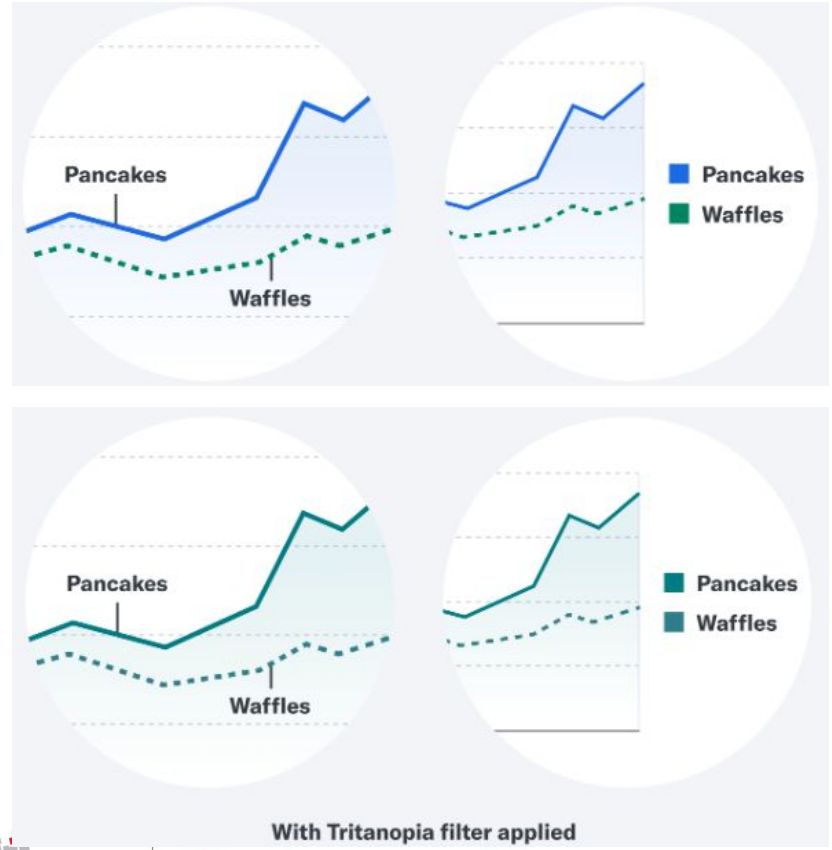
Misleading and Inaccessible Design: Labeling



Discussion:

- Which type of labeling do you think is easier to read?
- The bottom image shows the same image with a color blindness filter applied. What is different? How do the images look to people with Tritanopia?
- How does the user experience of the graph change? What information do users miss if the graph uses indirect labels?

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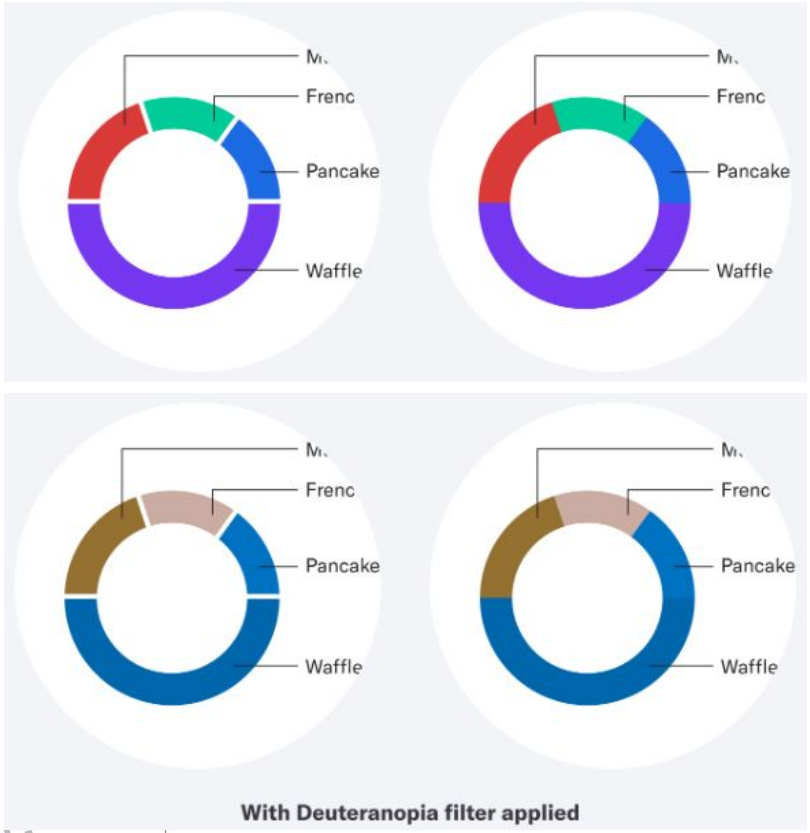
Misleading and Inaccessible Design: Negative Space



Discussion:

- Which chart do you think is easier to read?
- The bottom image shows the same image with a color blindness filter applied. What is different? How do the images look to people with Deuteranopia?
- How does the user's experience of the graph change?
- Note that you could use patterns to distinguish the groups but it may be visually overwhelming.

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Data Presentation Considerations

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Data Presentation Tips

- **Put your conclusions/argument in the title**—this will allow viewers to understand the gist of the information quickly
- **Create your own tables**, or make sure use only images that are shared with permissions that support reuse—and always cite your sources!
- **Be sure to present your data *accurately***—be mindful that your charts, graphs, maps, and infographics are scaled and structured to present data and conclusions *completely* and *correctly*
- **Use visual representations of numbers**—this will help concretize abstract concepts
- **Label judiciously**, but don't overwhelm the viewer with dense text
- **Beware of trying to make too many points in one graphic**—focus on the big takeaways

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Misrepresentation of Data

From D.B. Resnik, in International Encyclopedia of the Social & Behavioral Sciences, 2001:

"*The concept of 'misrepresentation,' unlike 'fabrication' and 'falsification,' is neither clear nor uncontroversial. Most scientists will agree that fabrication is making up data and falsification is changing data.* ***But what does it mean to misrepresent data? As a minimal answer to this question, one can define 'misrepresentation of data' as 'communicating honestly reported data in a deceptive manner.***"

- This **online book from The Data School** covers some common ways data could be misrepresented at multiple points in the process of gathering, analyzing, and presenting findings on data-based research.

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Limitations of Some Data Presentation Methods: Charts, Graphs, Diagrams, Maps

- The **structure** and **scale** of charts and graphs could be **manipulated** to amplify or diminish differences
- **Different types** of graphs and charts work better for some types of data presentation than others—for example, a pie chart and a line graph might not both be able to represent the same data accurately
- A chart with **too much information** will be difficult to understand, but **too little information** could be an indication that data has been cherry-picked to support an argument
- There is **limited space** in an infographic for in-depth analysis; nuances can be flattened and obfuscated

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Getting Started with Making an Infographic

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Tools for creating infographics

These four tools can perform the same basic functions, but vary in their application, graphic aesthetics, and minor data modeling options:

- Infogram
- Piktochart
- Venngage
- Canva

For more information on each, see handout

Feel free to ask questions at any point during the presentation!

How to make an infographic

1. **Goal:** Define your audience and goal of your infographic
2. **Data:** Gather information and data that supports your goal
3. **Plan:** Decide the type of infographic best suited for your goal, plan the content, provide structure/logical hierarchy to your data
4. **Build:** Use a tool/template to build your infographic
5. **Improve:** Test different visualization elements to improve audience engagement and impact of your infographic

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Canva Demo

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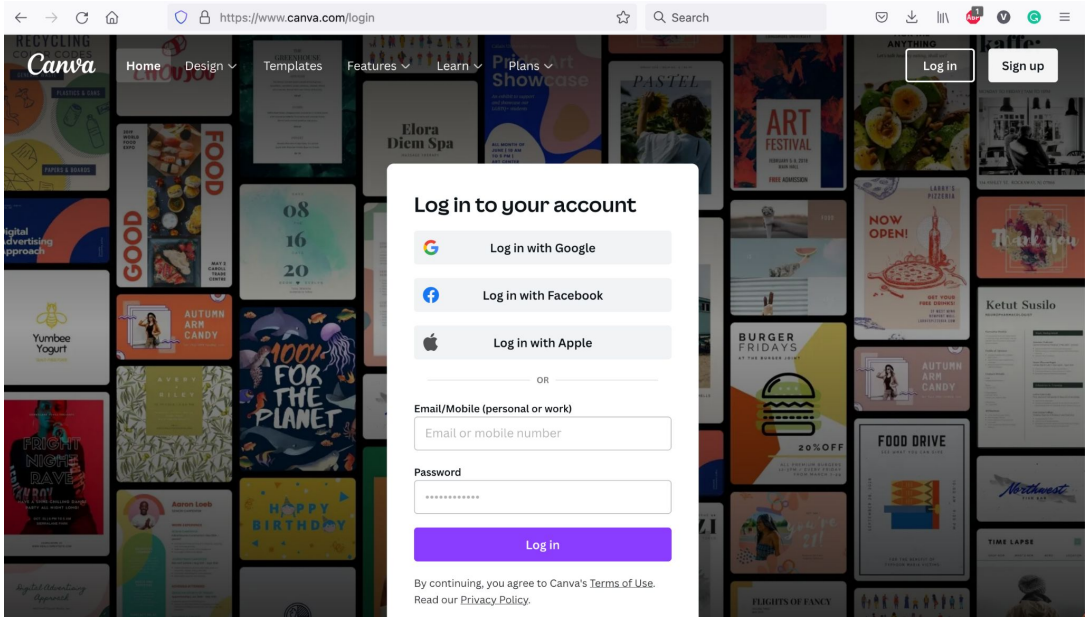
Sign up/Login

- Canva is a free online infographic maker
- Use your Gmail/Facebook/Apple ID to sign up or create an account
- Click ‘Create A Design’



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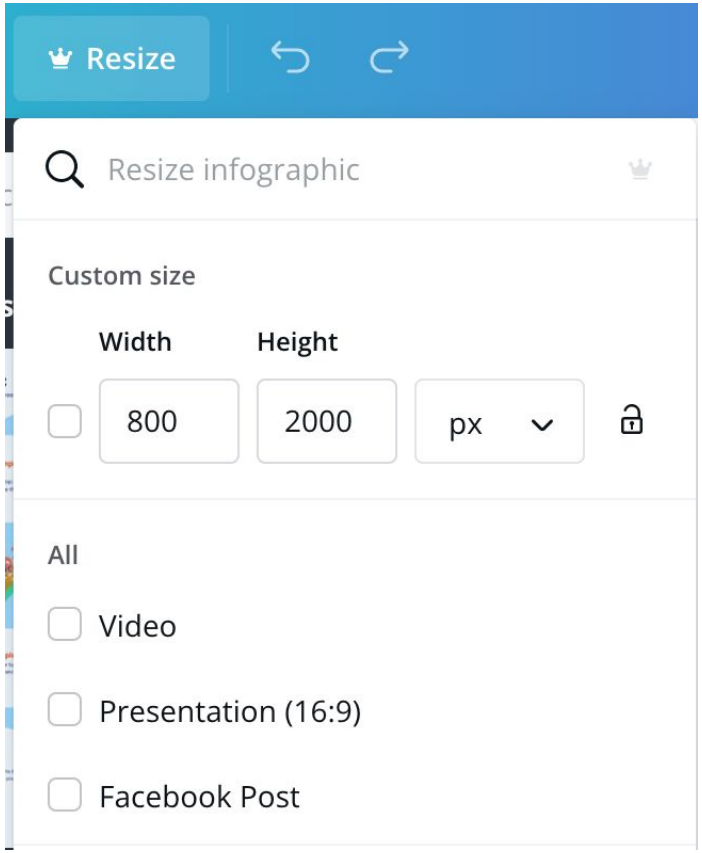
Starting up...

First, pick your canvas dimensions. Canva features a curated “infographic” size, but you can customize the width and length at any time with the resizing option. You can also add more “pages,” though infographics generally come as a single image.

Infographics work best when presenting information through one direction, so it might help to size your canvas as being long either vertically or horizontally!



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Pick a style

Infographics work best when presented in a uniform style. Try to get your information and your design to work together! If you need some help or inspiration, Canva offers several infographic templates you can start from.

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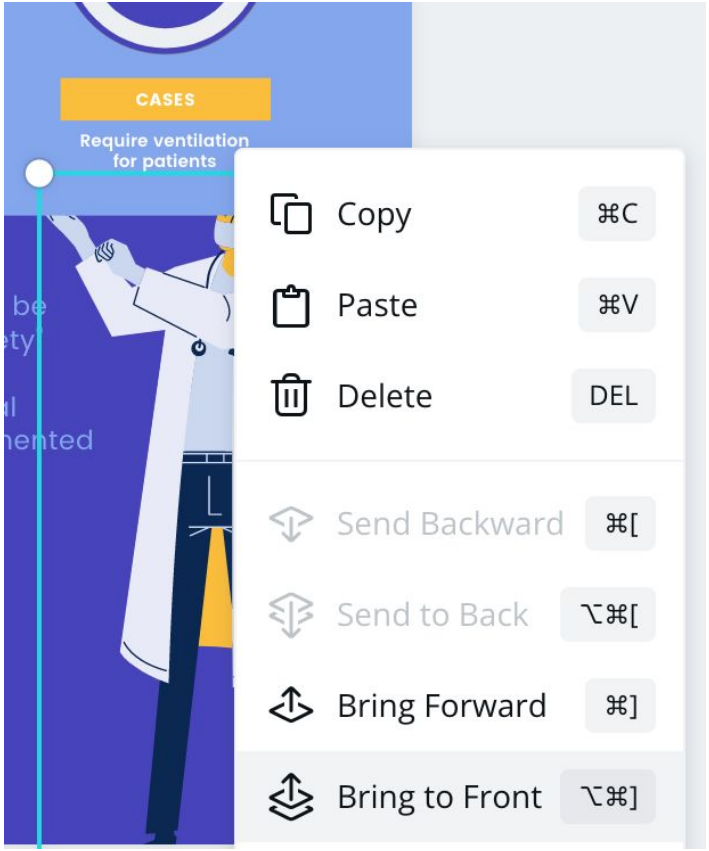
Playing with layers

Canva, like other infographic tools, works by combining several graphic layers. Layers can be anything that shows up on the canvas—elements, charts, text, etc.—and can be customized in many ways. You can drag them around, change their colors, resize them, and more!

Remember that you can always send a layer “forward” or “back” relative to other layers with a right click on PC, control click on Macs (or use the key commands shown at right) →



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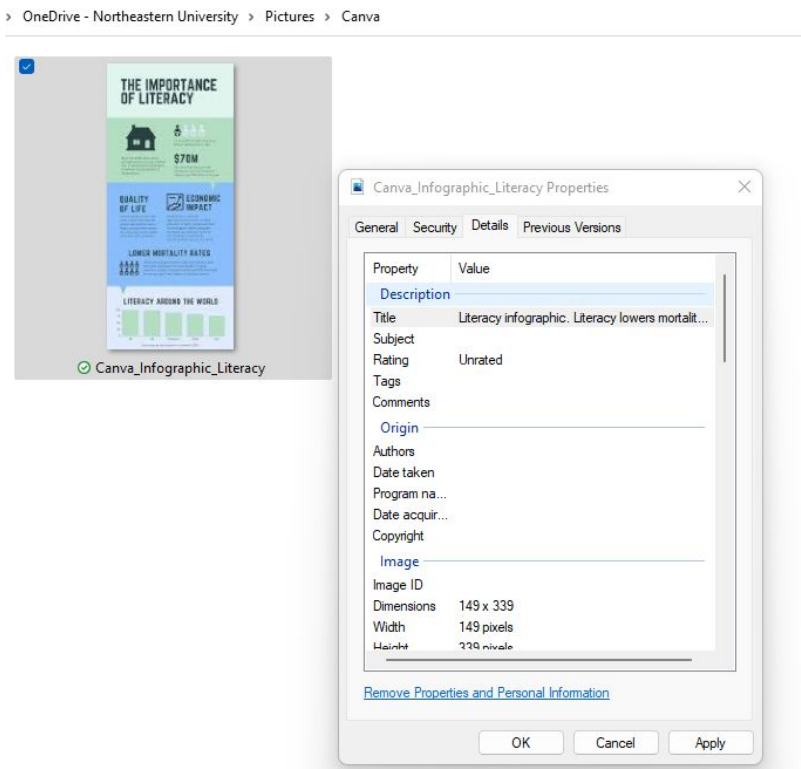
Adding Alt-Text

Alt-text is a description of an image that conveys the image content and meaning. This descriptive text is attached to the image file properties.

People with low or no vision can use assistive technology like screen readers to hear the alt-text description of digital images. When a screen reader reaches the image, it will read aloud the alt-text description.



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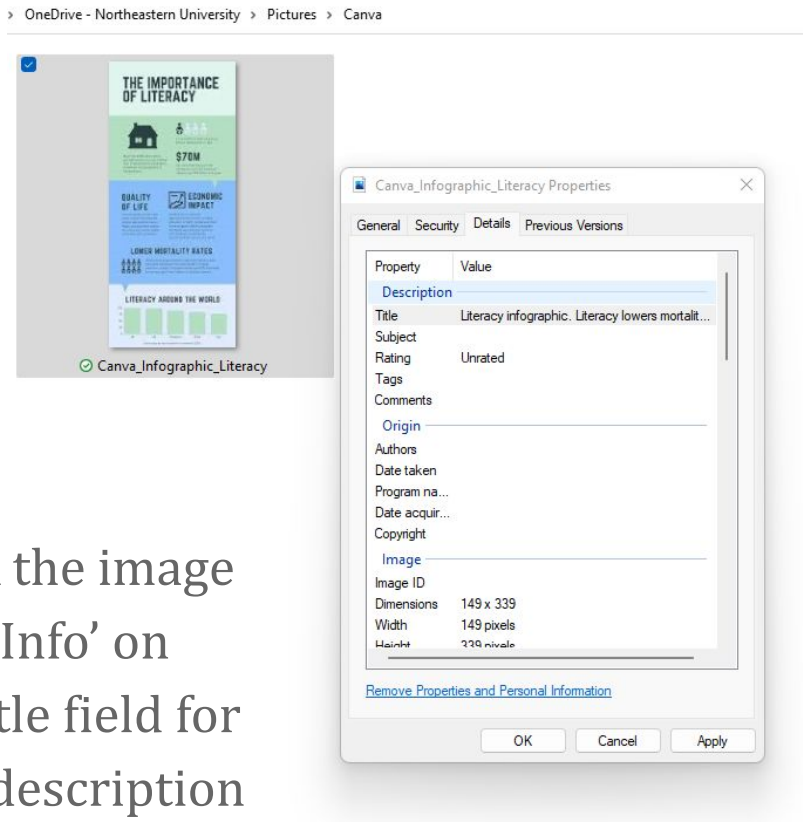
Adding Alt-Text

Once you have finished your infographic, you can export the file as an image.

File>Download>Choose an image file (PNG, JPEG)

Share>Download>Choose an image file

Find the image in your file directory. Right-click the image and click ‘Properties’ if using a PC , or click ‘Get Info’ on Macs. Choose the Details tab and click on the Title field for PCs. On Macs, edit the Comments field. Write a description of and insights from your infographic.



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Infographics Takeaways

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Effective infographic projects

1. Contain **appealing** and **vivid details** (e.g. charts, visuals, alt-text)
2. Have a specific and **easy-to-understand title**; concise and **brief set-up**
3. Offer an effective **demonstration of project's goal** and provide information **aimed toward the proposed audience**
4. Make the problem relevant and **appeal to the audience**
5. Contain **excellent syntax and vocabulary**, explain terms/jargons, have **proper citation**

Feel free to ask questions at any point during the presentation!

Your turn! Make an infographic:

Using your SPSS results from Practicum 2, please create infographics in Canva to convey:

1) How many people have (or have not) volunteered for a non-profit organization work.

2) How respondents discovered their most recent volunteer position.

3) How likely respondents are to volunteer for a homeless shelter.

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Your turn! Make an infographic: Assignment Guidelines

1. Develop an argument or story to tell with your SPSS results.
2. Think of ways to introduce your argument or story, and which infographic style supports your storytelling.
3. Choose a few pieces of information and data that support your argument, and the appropriate charts, graphs, or images to illustrate them.
4. Think of counter arguments, and consider ways to address them through text or graphics.

Feel free to ask questions at any point during the presentation!

Thank you!

If you have any questions, contact DITI at nulab.info@gmail.com

Developed by:
Vaishali Kushwaha, Javier Rosario, Claire Tratnyek, Shunan You, Dipa Desai, and Anna Zhang

Taught by: Ana Abraham and Dipa Desai, DITI Research Fellows
Slides, handouts, and data available at:

https://bit.ly/sp23-chung-jrnl5480-canva

We'd love your feedback! Please fill out a short survey here:

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