Introduction to Universal Design for Learning & Accessibility

Leanne Riseley - Leeward Community College

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Session Objectives

In this session, you will:

- Describe the Universal Design for Learning (UDL) framework.
- Apply web accessibility for text and images to a document.
- Identify free web accessibility checkers to check your content.
- Find close-captioned YouTube videos.

Universal Design

Universal Design provides access for:

- Physically Disabled
- Elderly
- Children
- Strollers/Carts
- Wheeled luggage
- Bikes

Unintended consequences

Universal Design for Learning

Universal Design for Learning
Closed Captioning provides access to:

- Deaf
- Hearing Impaired
- Non-native English speakers
- Environments where sound is not appropriate

CAST 25 YEARS OF INNOVATION 1984-2009

Transforming education through Universal Design for Learning — http://www.cast.org

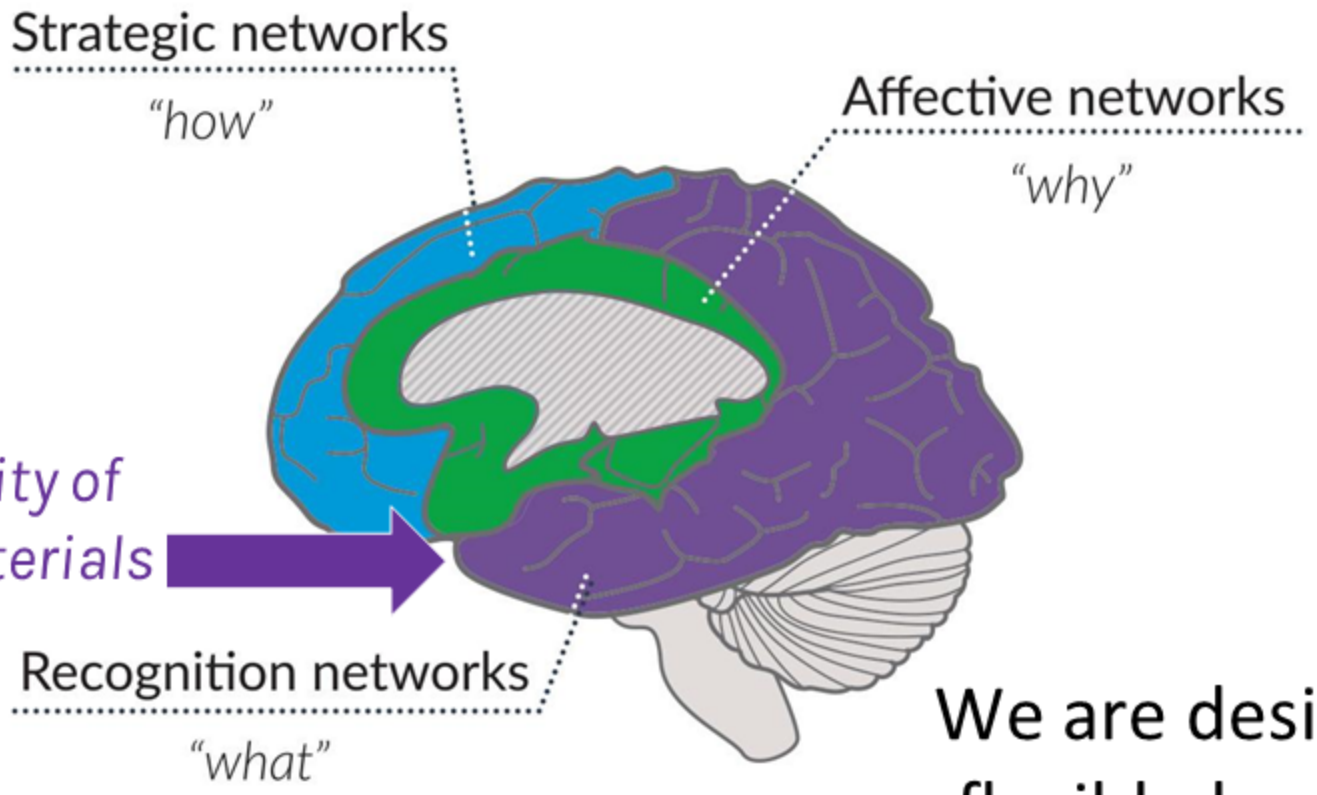
UDL at a glance

Learning
for
All
Students
Minimize
barriers
Maximize
learning
UDL

Universal Design for Learning

UDL is a proactive design approach to ensure the learning environment is usable by all people, to the greatest extent possible, without the need for adaptation.

UDL is Based on Brain Research



We are designing flexible learning that goes beyond access

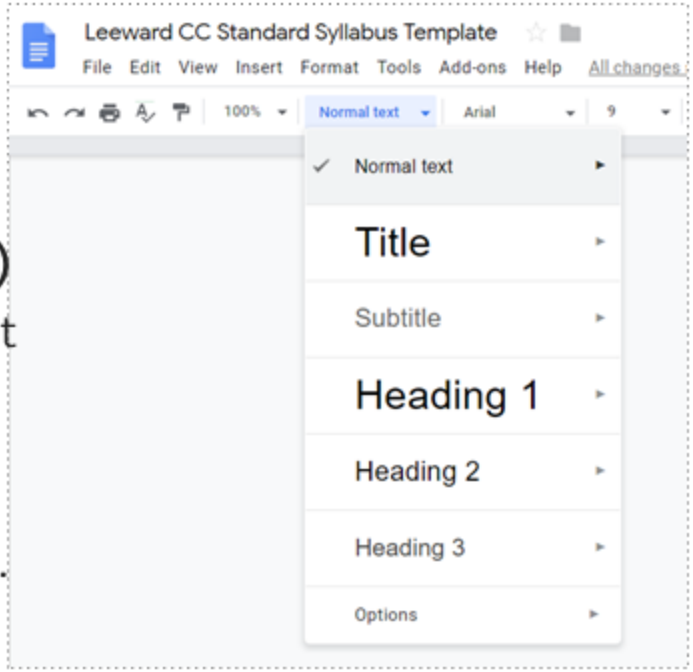
Web Accessibility for Text

Six Guidelines

1. Use heading
2. Use lists
3. Use meaningful links
4. Use easy-to-read fonts
5. Create tables with a header row and column
6. Use color contrast between text and background

1. Headings

Use headings to structure content on a page.



1. Organize content in a hierarchical structure (not simply for appearance)
   a. **Heading 1** - page title. It is the most important heading, and there is generally just one.
   b. **Heading 2** - major section heading.
   c. **Heading 3** - sub-section of the Heading 2.
   d. **Heading 4** - sub-section of the Heading 3, etc.

1. Use built-in headings from word processor or website builder.

It makes it easier for everyone to read, including those using a screen reader.

Headings

Use properly formatted headings

1. Headings (continued)

Leeward Community College
<Division>

<Course Number and Title>

Heading 1

Instructor Information

Heading 2

Instructor's Name:
Email Address:
Office Location:
Office Phone:
Office Hours:

Normal text

My preferred method of communication is…

Share your "why" statement - this might be a personal story of why you became an educator or what shaped you into the person you are today. This may be an excerpt of your educational philosophy and why you are passionate about your subject.
One format to use: I became an educator to [unique contribution] so that [impact on others].

Course Description

Heading 2

<Get the official course description from the most recent KSCM.>

<Consider including information from you as the instructor as to why the course material is relevant and important for your students.>

Pre-Requisites

Heading 2

- <Get the pre-requisites from KSCM.>

Use Headings consistently throughout your document.

Do **NOT** skip heading levels

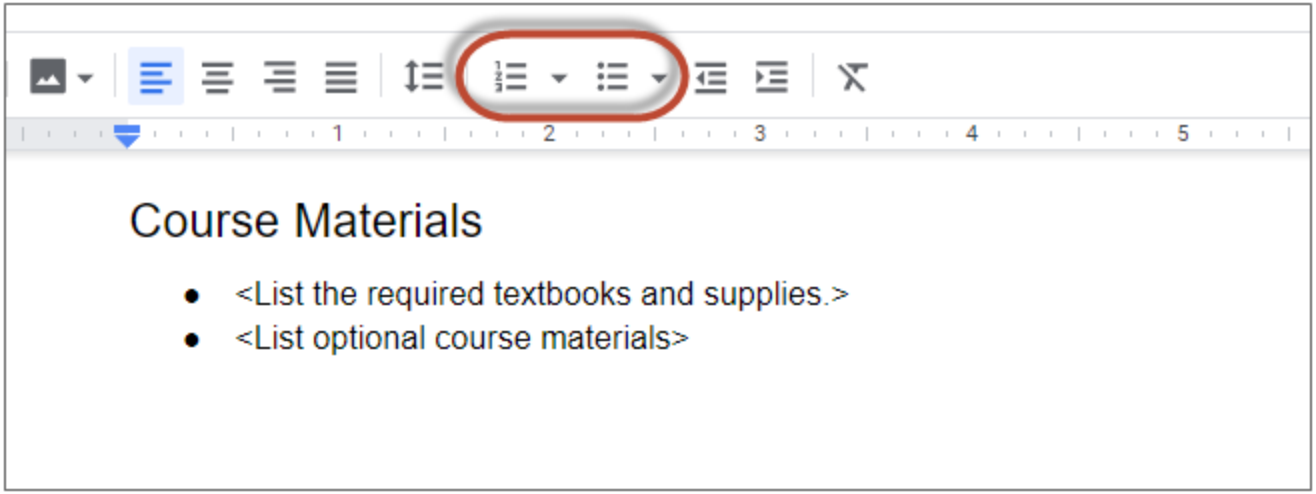
Lists

Use proper lists

2. Lists

Format as proper lists.

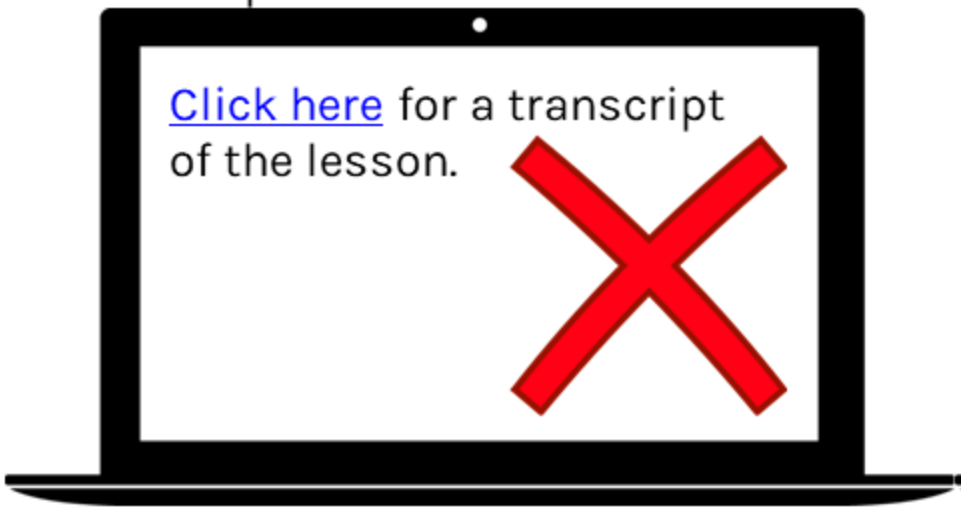
- Use built-in bullet or numbered lists
  - Bullets - order in the list does not matter
  - Number - list is a sequence



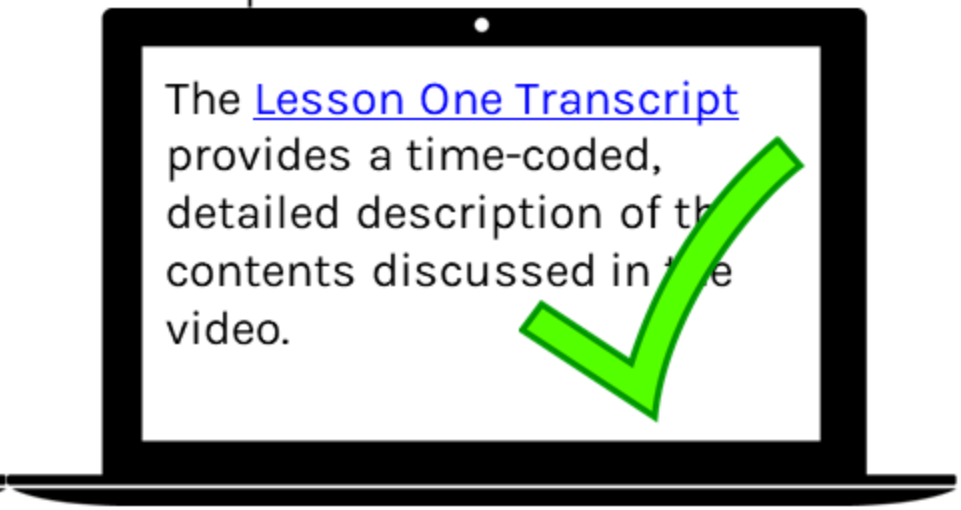
3. Meaningful Links

Use meaningful text for links

Example 1



Example 2



Avoid

- Click here
- Here
- More

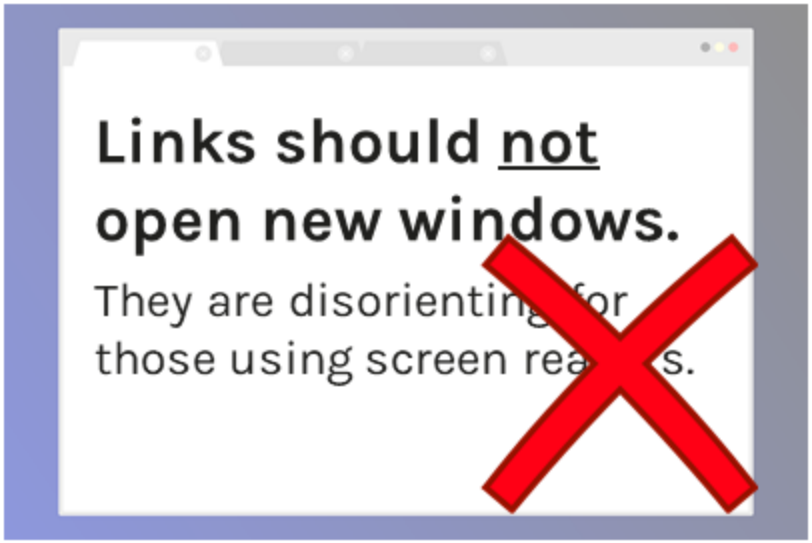
Avoid using URLs as link text

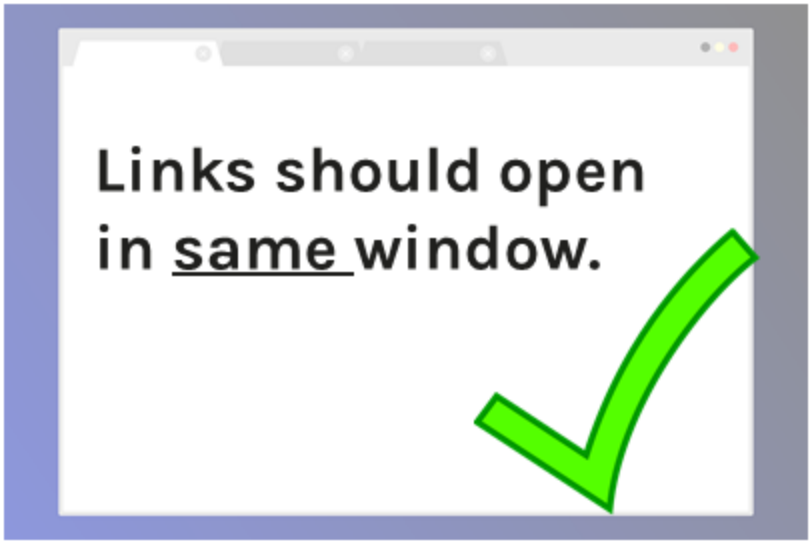
Do

- Link to destination
- Keep link text concise

3. Links (continued)

Links should open in the same window.





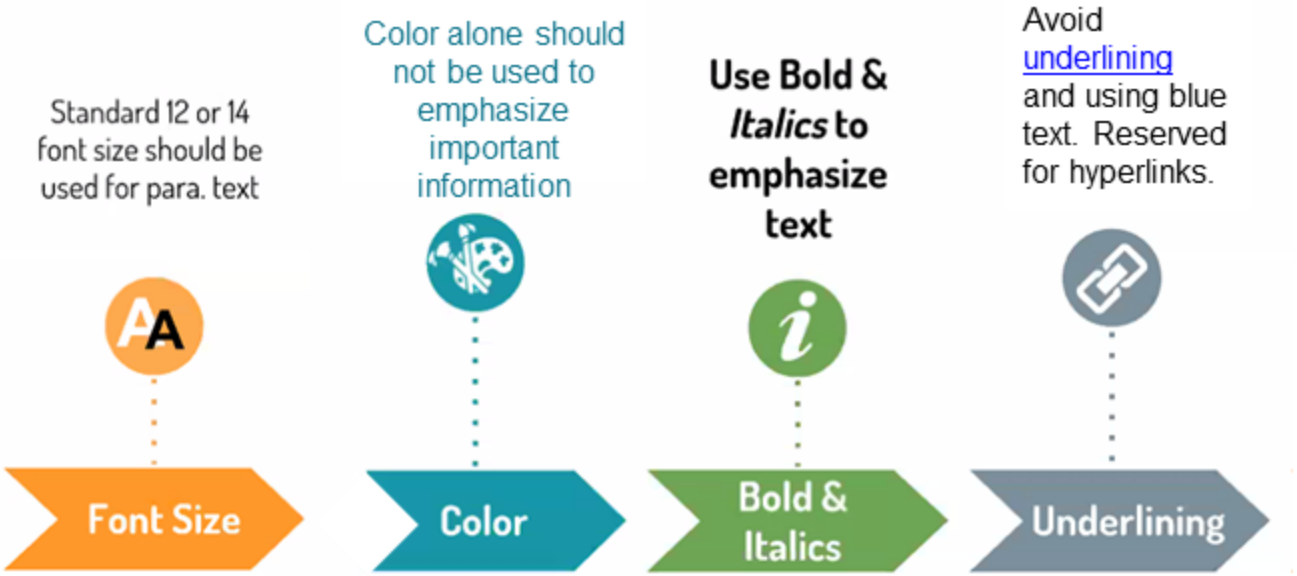
If a link ***must*** open in a new window, it is best practice to indicate it:

Information on the BC Open Textbook Project [New Window] is available online.

Information on the BC Open Textbook Project is available online.

4. Font

Use easy-to-read fonts



In general:

- 12 point for body text
- 9 point for footnotes or endnotes

5. Tables

Create tables with a header row and column and/or

Images

Create tables as plain text, not as inserted images

Aesthetics

Avoid using tables just for visual appeal

Headers

Each column should have a designated header

Cells

Do not merge cells or leave cells blank

Use tables for organizing data. Keep tables simple. Avoid nesting tables.

5. Tables (continued)

Poor example

Timing and Scheduling			
Week	**Module Learning Objective**	**Learning Activities**	**Assessment**
0	Apply Universal Design for Learning (UDL) strategies	1. Introduction 2. Video Response	Forum Posts
1	Apply Universal Design for Learning (UDL) strategies.	1. Ice Breaker 2. Discussion on Concerns 3. Unintended Consequences 4. UDL Activity (Individual)	
2	Apply Universal Design for Learning (UDL) strategies.	1. Revise Course Syllabus 2. Applying UDL Into Your Course Worksheet	Syllabus Apply UDL Worksheet

Title is part of the table.
Title is merged across multiple cells

merged cells

5. Tables (continued)

Timing and Scheduling

Title is not part of the table.

Week	Module Learning Objective	Learning Activities	Assessment
0	Apply Universal Design for Learning (UDL) strategies	1. Introduction 2. Video Response	Forum Posts
1	Apply Universal Design for Learning (UDL) strategies.	1. Ice Breaker 2. Discussion on Concerns 3. Unintended Consequences 4. UDL Activity (Individual)	UDL Activity
2	Apply Universal Design for Learning (UDL) strategies.	1. Revise Course Syllabus 2. Applying UDL Into Your Course Worksheet	Syllabus Apply UDL Worksheet

Row is tagged as a row header

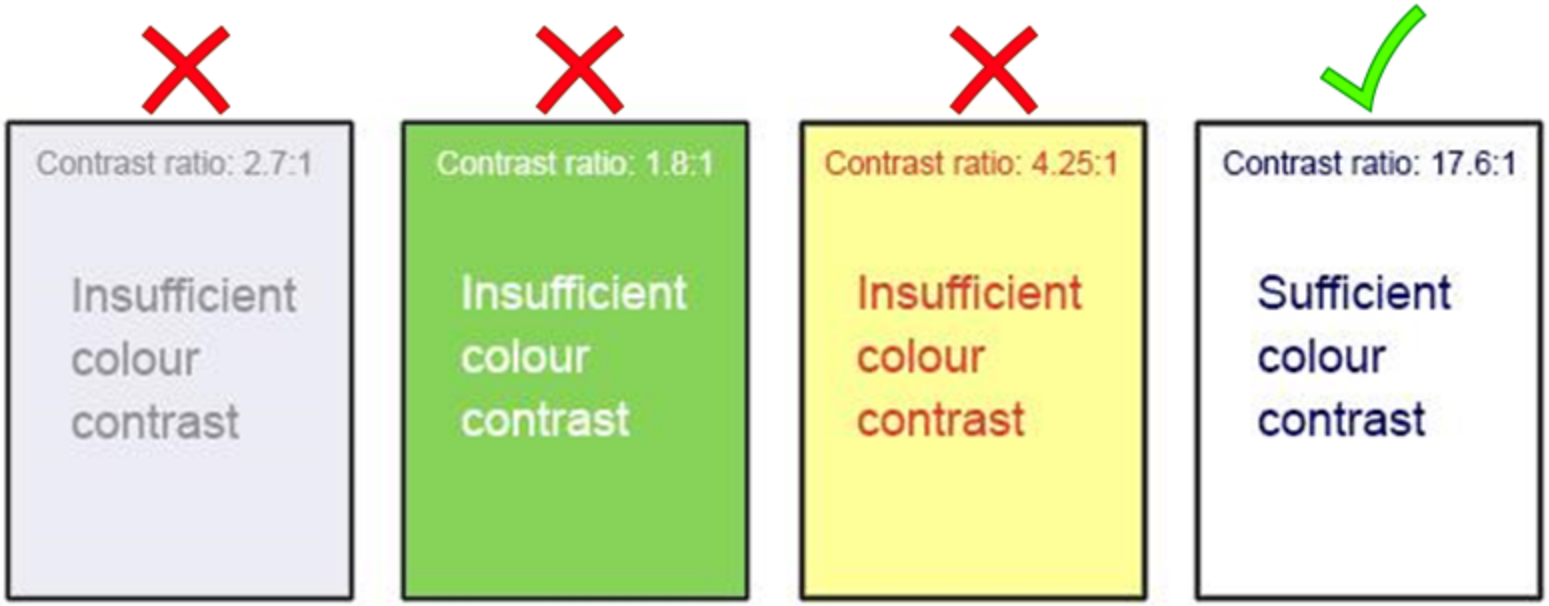
No merged cells

Microsoft Word - Use Table Properties to specify header row and/or column.
Google Docs - can not specify header row. Use alt-text instead.

6. Color

Use sufficient color contrast between text and background.

It is necessary for those who are color blind or have low vision. Avoid red/green and red/black combinations.



6. Color Checker - WebAim

https://webaim.org/resources/contrastchecker/

Web Accessibility for Text

Six Guidelines

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Web Accessibility for Images

Use descriptive alternative text (alt-text) for images. It is a meaningful description of an image for those unable to see them.

Tip: Imaging you are talking to your student on the phone. Describe what the image looks like on the screen. That is what you put in the alt-text.

Why You Should Use Alt-Text?

Sighted view of screen

9 new trailers you should watch this week
by Jacob Kastrenakes

Wireless convenience is driving us to spend more on headphones
by Vlad Savov

Screen reader reads

"wv_publicity_pre_launch_A_still_43.000001.0.jpg

9 new trailers you should watch this week
by Jacob Kastrenakes

"akrales_170124_1410_A_0093.0.jpg"

Wireless convenience is driving us to spend more on headphones
by Vlad Savov

Web Accessibility for Images

Six Guidelines

1. Describe the content and function of the image
2. Context matters
3. Keep it concise and avoid certain words
4. End with a period
5. Skip the Title text
6. Use null (“”) for decorative images

1. Describe the Image Content

Describe the content and function of the image

Examples:

“Crowd of people at a train station waiting to catch a train”

“Search”

2. Context Matters

Description of the image depends on its context

If this image is being used in a **photography** class:

"Close up, greyscale photograph of man outside, face in focus, unfocused background."

If the image is being used in a **theatre** class:

"Star Adam Lee, looking strained outside in the rain."

3. Keep it Concise

Be succinct

Typically no more than a few words are necessary. A good guideline is 125 characters.

Recommended:
“Stack of pancakes with powdered sugar.”

Not recommended:
“Eleven pancakes on a plate with powdered sugar on the top pancake. This is also called hotcakes, which is usually eaten for breakfast in the morning”

3. Avoid Words

Avoid

- Image of
- Photo of
- This links to

Screen readers will read "Image image of…" which is redundant.

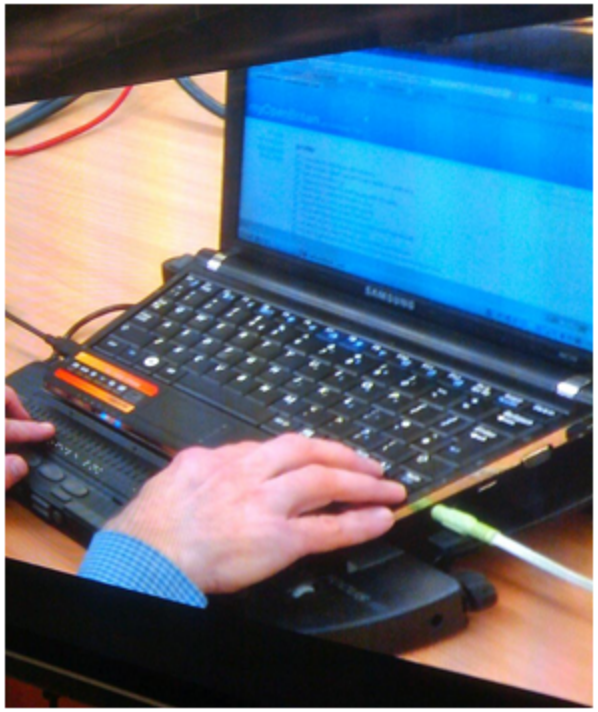
If it is important for your audience to know what type of image it is (photograph, illustration, animation), then include it at the end of the alt-text.

Example:
"Tetrapod walking. Animation."

4. End with a Period

Each alt-text should end with a period.

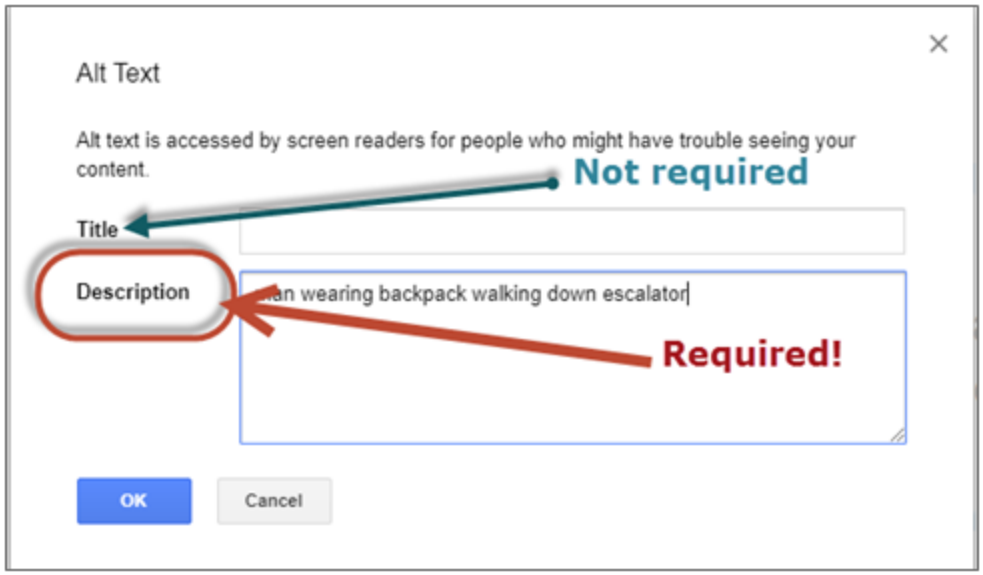
This will make the screen reader pause a bit after the last word in the alt-text, which creates a more pleasing reading experience.



5. Skip the Title Text

If your editor has a Title field, leave it blank.

1. Title text does not work on touch screens. It only works on desktops when you hover over the image.
2. Adding a Title text makes some screen readers read both the Title text and the Description (alt-text) which is redundant.

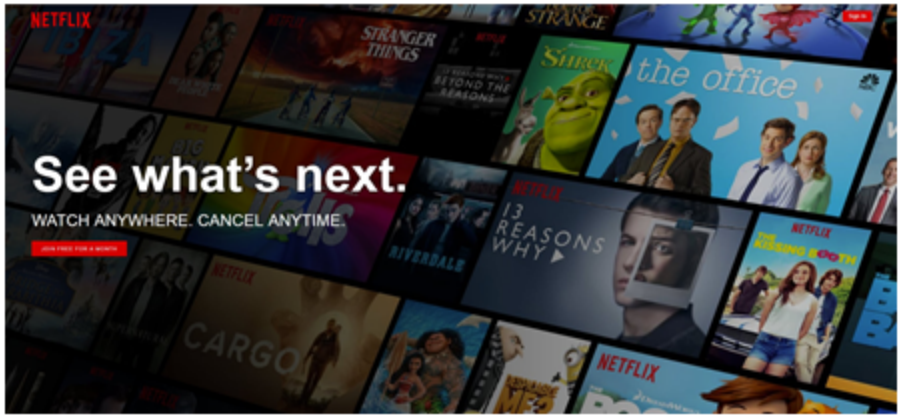


6. Use Null (“”) for Decorative Images

Type “” in the alt-text field

for decorative images or images that do not convey meaning

Examples:



Background image on start page

Decorative divider on a webpage

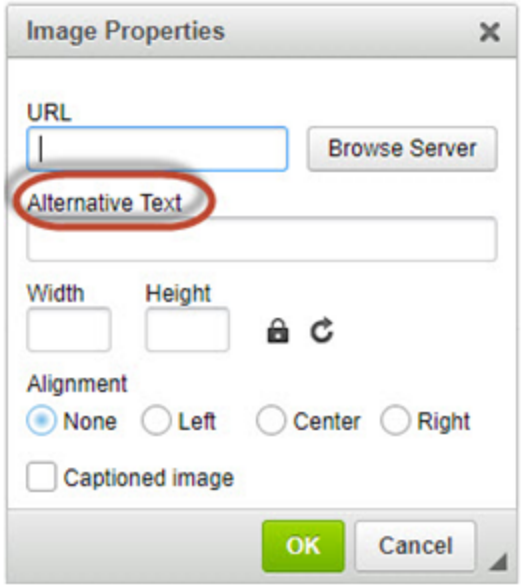
“Divider” image by GDJ from Pixabay is licensed under CC0 Public Domain

Adding Alt-Text

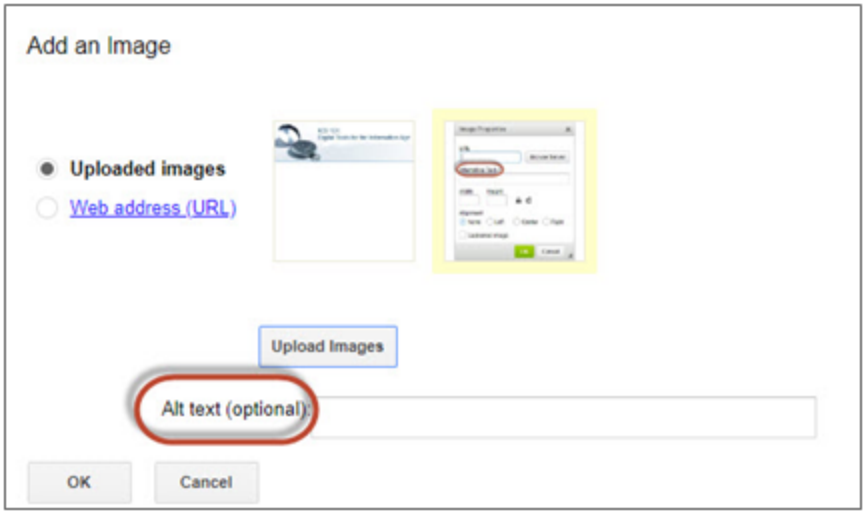
Insert the image.

Examples:

Laulima Lesson



Google Sites



Complex Images

"Bar chart showing monthly and total visitors for the first quarter 2014 for sites 1 to 3"

Image Description

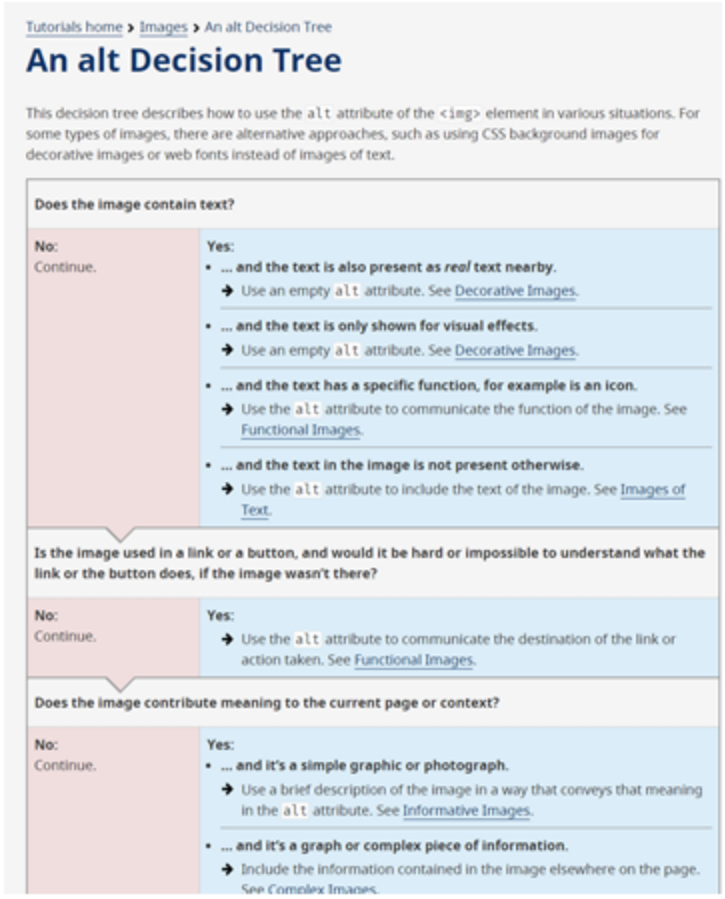
Separate webpage that contains detailed information or use longdesc HTML code.

Web Accessibility for Images

Six Guidelines

1. Describe the content and function of the image
2. Context matters
3. Keep it concise and avoid certain words
4. End with a period
5. Skip the Title text
6. Use null (“”) for decorative images

Alt-Text Decision Tree



Tutorials home › Images › An alt Decision Tree

An alt Decision Tree

This decision tree describes how to use the `alt` attribute of the `<img>` element in various situations. For some types of images, there are alternative approaches, such as using CSS background images for decorative images or web fonts instead of images of text.

Does the image contain text?

No:
Continue.

Yes:

- **... and the text is also present as *real* text nearby.**
  → Use an empty `alt` attribute. See Decorative Images.
- **... and the text is only shown for visual effects.**
  → Use an empty `alt` attribute. See Decorative Images.
- **... and the text has a specific function, for example is an icon.**
  → Use the `alt` attribute to communicate the function of the image. See Functional Images.
- **... and the text in the image is not present otherwise.**
  → Use the `alt` attribute to include the text of the image. See Images of Text.

Is the image used in a link or a button, and would it be hard or impossible to understand what the link or the button does, if the image wasn't there?

No:
Continue.

Yes:
→ Use the `alt` attribute to communicate the destination of the link or action taken. See Functional Images.

Does the image contribute meaning to the current page or context?

No:
Continue.

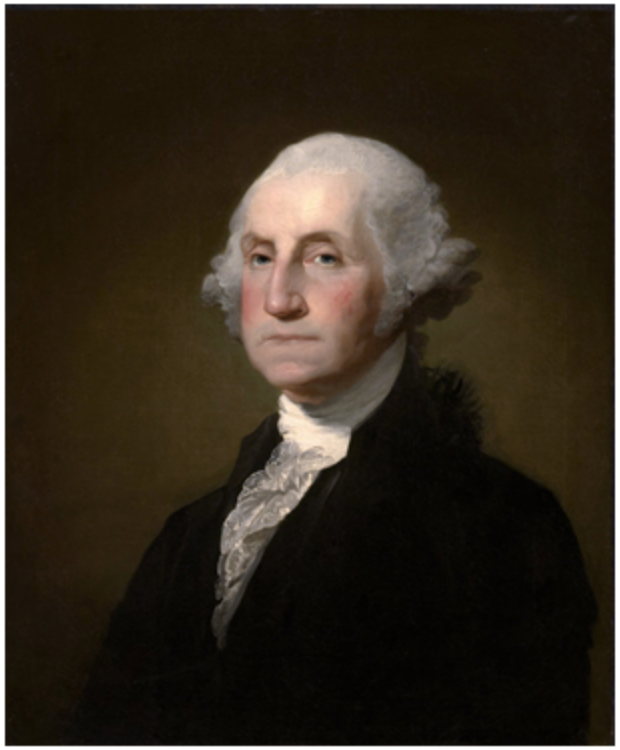
Yes:

- **... and it's a simple graphic or photograph.**
  → Use a brief description of the image in a way that conveys that meaning in the `alt` attribute. See Informative Images.
- **... and it's a graph or complex piece of information.**
  → Include the information contained in the image elsewhere on the page. See Complex Images.

https://www.w3.org/WAI/tutorials/images/decision-tree/

Let's
Practice

Practice 1

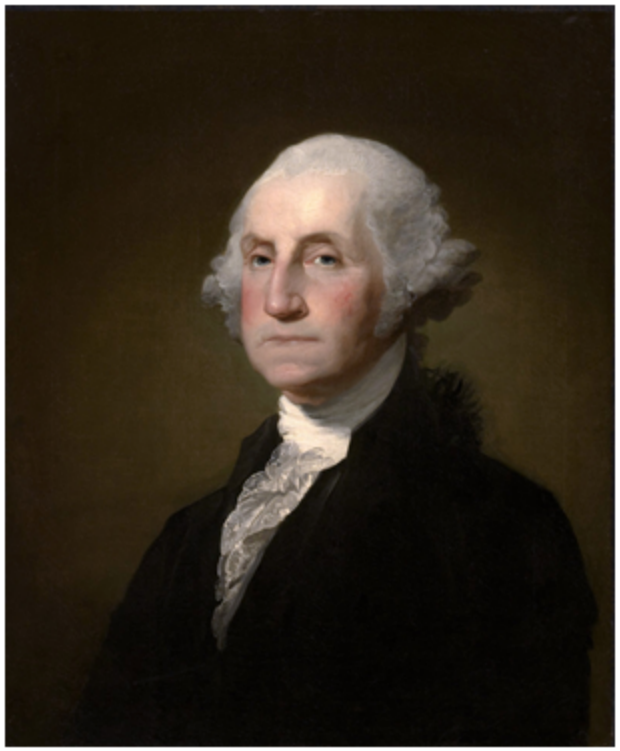


Because of his role as the Commander in Chief of American forces in the Revolutionary War, and, later, the first President of the United States, George Washington is often called the "Father of his Country".

What would be appropriate alternative text for this image?

"George Washington."

Practice 2



George Washington

Because of his role as the Commander in Chief of American forces in the Revolutionary War, and, later, the first President of the United States, George Washington is often called the "Father of his Country".

What would be appropriate alternative text for this image?

Empty alt attribute (alt="") will suffice.

Practice 3

Context:

1. In a Business course
2. In a Marketing flyer for education software

1. "Business school professor pointing to his laptop as he explains to a female student."

2. "Salesman points to his laptop screen as he explains the education software to a female client."

Practice 4

Our 10 campuses

Founded in 1907, the University of Hawai'i System includes 3 universities, 7 community colleges and community-based learning centers across Hawai'i. As the state's public system of higher education, UH offers opportunities as unique and diverse as our island home.

Mānoa

Hilo

West O'ahu

Hawai'i

Honolulu

Kapi'olani

Kaua'i

Leeward

Maui

Windward

Each picture is a link that links to the associated college

Text

Each image should specify the campus it is linking to. For example: "UH Manoa", "UH Hilo"

Practice 5

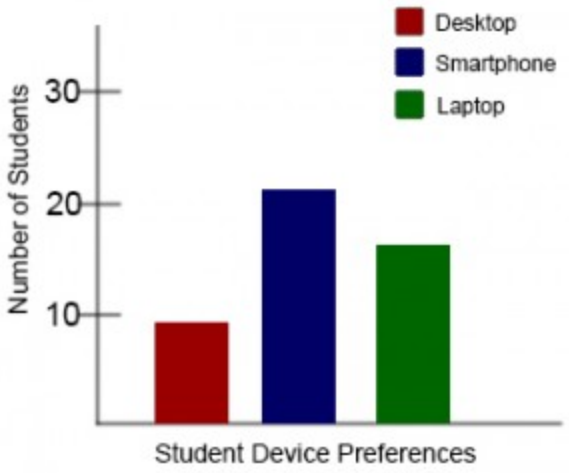
What would the most appropriate alternative text for the icon image?

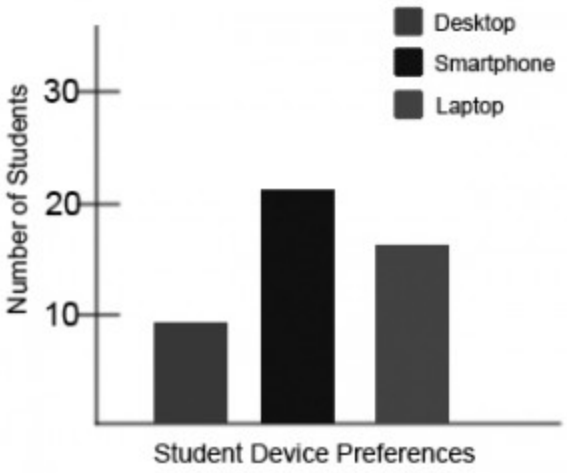
Download the Employment Application

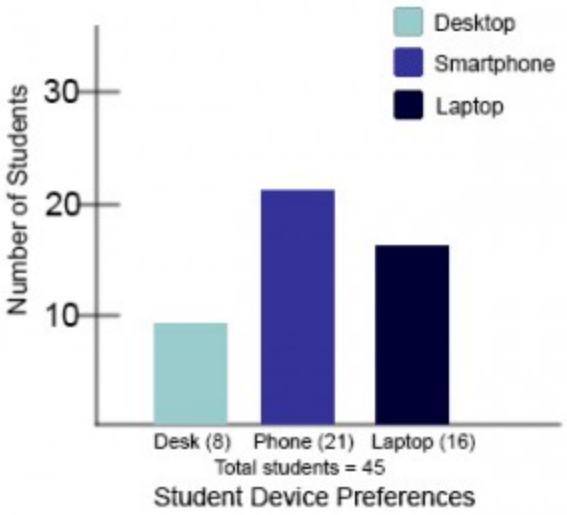
"PDF File Type"

Practice 6

Which is a good chart and why?







Create alt-text for the chart.

Use Videos That Have Captions

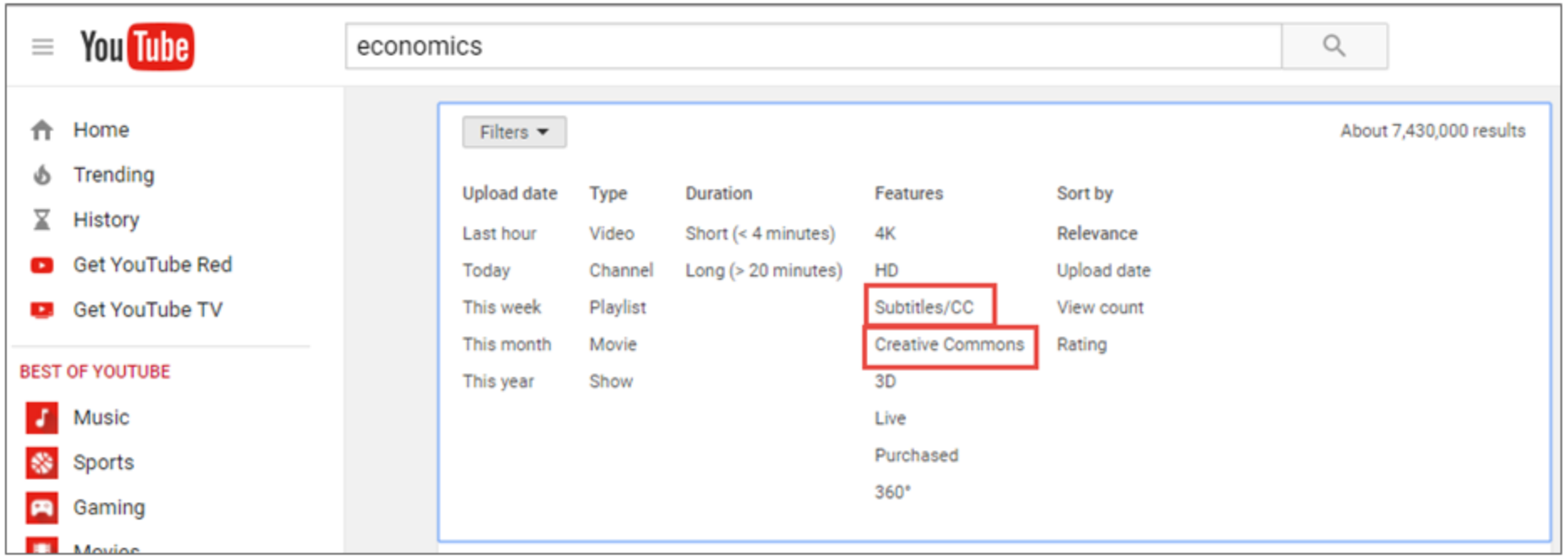
Khan Academy provides top-quality educational videos that are organized by discipline and skill levels.

TED provides over 1700 inspiring talks.

YouTube provides millions of Creative Commons-licensed videos (among their billions of video collections). The key is filtering them to isolate the Creative Commons-licensed ones.

Like YouTube, Vimeo hosts millions of Creative Commons-licensed videos. In addition, Vimeo provides a separate Creative Commons licensed video collection which makes the filtering process much easier.

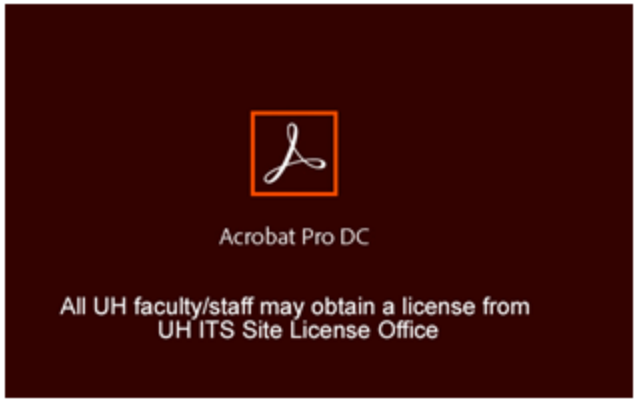
You Tube Example



Web Accessibility Checker

Check your pages/sites

- WAVE
- SiteImprove (Chrome extension)
- Microsoft Word Accessibility checker
- Adobe Pro DC Checker



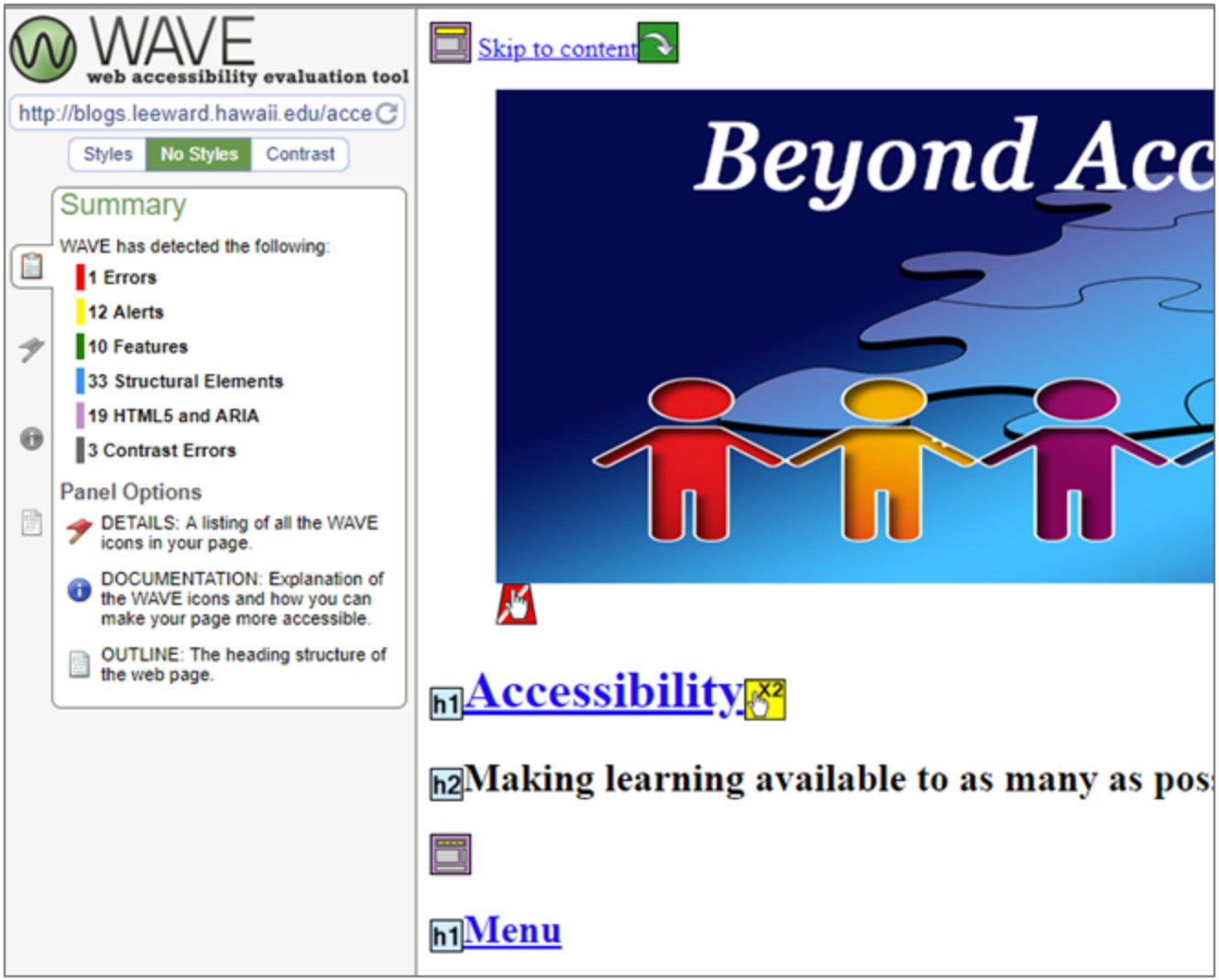
Check Color Contrast

- WebAim
- ACART
- Color Contrast Analyzer (chrome extension)

Web Accessibility Checker for Websites

http://wave.webaim.org/

WAVE - Web Checker



Learn More: Accessibility Courses

Accessibility at UH – http://www.hawaii.edu/access/

Accessibility of eLearning **(OpenLearn University)**

This is a free, self-paced course.

Accessibility: Designing and Teaching Courses for All Learners **(OpenSUNY)**

This was a free, facilitated course. The materials in Canvas are been provided as a self-paced course. It was developed to help participants gain a better understanding of accessibility as a civil rights issue and develop the knowledge and skills needed to design learning experiences that promote inclusive learning environments.

Basics of Inclusive Design for Online Education **(University of Colorado)**

This free, facilitated course provides instruction and strategies to support you in developing a course that is inclusive to students with a wide range of abilities, including students with disabilities. The Coursera course covers effective practices to increase inclusion and avoid some of the common accessibility issues that can arise in an online course.

Online Accessibility Resource Documents **(California Community Online Ed)**

This free site has information about online accessibility, including self-guided tutorials and courses, files for workshop activities, webinars, presentations, and other resources related to accessibility and online education.

1. Inclusive design benefits ALL students, not just those with disabilities.
2. Don't try to do your entire course at once.
3. Top three accessibility tasks:
   a. Alt-text for all images
   b. Headings for all pages
   c. Meaningful links
4. Investigate the services your campus Disability Office offers.

"When a flower doesn't bloom, fix the environment in which it grows, not the flower." - Alexander den Heijer

Let's Practice
http://go.hawaii.edu/pvf

Hands-On

Using the sample document (http://go.hawaii.edu/pvf) , please do the following:

1. Properly format the Title
2. Use properly formatted Headings
3. Use properly formatted lists
4. Add appropriate Alt-text to images
5. Make meaningful hyperlinks

Thanks!

ANY QUESTIONS?

Please contact me at:
leannech@hawaii.edu
Presentation and other resources at:
http://go.hawaii.edu/Ga6

Resources

"2014 First Quarter Visitors" image by W3C. Retrieved April 11, 2019 from https://www.w3.org/WAI/tutorials/images/complex/#image-containing-substantial-information (Slide 33)

"Search" image from Amazon.com. Retrieved April 11, 2019 from http://www.amazon.com/ (Slide 25)

CAST (2018). *UDL and the learning brain.* Wakefield, MA: Author.Retrieved June 6, 2018, from http://www.cast.org/our-work/publications/2018/udl-learning-brain-neuroscience.html

Goransson, D. (2017, October 16). Alt-texts: The Ultimate Guide. Retrieved June 4, 2018, from https://axesslab.com/alt-texts/ (Slide 23)

Just and Fair Design. (2019, January 28). Retrieved January 28, 2019 from http://universaldesignaustralia.net.au/just-and-fair-design/ (Slide 3)

Netflix start page. (n.d.). Retrieved June 4, 2018, from https://www.netflix.com/ (Slide 31)

Smith, C. (n.d.). Accessible Learning. Retrieved February 14, 2018, from http://www.livebinders.com/play/play?id=2268951 (Slides 15 &16)

University of Hawaii screen. (n.d.). Retrieved June 4, 2018, from https://www.hawaii.edu/ (Slide 40)

Universal Design for Learning Guidelines. Retrieved from http://udlguidelines.cast.org/ is copyrighted by CAST.

Web Accessibility Tutorials. (2017). Retrieved April 9, 2019 from https://www.w3.org/WAI/tutorials/ is copyrighted by

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"Check and X" image by Open-Clipart-Vectors from Pixabay is licensed Free for commercial use No attribution required (Slide 13, 14)

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