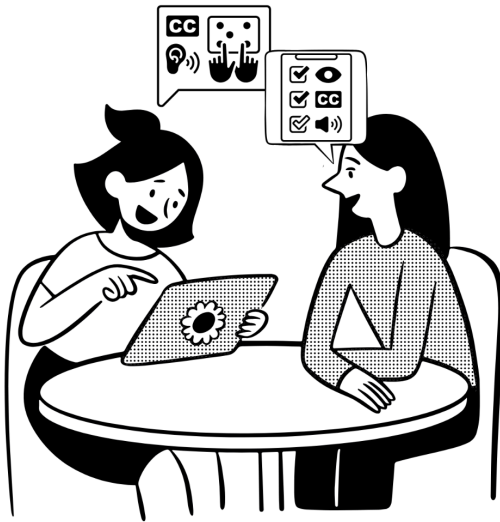
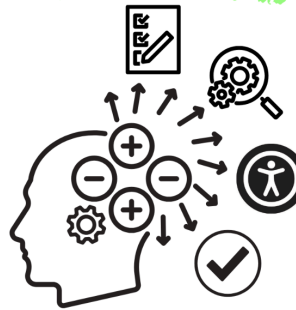


Accessibility Cheat Sheet



Accessibility Cheat Sheet



When you create and share content online, it is your responsibility to ensure that content is as accessible as possible to all students, faculty, staff, and community members who may use it. This means that people who are hard of hearing, have poor vision, are of older age, have poor internet connection, or any other disability or technological limitation should be able to access, understand, and use your content. The Cheat Sheet below highlights steps you should take to ensure your online content is accessible, why you should do it, and links to the corresponding sections in the [More Info & Examples](#) tab.

Cheat Sheet Table of Contents

- [Images](#)
- [Text & Links](#)
- [Videos & Audio](#)
- [Colors](#)
- [Tables](#)

Images

What You Should Do	Why Should I?	Example
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All images should contain Alternative Text (Alt Text).	Alt Text allows screen readers to interpret the image for users.	See our Alternative Text section for more.
Images should contain good color contrast.	Poor contrast on images can make them unreadable.	See our Image Color section for more.
Images should be displayed with proper resolution so they are clear and readable.	Images with bad resolutions are blurry and illegible.	See our Resolution section for more.
Images should not be the only source of specific information.	Images may not display for users with bad internet and are invisible to blind users.	See our General Image Accessibility section for more.
Avoid using text within (non-decorative) images	Images with text based information cannot be accessed by screen readers or users with low vision.	See our General Image Accessibility section for more.

Text & Links

What You Should Do	Why Should I?	Example
Text should be written in Sans-Serif Font Types like Arial or Calibri.	Sans-Serif fonts are clean, distinct, and easy to read for all users, not just those with visual disabilities.	See our Font section for more.
Use only one to three fonts per page.	Using multiple fonts can create messy looking and confusing text for users.	See our Font section for more.
Regular text should be set to 12 points.	Text that is too small or large can be illegible.	See our Font section for more.
Avoid using all caps unnecessarily.	Words written with all capital letters are difficult to read for users with reading and visual disabilities.	See our All Caps section for more.
Do not use color alone to convey meaning.	Users with color blindness, low vision, or who are using screen readers can't always perceive color.	See our Color Meaning section for more.

Headings should be used and used in sequential order instead of just modifying fonts.	Headings allow users to navigate content with only a keyboard or screen reader.	See our Headings & Subheadings section for more.
Lists should be made with the list tools.	If a list is not made with a list tool, screen readers can't provide appropriate context.	See our Lists section for more.
Links need to be written as descriptive text.	Linked text should provide context for where the link will send screen reader users.	See our Links section for more.
Links should open in the current window or tab when possible.	Links that open in new windows/tabs can disorient users with intellectual disabilities or who are using screen readers.	See our Links section for more.
If links do not open within the current window/tab they must have textual indicators.	Screen readers don't say when links open in a new window/tab, disorienting users.	See our Links section for more.
Math equations need to be typed in a mathematical notation language.	Math that is typed with regular text or in an image can't be read properly by screen readers or users with visual disabilities.	See our Math section for more.

Videos & Audio

What You Should Do	Why Should I?	Example
All videos should have Closed Captions.	Captions allow users who cannot listen to the video to still access its information.	See our Closed Captions & Transcripts section for more.
Supply video transcripts when possible.	Transcripts can provide key audio and visual information for users.	See our Closed Captions & Transcripts section for more.
Audio-only or video-only media need to have text alternatives.	Users who cannot listen to or watch media with only audio or video will need a text alternative.	See our Closed Captions & Transcripts section for more.

Colors

What You Should Do	Why Should I?	Example
Color should not be used as the only way to convey meaning or information.	Users with color blindness, low vision, or who are using screen readers can't always perceive color.	See our General Color Accessibility and Color Meaning sections for more.
Images and text should contain good color contrast.	Images and text with poor color contrast can make them unreadable.	See our Image Color and Text Color sections for more.

Tables

What You Should Do	Why Should I?	Example
Tables should only be used to display data/information and not to create a page layout.	Screen readers provide context to table content, so that content needs to be input in a certain way to make sense or a table should not be used.	See our section Tables for more.
Tables should have a defined header row, column, or both.	Headers allow users to navigate tables with only a keyboard or screen reader.	See our section Tables for more.
Tables should have Titles.	Titles are needed to denote the purpose of the Table	See our section Tables for more.
Do not create tables with merged cells, split cells, or nested tables.	These can cause confusion for anyone to read and are nearly impossible for screen readers to navigate.	See our section Tables for more.

Images

General Image Accessibility

Images are a great way to enhance courses and add context, but you must take some extra precautions to make them accessible. Be careful when using images - particularly those that have text in them - as they cannot be easily understood by people with low vision or who are using screen readers. An image should also not be the only way you provide a specific piece of information (e.g., a picture example of a balanced plate of food with no text explaining why it is balanced). If the image ever disappears or gets interpreted incorrectly, then the user will not receive the intended context or information. You should always ensure that information within an image is written outside of the image.

Alternative Text

All images should contain Alternative Text (Alt Text) so that they can be fully accessible. Alternative Text is a short tag or piece of code you write about an image that a screen reader reads to a user. Alt Text is also needed for users with slow internet who may not be able to properly load the image. If an image fails to load, the Alt Text that you type will appear in place of the image. If there is no Alt Text provided, the screen reader can only read the name of the image file, which is not enough to properly describe the image. Good Alt Text should also be written with the context of the image in mind (e.g., what class is this for? What topic is being covered?). Additionally, good alt text isn't about describing every detail in the image; it's about describing what matters given your purpose in using the image. Examples of Good and Bad Alt Text on the following image can be found below.



Good Examples:

- For an art class:
 - Bright orange fruit with a green leaf and stem, centered against a smooth blue surface and blue background, creating a strong color contrast.
- For a biology/botany class:
 - An orange fruit (a hesperidium) with a dimpled peel and an intact pedicel (stem) and leaf attached.

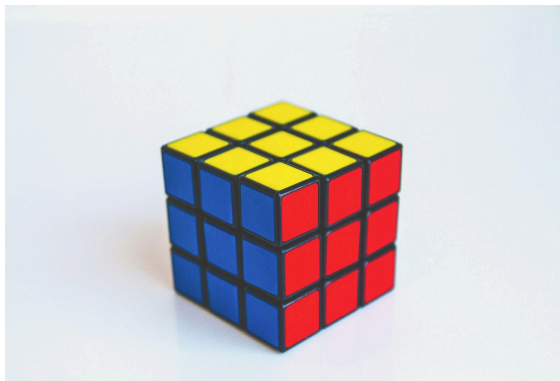
Bad Examples:

- orange
- fruit
- orange_stem.png
- fresh orange

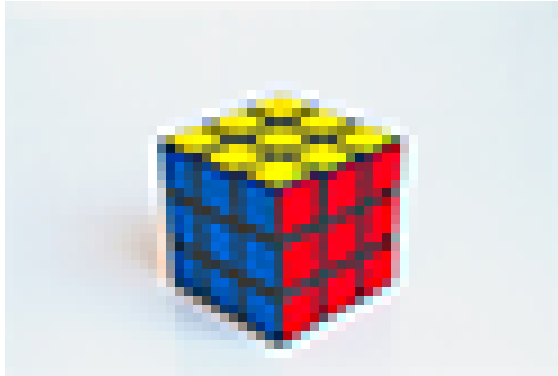
Resolution

Resolution is the measure of detail an image holds in relation to the number of pixels it contains. Resolution is not tied to the dimensions of the image; images can be sized up or down, but that does not increase or decrease the pixel count for their resolution. For example if you upload an image with too low of a resolution, it can become blurry or fuzzy, obfuscating its information.

Good Example:



Bad Example:



Text

Font

Creating accessible text online starts with choosing a legible font type along with an appropriate font size. For standard text, font size should be no less or more than 12 points (this does not apply to headings or subheadings). You should also stick to using one to three font types in a document to ensure consistency. Using multiple font types (e.g., using both Arial and Times New Roman) can confuse students and create messy looking text. Accessible font types typically fall in the San-Serif font family; listed below are some of the best most widely used options:

- Arial
- Times New Roman
- Verdana
- Cabri
- Helvetica
- Tahoma

All Caps

If possible, you should avoid writing with all capitalized letters. Capitalized letters are more uniform in shape and size, making it more difficult to differentiate between them while reading - particularly for users with dyslexia or visual disabilities. It is best to avoid using all capital letters except when having to use acronyms and terminology that is common practice (e.g., DNA, FBI, R-CCC, etc.).

Headings & Subheadings

Heading and Subheadings exist so that users who have visual disabilities, use screen readers, or are unable to use a mouse can still navigate and read a webpage using keyboard shortcuts or screen reader navigation tools. Headings also have the added benefit of organizing content, making it easier to scan and read for everyone. When using headings, ensure that you use the hierarchical order (i.e., H1 should be followed by H2, H3, H4 and so on) because screen readers read back the heading number to the user to let them know how topics are related. Headings can be reset to the top of the Hierarchical order to denote a change in the topic of that section in the content. Ensure you do not skip headings in the hierarchy; below you will see some examples of both good and bad headings and subheadings orders.

Note: The lists and indentation in these examples are for illustration only. Headings should not normally be part of lists or otherwise indented.

Good Examples:

- Good (stays in order) for the topic of "Caring for a House Plant":
 - a. H1: Choosing the Right Plant
 - H2: Light Requirements
 - H3: Low-Light Plants
 - H3: Medium-Light Plants
- Good (stays in order and resets to a higher heading when starting a new subtopic) for the topic of "Essential Library Research Skills":
 - a. H1: Finding Books in the Library
 - H2: Using the online Catalog
 - b. H1: Evaluating Sources
 - H2: Popular vs. Scholarly Sources
 - H3: Peer-Reviewed Articles
 - H2: Evaluating Author Bias
 - c. H1: Citing Your Sources
 - H2: MLA Citation Style
 - H2: APA Citation Style

Bad Examples:

- Bad (skips headings):
 - a. H1
 - H3
 - H4
 - H6

- Bad (does not start at H1):
 - H2
 - H3
 - H4
 - H5

Lists

Ordered (numbered) and unordered (bulleted) lists need to be made with a list tool so that they are properly coded as list elements. If you do not use the list tool when making lists (e.g., you just type numbers or symbols instead), screen readers will not be able to announce to the user that the content is part of a list and where in that list they lie, causing the user to lose important context of how the items are related. Lists made with list tools are also easier to make and provide a uniform formatting and look, saving you time.

Good Examples:

Ordered/Numbered:

1. First Point
2. Second Point
3. Third Point
4. Fourth Point

Unordered/Bulleted:

- Unordered List First Point
- Unordered List Second Point
- Unordered List Third Point
- Unordered List Fourth Point

Bad Examples:

(Note that the following lines have no actual formatting)

Ordered/Numbered with Typed Numbers:

- 1 List Point
- 2 List Point
- 3 List Point

Unordered with Typed Symbols:

- List Point
- List Point

- List Point

Links

When creating accessible links, it's important to follow a few guidelines to ensure that the links you make are descriptive and easy to read. The user should be able to know by reading the link text exactly where the link will take them as screen readers can provide users with a list of links, making undescriptive link text unhelpful. However, it is not usually appropriate to type/paste the URL as screen readers will read each link off character by character. Generally speaking links should open in the current window/tab the user is in because screen readers do not typically announce when a user is taken to a new tab. This can make it difficult for users of screen readers to find their way back to their original tab. It can be appropriate for links to open in a new window or tab, though, when opening in the same window or tab would cause the user to be locked out of or lose all progress in their original tab (e.g., a student's quiz attempt being submitted, locked, or erased if they click on a linked help article in the quiz). If you are setting a link to open in a new window/tab, the link text should be formatted to include the text "(opens in new window)."

Good Examples:

- View the [R-CCC College Website](#) for more information.
- [Accessibility Cheat Sheet Document](#)
- [Google \(Opens in new window\)](#)

Bad Examples:

- [Click Here](#) (does not describe where the user will be taken)
- [Read Further](#) (does not describe where the user will be taken)
- <https://www.google.com/> (screen readers will read the link character by character)

Math

If you want to insert mathematical formulas or questions into text online, you will need to utilize a mathematical notation language so that it displays properly. If you do not use mathematical notation, you will find it extremely difficult to properly write more complex equations, and screen readers cannot properly read math that is not written in mathematical notation. For accessible, text-based math equations, ensure that you type them using one of the following mathematical notation languages:

- Tex (used in TinyMCE text editor)

- LaTeX (used in Microsoft Word)
- MathML

Below you will find a screenshot of a good and bad example of the same equation. The left half of the image shows an equation in a LaTeX and the right half shows that same equation in plain text. Notice how the equation loses readability when not written in a mathematical notation language.

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$X = -b \pm \sqrt{b^2 - 4ac} / 2a$
--	------------------------------------

Closed Captions & Transcripts

Users with hearing disabilities or those without the ability to listen to videos or audio files need to be supplied with text alternatives so they can still access the information within the media.

- Every video needs to have accurate, synced closed captions.
- Audio-only files (e.g., podcasts) will need a full text transcript of all the information within them.
- Video files are not required to have a full transcript unless they do not contain audio, in which case, a transcript of the key visual information shown on screen should be made for users with visual disabilities.

Tables

Tables should only be used as a way to display related information or data and only if a table would add value or make the content more easily understood. If you do not use the tables correctly, users of screen readers will not be able to easily understand the content within the table. When a screen reader user selects a table cell, their screen reader announces where that cell is located - typically by reading the header column and the row associated with it - to help them understand the cell's context (see the quotations in the Good Examples below for more information on this). As such, you need to make sure you use the table builder's settings to designate a header row and/or column (note: this is an actual setting rather than being done by just bolding or otherwise visually indicating the header row; additionally, "header" does not refer to the hierarchical Headings settings detailed in the Headings & Subheadings portion of this

guide). Ideally, tables should also have titles above them (or in their settings if using a program like Microsoft Word) denoting their purpose. When creating a table, do not use merged cells, split cells, or nested tables (i.e., a table within a table) as they create cluttered and unreadable tables for all users but especially those using screen readers.

Good Examples:

The following table has information that is suited for a table and a title. It also has a clearly defined header in the top row.

Lectures Table

Topics	Date	Time	Room Number
What are Magnets?	5/30/2078	9:50am	JER 123
Solar System & You	6/15/2078	8:00am	FRE 458
Cooking on a Budget	8/8/2078	2:50pm	JER 621

A screen reader may read cell A2 like the following: "Row: 2 of 5, Column 1: Topics, Cell: What are Magnets?"

The following table has information that is suited for a table and a title. It also has clearly defined headers in the top row and left most column.

Activity Times Table

Activities	Monday	Tuesday	Wednesday	Thursday	Friday
Discussion Boards	5:00pm	5:00pm	5:30pm	5:30pm	2:00pm
Meetings	9:00am	9:00am	9:00am	9:30am	9:30am

A screen reader may read cell E3 like the following: "Row: 3 of 3, Column 5: Thursday, Cell: 9:30am"

Bad Example:

The information in the following table would be better suited as an unordered list rather than a table. This table also uses merged cells, has no defined header row or column, and seems to mainly use the table to condense the layout of the text

Jonathan Sasser Contact Information	
Distance Learning Coordinator	Telephone: 123-456-7891
	Email: fakemail@aolonline.com

Colors & Contrast

General Color Accessibility

Exercise caution when using colors in content as poor color choices can cause text, images, and other page elements to become unreadable for several reasons. First, conveying the meaning of something using only color is inaccessible to people who cannot perceive those colors (e.g., people with color blindness or low vision). When using color, make sure that it is accompanied by something else to help convey that meaning. For example, in the Moodle gradebook, passing grades are indicated by green text with a check mark by them." Second, ensure you have good color contrast. Good use of colors involves taking lighter colors and using them with a darker color to ensure that they do not fade together for users - particularly those with low vision. If you are unsure if the colors you are using have good contrast you can use the [Coolors Color Contrast Checker](#) to view their contrast rating score.

Image Color

Below you will find an example of good and bad color contrast in an image. The leftmost portion of the image demonstrates how difficult it is to read low contrast (e.g., yellow text on a white background) while the middle and right portions show good contrast (e.g., white text on a black background or black text on a white background). If you are unsure if the colors you are using have good contrast you can use the [Coolors Color Contrast Checker](#) to view their contrast rating score.



Text Color

Color contrast is also applicable to text. If you ever use a highlighter tool or decide to use different colored text, you need to ensure they have good contrast with the text or page color, respectively. If you are unsure if the colors you are using have good contrast

you can use the [Coolors Color Contrast Checker](#) to view their contrast rating score. You can find a few examples demonstrating colors below:

Good Examples:

- Good Example
- Good Example
- Good Example
- Good Example
- Good Example
- Good Example

Bad Examples:

- Bad Example
- Bad Example
- Bad Example
- Bad Example
- Bad Example
- Bad Example

Color Meaning

Color should not be used as the only method used to convey information. Colors do not have a standard meaning so it is possible that they are interpreted by others differently. Additionally, color is also not good for users with low vision and cannot be read by screen readers. You are allowed to use color but the context it provides must also be explained via plain text as well. You can find a few examples demonstrating colors below:

Good Example:

This example uses text before the data explaining the color in conjunction with the text color.

Create a colored graph using the the following data sets:

Blue Group: Red, Orange, Turquoise, Maroon, Blue, and Cyan

Red Group: Yellow, Green, Grey, Black, Purple, and Pink

Bad Example:

This example uses only the color of the text to denote the group for the data.

Create a graph splitting the information based on the color of the text: Blue, Yellow, Green, Cyan, Grey, Black, Red, Orange, Turquoise, Maroon, Purple, and Pink.