Accessibility Checkpoints for IMAGES in Online Courses

This Accessibility Checkpoints guide provides recommendations on how to make IMAGES in your web pages, documents, and presentations accessible to all students, including students with disabilities. Images include photos, drawings & other illustrations, graphs, charts, maps, and icons.

For image-based content to meet [Web Content Accessibility Guidelines (WCAG) 2.1 AA](#):

- "All **non-text content** that is presented to the [student] has a text alternative that serves the equivalent purpose..." (***Guideline 1.1.1***)

- "Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element." (***Guideline 1.4.1***)

- "If the same visual presentation can be made using text alone, an image is not used to present that text. (Logos are exempt)." (***Guideline 1.4.5***)

CONTENT IN THIS CHECK POINTS GUIDE

CRITICAL CHECKPOINTS FOR ACCESSIBLE IMAGES

Required for **ALL** images:

- **Alternative text**
- **Colour is not used as the only visual means of providing information**

Required for **SOME** images:

- **Extended description**[1] (e.g. *complex informative images*)

TO BEGIN: IDENTIFY THE PURPOSE OF YOUR IMAGE [2]

If you are clear about the purpose of an image, this will help guide the Checkpoints you need to consider and apply to make the image accessible.

- Is your image **INFORMATIVE**?
  Informative images "graphically represent concepts and information, typically pictures, photos, and illustrations."

- Is your image **FUNCTIONAL**?
  Functional images are images and icons that are used as **a link or a button**.

- Is your image purely **DECORATIVE**?
  Decorative images add visual decoration to a page but do not convey information or serve a function.

REMEMBER: IMAGES CAN ENHANCE COMPREHENSION

The recommendations and practices outlined in this Checkpoints document focus on making images accessible, especially to students who are not able to see or comprehend them. This advice is not intended to suggest that including images is a barrier to students' learning. Images can play an essential role in supporting comprehension for many students.

> "Many concepts are communicated most effectively with the addition of illustrations, maps, charts, etc. **Imagine trying to learn human anatomy with no illustrations**. Illustrations, maps, charts, etc. can enhance comprehension, especially for those with cognitive and learning disabilities."
> [WebAIM](#)

> "While accessibility for images often focuses on providing a text alternative for screen-reader users, we can also look at the issue from the other way around—**providing a graphic alternative for text to make the underlying information or concept easier to understand**."
> [Digital Accessibility Harvard University](#)

A special note about the use of **icons**

> "Many web pages use icons to supplement or replace text. Complex content and functions, such as clicking a gear icon for "settings", can easily be conveyed through a very small icon. Icons should be simple, easy to understand, and consistent. **Icons almost always require familiarity in order to be useful. Across cultures and languages, they can be misinterpreted. In many cases, adjacent text is helpful.**"[3]
>
> *Example icons for Trash and for Settings*
>
>

1. ALTERNATIVE (ALT) TEXT

"Images must have text alternatives that describe the information or function represented by them." [4]

Why do you need ALT text?

Providing alternative text for images supports a student who:

- Is blind or has low vision.
  ALT text is read aloud by screen readers in place of images.

- Has a form of cognitive disability.
  ALT text can help clarify or describe the concept/s being conveyed by the image.

- Has chosen not to view or load images (e.g. is accessing material on mobile device/Smartphone/etc.)
  ALT text displays in place of unloaded images.

What should you include in ALT text descriptions?

What would your web page look like if the images didn't load? What is the ESSENTIAL information you intend to convey and that students lose if an image does not display?

Try writing alternative text for each image that would work as a replacement and "**performs the same function as the image**" [5].

> **Alternative text must convey the relevant content and functionality of an image**; it is more than just a basic description of the image (e.g., *ALT="photo of cat"*).
>
> Rather than just describing what the image looks like, **ALT text** should convey what the content of the image is and what it does. [6] (e.g., *ALT="A feature common to tabby cats is their facial markings that include a distinctive M on their foreheads"*).
>
>
>
> (Image credit: "[Tabby cat on a girl's lap](#)" is marked with [CC0 1.0](#))

### Different Types of Images Have Different ALT Text Requirements

The [purpose your image serves](#) informs what you need to provide in the way of ALT text.

- **Simple Informative images**: the ALT text descriptions for these types of images should be 100 words (1-2 sentences) at most.

- **Complex Informative images**: these types of images require more than a short-text equivalent of 100 words. If not described in the surrounding text, these images may require you to provide a more comprehensive description in an **extended description file** students can easily access.

- **Functional images** (e.g., icons and linked images): these are images that are intended to support an action rather than convey information. The ALT text for these types of images should convey the action that will be initiated (e.g., "*Return to the home page*" or "*Open full-screen view of document*") rather than a description of the image itself.

- **Decorative images** (e.g., logos): when images are added for decorative purposes they do NOT require ALT text. However, a screen reader will still detect that the image is there so it needs to be tagged as "decorative" to inform the screen reader that there is no information being missed.
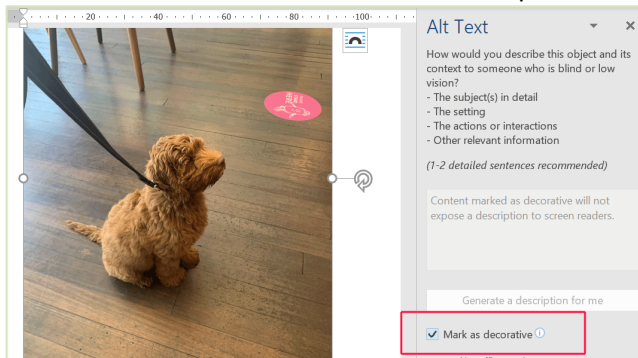
  To tag an image in D2L Brightspace as decorative:
  Click the "This image is decorative" checkbox in place of adding Alternative Text when prompted.
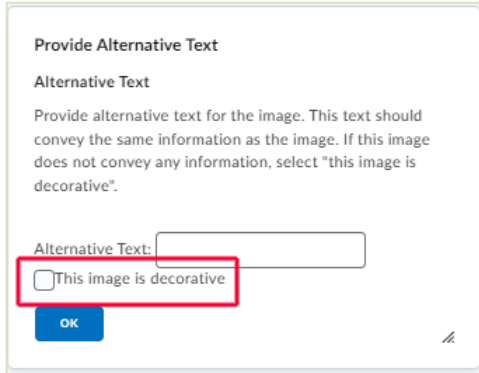
  To tag an image in Word as decorative:
  Click the "Mark as decorative" checkbox in place of adding Alt Text.

<mark>CHECKPOINT 1: ALTERNATIVE (ALT) TEXT</mark>

Yes/No	Is your ALT text description:
	An **accurate and concise** equivalent to the information in the image/graphic? *Typical maximum: 1-2 short sentences.*
	Providing information about the **function of the image** (if relevant)? *If your image is hyperlinked to another page or resource, this functional information needs to be included in your ALT text. (E.g. **alt="View the PDF version of this Rubric"**)*
	Describing a **purely decorative image?** *ALT text is unnecessary for images that have no functional or informative purpose and should be tagged as decorative in place of alternative descriptions.*

2. COLOUR & CONTRAST

What do you need to consider when using colour in images and charts?

1. **Colour reliance**: If colour is the only way you convey the point you are making or present key information, your image is not accessible.
2. **Colour contrast**: If there is not enough contrast between your background colour and your foreground content, your image is not accessible.

Additional visual cues provide students access to the content when they:
- Are colour blind and cannot differentiate between certain colours.
- Are using a device with monochrome display.
- Have poor contrast vision.

Colour Reliance

Example 1: A Colour-reliant Course Schedule

In this example, colour alone has been used to neatly highlight online class days and in-person group lab days. When viewed in greyscale (or printed in black & white), all of this information is lost.
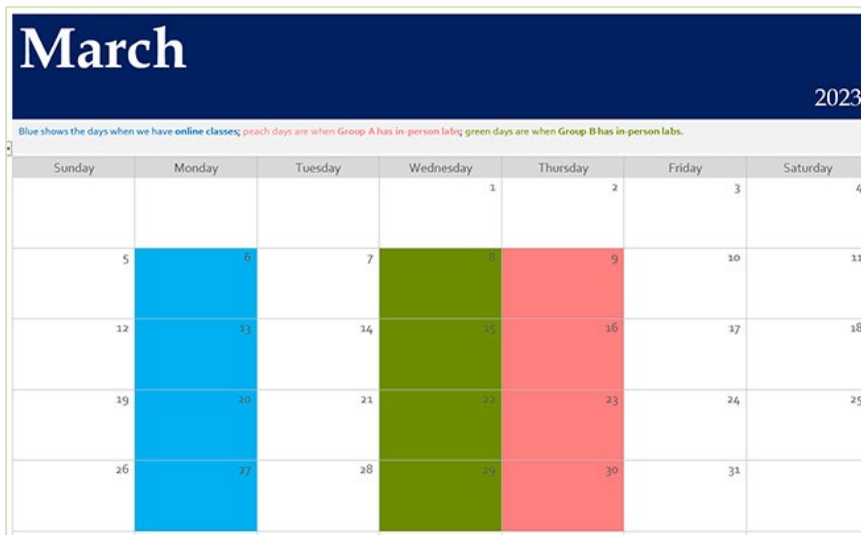

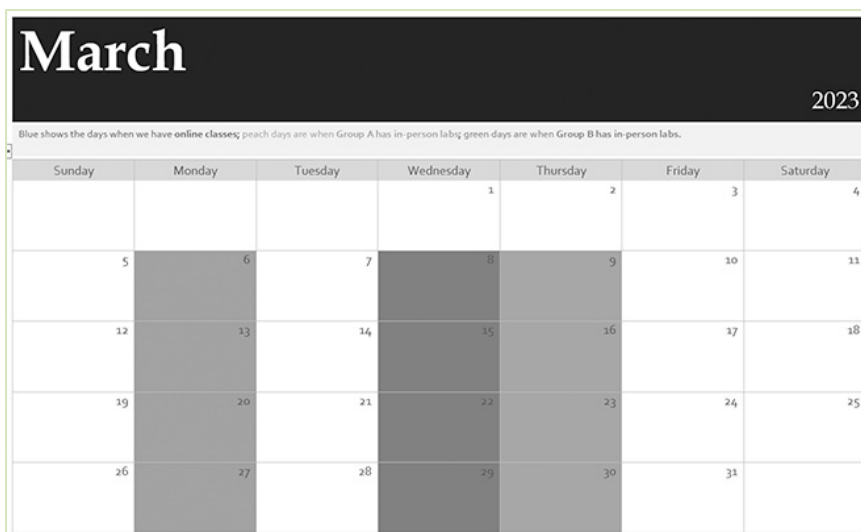Figure 1: Calendar relies on colour to advise students which days are online and which days are for group labs.

Figure 2: Information that relied solely on colour is lost when printed or viewed in greyscale

Example 2a: A Colour-reliant Bar Graph

In this example, the bar graph on the left uses colour as the only means to communicate some critical information. When that same graph is viewed in greyscale, the data is lost or confused.

Original: conveys information in colour	In Greyscale: relevant information is lost
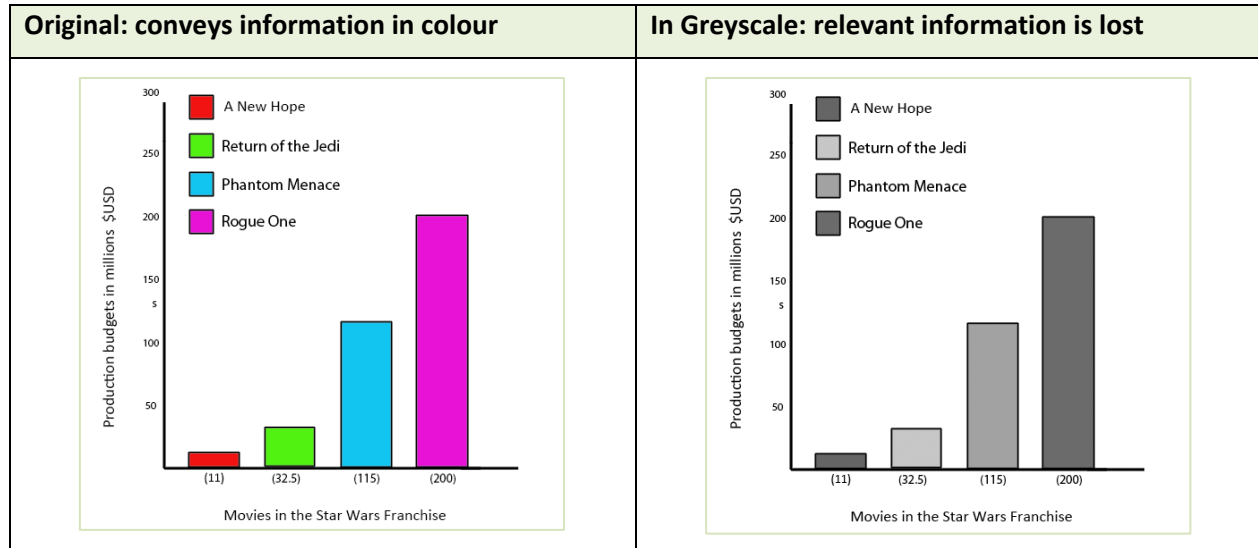
Example 2b: A Colour-Enhanced Bar Graph

In this modified version of the same bar graph, colour is still used but data is also distinguished through textures and high-contrast shades, and text labels for each bar have been added to the bottom of the chart. Visual comprehension is still supported when viewed in greyscale.

Original: information does not rely on colour	In Greyscale: relevant information is preserved
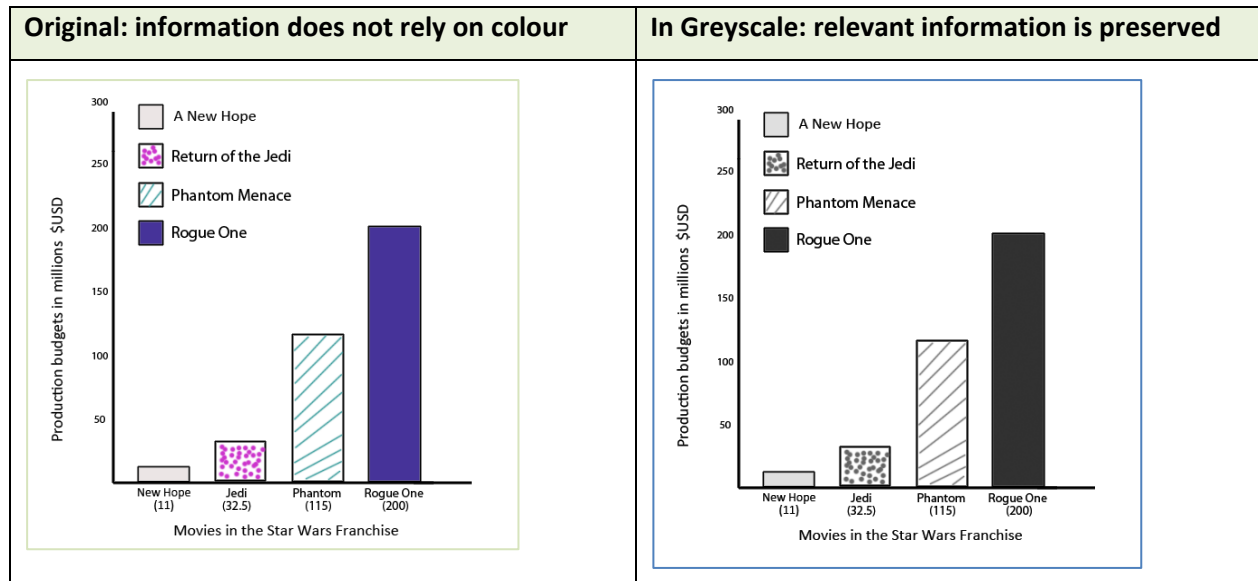
Test what your image looks like in Greyscale
You can quickly review what your image would look like when viewed without colour by looking at it in high-contrast mode. Turn on/turn off high-contrast by simultaneously pressing the following keys on your (PC) keyboard:

Left ALT + Left SHIFT + Print Screen

> **See what your image looks like to someone who is colour blind**.
>
> Colblindor is an online tool where you can upload your images to test for colour blind visibility. The tester allows you to select a type of colour vision to simulate.

Colour Contrast

"Ensure that when an image is used to convey information or functionality…it has sufficient contrast."[7]

Images can include text or symbols conveying meaning, and you must provide enough contrast between the background colour and foreground elements to support perceivability of the text or symbol.

According to the Web Content Accessibility Guidelines (Level AA) for graphical objects, this contrast ratio must be at least **4.5:1** and applies to graphical elements that include:

- Icons
- Components of charts and graphs
- Buttons

Examples of icons or website buttons presented in high-contrast colours

Test your contrast ratios

There are many colour-contrast checker tools available and you may already have one you like. We like WebAIM's Contrast Checker for quick tests on background-to-foreground colour contrast ratios.

CHECKPOINT 2: USE OF COLOUR & CONTRAST

Yes/No	Is colour in your course materials and images:
	One of several means of conveying information?
	If the point you are making depends on colour to be understood, you need to edit your image or formatting so that concepts presented in the visuals are not lost to those who are colour blind or who require high contrast between colours.
	Presented with sufficient contrast between background and foreground elements?
	To support perceivability of content presented in an image, your image must have a ***minimum*** *contrast ratio of 4.5:1.*

3. EXTENDED DESCRIPTIONS FOR COMPLEX IMAGES

Some images (e.g. medical diagrams, maps, graphs) are too complex to be described with 1-2 sentences of ALT text. In these cases, you should either provide context details in the text surrounding the image **OR** provide a link to direct students to an extended, text-based description located on a separate page.

Why would you need an extended description?

Extended descriptions are used when the amount of text required to fully explain the context or content of the image is too long for ALT text.
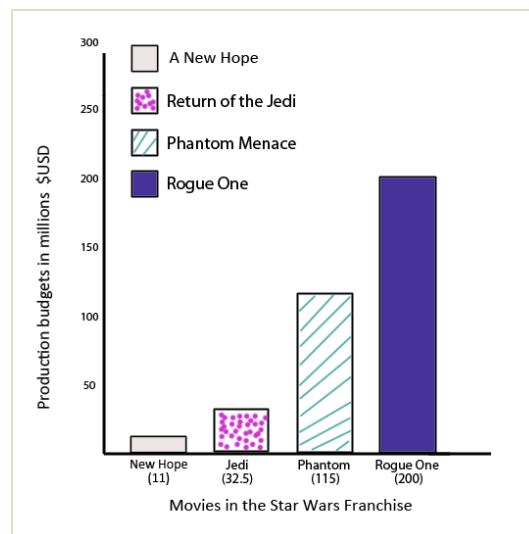
Extended descriptions of complex images provide students access to the content when they:

- Are blind or have low vision.
  Text is read by screen readers in place of complex images (e.g. image-renderings of charts, graphs, etc.)
- Have a form of cognitive disability.
  Text descriptions of complex images can help clarify or describe the concept/s being conveyed by the image.

When do you **need** extended descriptions?

Begin by reviewing the PURPOSE for including this image. It might be a complex image, but your purpose for including it may be to highlight something relatively simple. In that case, you may be able to provide that summary in your 1-2 sentence ALT text description.

Consider the bar graph below. If you are including it just to highlight that the movie *Rogue One* cost six times as much money to produce as *Return of the Jedi*, you can fit that into an ALT text description. You do not have to write an extended description to reproduce all of the data included in the graph if that is not relevant to why you have included the image.

If your complex image contains substantial information students need to know, a two-part text alternative is required:

1. **ALT text description** identifying what the image is and where the extended or long description is located.
2. **Long or extended description** representing the *essential information conveyed by the image*.[8]
   The long description may be covered in the text surrounding the image on the page, or may be provided on a separate page that is linked from the image.

What do you need to include in long/extended descriptions?

What you need to include in a long description will again be informed by the purpose for including this image.

At all times remember that complex images can be challenging for many learners to understand, including students with low vision or learning disabilities, or students from different cultural backgrounds. When long descriptions for complex images are available to everyone, you help to ensure the intended information reaches all your students.

The World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI) has the following guidance to share about long descriptions for complex images. (Bolding has been added to highlight specific considerations.)

> "There are situations **where the composition of an image is important** and needs to be provided in the long description. For example, the sequence of colors used and the relative heights of the columns in a bar chart may be relevant information about the structure of the chart, in addition to the actual values and trends that it depicts."

> "It is also **good practice to refer to and summarize more complex images from the accompanying text**. For example, a reference such as "*The following graph shows that visitors were lost in the first quarter, but the numbers recovered in the second quarter*" helps to point out the relevant information that the image is intended to present."

CHECKPOINT 3: EXTENDED DESCRIPTIONS FOR COMPLEX IMAGES

Yes/No	Is your extended description:
	An **accurate** equivalent to the information you intend to convey through the image/graphic?
	Providing information that is **not redundant**? *If the equivalent text for your complex image is already presented in the context of the page (i.e.in the text surrounding or adjacent to your image), you do not need to provide this same information as an extended description on a separate page.*
	Easily accessed via a **link from or adjacent to your complex image**?

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[1] In HTML tagging pre-HTML 5, this was material was referenced by the LONGDESC attribute in an Image tag. The LONGDESC attribute is not currently part of HTML 5 which is why we recommend providing a standard (visible) link to the extended description page as well – or in place of – the LONGDESC reference.

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