National Center on
Accessible Educational Materials

Protocol for Curating Accessible OER

By National AEM Center at CAST

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IDEAs
that Work
Office of Special
Education Programs

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Defining Accessible Educational Resources

In the 2017 National Education Technology Plan, the U.S. Department of Education defines open educational resources (OER) as teaching, learning, and research resources that reside in the public domain or have been released under a license that permits their free use, reuse, modification, and sharing with others. OER can include complete online courses, textbooks, documents, images, videos, and assessment items. This protocol itself is an example of an OER. It is licensed under a Creative Commons license (CC BY-SA 4.0). This license allows anyone to freely share and adapt the protocol as long as there is proper attribution to the authors and any new versions include the same license as the original.

Equity & OER: The Role of Accessibility

The availability of high-quality OER plays an important role in addressing equity issues in education. For its full potential to be realized for every learner, however, OER must

be more than openly licensed at a reasonable cost. They must also be usable across the variability that learners bring to any learning environment. For this to be the case, OER must be designed according to accessibility best practices that ensure they will work with the assistive technologies many learners with disabilities use to access the curriculum. As an added benefit, accessible OER are also often mobile-friendly, which is an important consideration for increasing participation through remote and distance learning. The AEM Center article [Open Educational Resources: Ensuring Inclusive Learning in Uncertain Times](#) explores the relationship between OER, accessibility, and equity in more detail.

Purpose & Use of the Protocol

During 2019 and 2020, the AEM Center facilitated an Accessibility Community of Practice (CoP) with members of the [#GoOpen Network](#). The goal of the CoP was to seek creative solutions to OER accessibility challenges. The work of the CoP contributed to this protocol, which is based on the best practices outlined in the Accessibility Checklist in [ISKME's School Librarian OER Curation Framework](#). The rapid move to remote learning in response to COVID-19, and the challenges many school districts will continue to face in making sure students with disabilities have accessible materials in a timely manner, makes this protocol even more relevant and urgent for educators and families.

The purpose of the Protocol for Curating Accessible OER is to provide detailed yet easily implemented techniques for evaluating the accessibility of OER in the following common formats:

- Microsoft Word and Google Suite documents that are often the source files for other formats, such as PDF and EPUB publications; and
- online resources such as websites and instructional videos.

The Protocol for Curating Accessible OER can be implemented by a range of users, from an individual educator who is selecting materials for a lesson to a committee that is vetting curricula for district or even statewide adoption.

The protocol is organized by six areas that are relevant to accessibility practices. The mnemonic, "**SLIDE**," makes the first five easy to remember:

1. [Styles and Document Structure](#)
2. [Links and Navigation](#)
3. [Image Description with Alt Text](#)

4. [Design with Color and Typography](#)
5. [Evaluation with an Accessibility Checker](#)

The sixth area is [Video Accessibility](#).

Each practice has its own section of the protocol, which begins with its importance for OER accessibility. Step-by-step instructions with screenshots show you how to check an OER for related accessibility practices. Techniques are categorized by the format of the material (e.g., Word, Google, web page etc.).

This protocol is intended as a decision-making tool to support the vetting of OER. It is not intended as a substitute for a full audit of conformance to accessibility standards. No conformance claims should be made based on the use of this protocol.

Should you have any questions or suggestions for improving this protocol, please contact the [AEM Center team at aem@cast.org](mailto:aem@cast.org).

Styles and Document Structure

A style is a formatting instruction in a word processing application that applies a consistent appearance to selected text. A style also "tags" the selected text based on the function it performs in the document, such as paragraph text or section heading. The styles in a document make up its structure.

Why Are Styles and Document Structure Important?

A document with a clear and logical structure can improve understanding for everyone. Section headings "chunk" information into smaller segments that are easier to identify and process. Concise and descriptive section headings can also help with reader comprehension by highlighting the main ideas and relationships in a document. A bonus of properly using styles to create section headings: You can use the styles to automatically create a table of contents that not only reveals how the information is organized but also improves navigation, which is especially helpful on longer documents.

For learners who are blind and use screen reader technology, properly styled headings are necessary for efficient navigation. Screen reader users do not always read a website or document from beginning to end in a linear way. A screen reader provides robust navigation options in addition to reading content aloud. Most screen readers support a keyboard shortcut or gesture that provides a list of the section headings. By selecting a heading from this list, learners can jump to specific sections of a long

website or document. This capability significantly improves the efficiency with which learners can navigate the content using their assistive technology, allowing them to focus more of their energies on learning.

Indicators of Best Practices for Styles and Document Structure

When evaluating an OER for accessibility, here's what to look for:

- Content is organized into sections, and each section starts with a unique heading or subheading that succinctly describes what the section is about.
- Section and subsection headings are created with proper markup. This means that the creator used styles rather than only formatting options, such as making the text bigger and bold.
- Headings and subheadings are used sequentially (e.g., Heading 1, Heading 2, etc.). Typically, a web page or document should have only one Level 1 Heading (H1) for the page/document title, with a Level 2 Heading (H2) used for the major sections, a Level 3 Heading (H3) for the subsections, and so on. You can think of this as an outline structure. An example of an exception to this guidance would be a comprehensive document with a cover page, such as this protocol. In this case, the Title style is applied to the name of the document.

Checking for Proper Use of Styles and Document Structure

Select a format from this list for instructions on how to check the proper use of styles for section headings in an OER:

- [Use of Styles in Microsoft Office Documents](#)
- [Use of Styles in Google Workspace Documents](#)
- [Use of Styles in Web Pages](#)
- [Use of Styles in PDF Documents](#)

Use of Styles in Microsoft Office Documents
In Microsoft Word for Office 365, place your cursor anywhere in a section heading's text and check to make sure the appropriate heading style (Heading 1, Heading 2) has been selected in the Home tab of the Ribbon.

To check the logical organization of the headings:

1. Open the Navigation Pane (View, Navigation Pane).
2. Choose the Document Map or Headings tab (this will vary according to the version of Office).
3. Confirm that every item that is styled to look like a heading in the document is listed in the Navigation Pane (has a heading style applied to it). As you select

each heading in the Headings tab, you will navigate the section/subsection structure of the document in much the same way a screen reader user would (most screen readers support a keyboard shortcut to skip from one heading to the next).
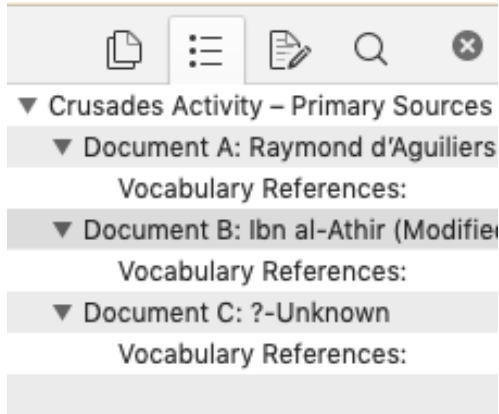

Another way to check the document structure in Microsoft Word is to add a table of contents based on the section headings by choosing References, Table of Contents. The table of contents should provide a logically organized outline of the document's content.

On a PowerPoint slide, the use of descriptive titles performs a similar function as the section headings in Word. Use the Outline View (View, Outline View) to confirm each slide has a descriptive and unique title. If the design requires it, the slide title can be hidden from view while keeping it in the reading order for screen readers:

1. Open the Selection Pane (Home, Arrange, Selection Pane).
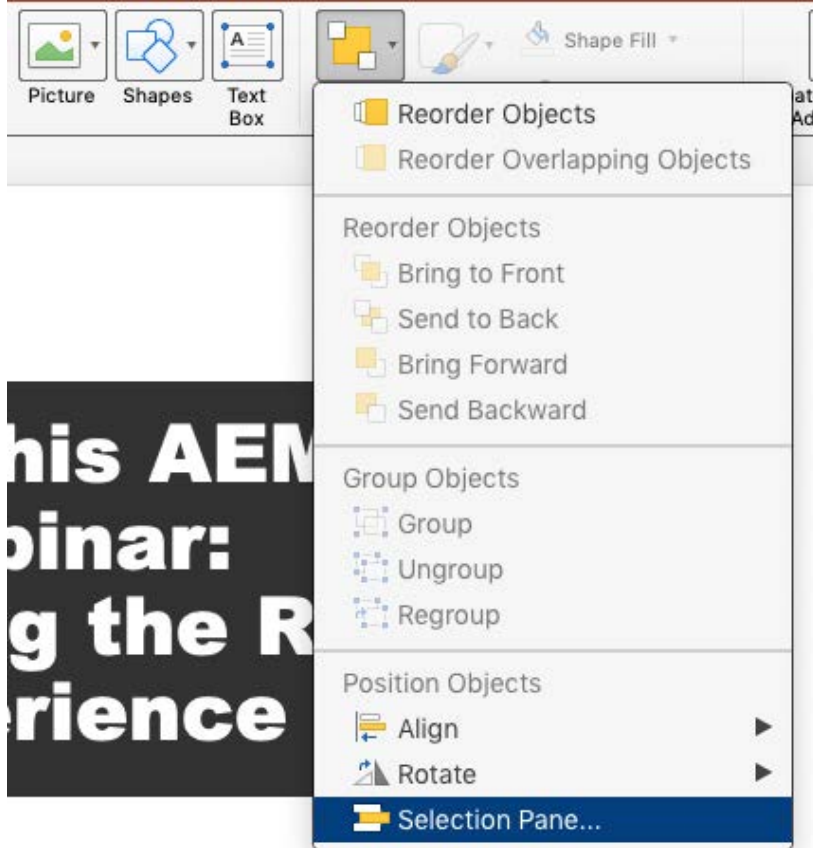
2. Make sure the slide title (and optionally a slide number) is one of the first things listed near the bottom of the Selection Pane. Items near the bottom of the Selection Pane are read first, while those near the top are read last:
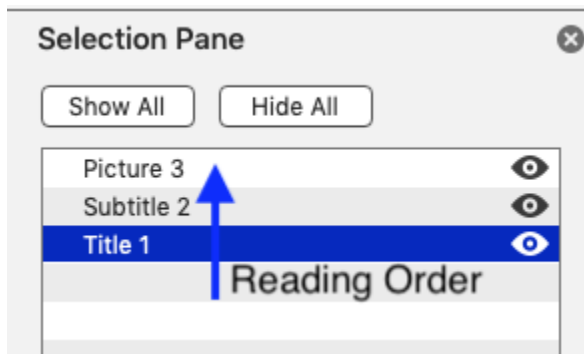
3. To hide a slide title, select the icon that looks like an eye to the right of its name. The title will be hidden in the slide, but it will still keep its place in the reading order for screen reader users.

**Use of Styles in Google Workspace Documents**

The [Grackle add-on for Google Workspace](#) will identify improper use of styles in Google Docs, including improper nesting. However, a subscription is needed to get guidance on

how to fix the errors Grackle identifies:

Headings   1

Headings should be used

A single "Heading 1" should be used

Headings must be properly nested

Alternatively, you can check the heading structure manually. Place the cursor anywhere inside the section heading text and confirm the appropriate style is selected in the Styles dropdown menu in the Google Docs toolbar:

100%   Heading 2   Arial

Normal text

Title

Subtitle

Heading 1
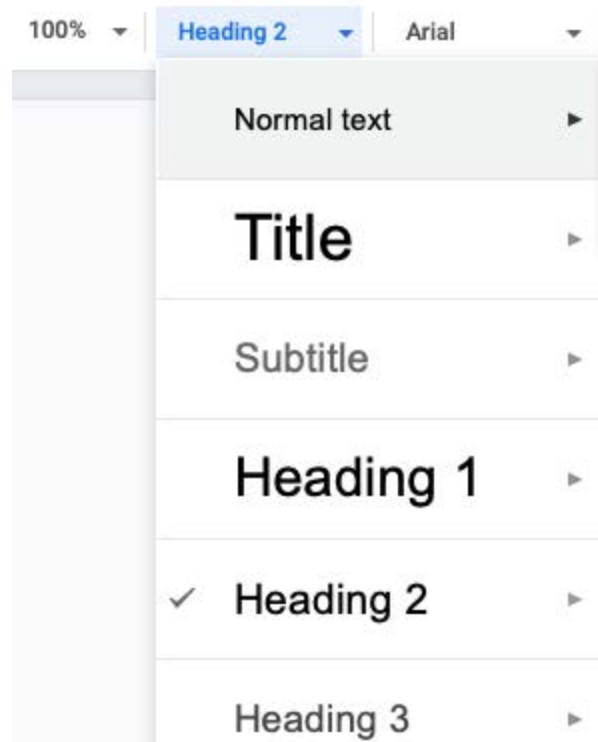
✓ Heading 2

Heading 3

A style of "Normal text" would indicate the heading has been created through formatting options only (making text larger and bold). As with Microsoft Word documents, another way to check the document structure is to add a table of contents based on the section headings, by choosing Insert, Table of Contents.

Google Slides does not have an outline view or a selection pane similar to the one in Microsoft PowerPoint. For the best results, use the placeholders provided in the various

templates to make sure each slide has a unique slide title and a reading order that makes sense.

Use of Styles in Web Pages

Use the free [tota11y bookmark or browser extension from Khan Academy](#) to view the heading structure of a web page and confirm that headings are properly nested:

1. Once you have the extension installed, select the bookmark. The icon for tota11y (a pair of eyeglasses) will appear in the lower left corner of the screen.
2. Select this icon and choose Headings.
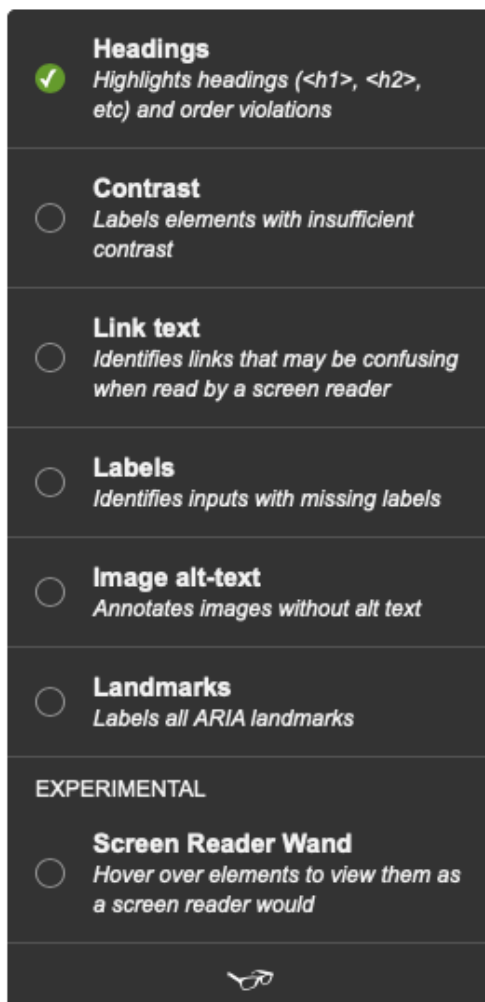
3. A dialog in the lower right corner will show you the heading structure for the current web page, with errors explained in a separate tab.
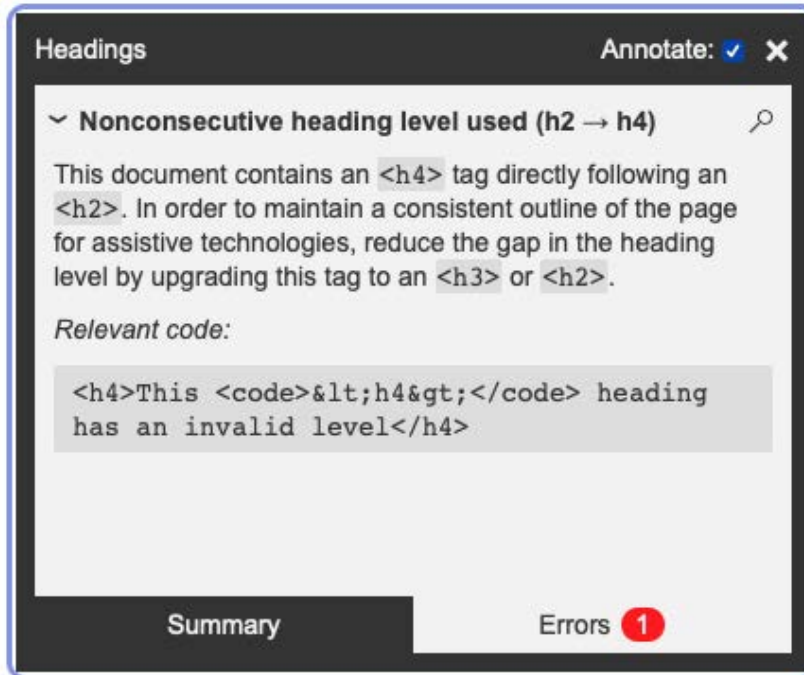
Use of Styles in PDF Documents

Use the free [PDF Accessibility Checker (PAC 3)](#) (available only for Windows) to check the document structure of a PDF document. PAC 3 will flag it as an error if a document has no assigned headings or if heading styles are not nested properly (if any headings are skipped over in the document structure). You can manually check the document structure with PAC 3 as follows:

1. Open the PDF document with PAC 3.
2. Choose the Logical Structure option.
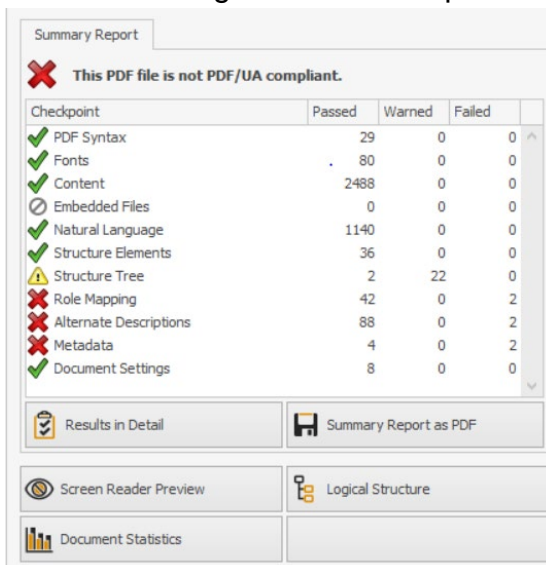
3. Choose Structure Elements to see the document structure.
4. Confirm that text that looks like a heading in the Page View is marked up as such in the Structure Elements pane. Also, check to make sure the headings are properly nested in a logical way (e.g., Heading 3 is not used before Heading 2, etc.).
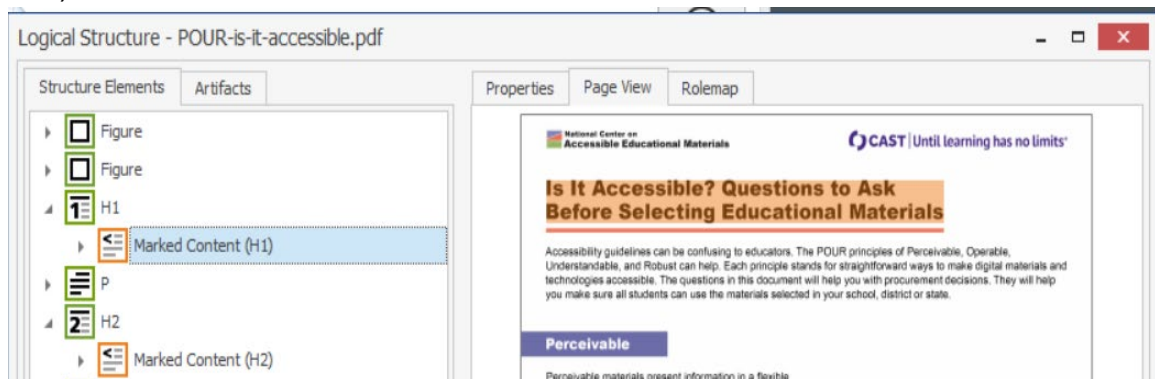
If you have access to Adobe Acrobat DC (the version of Adobe Acrobat with editing capabilities), you can open the Tags panel (View, Show/Hide, Navigation, Tags) to review the tags assigned to the items in the PDF document. The Tags panel indicates the order in which items will be read by screen readers. You can select a tag to highlight the content in the document that corresponds to it. The tags should be in the correct order in the Tags panel (a level one heading should come before a level two heading):
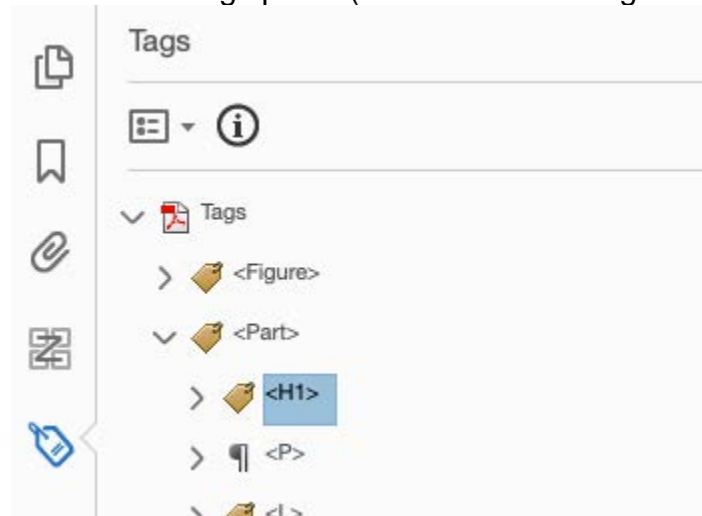
Links and Navigation

Hyperlinks, usually just called links, are a foundational concept of the web. They allow authors to reference additional online resources that enhance the richness of OER. They can also improve the usability of long documents by providing navigation between

the sections of the document. You can see examples of these uses of links throughout this protocol.

Why Are Descriptive Links Important?

Descriptive link text replaces a web address with a description of the link's destination. The use of descriptive link text improves usability for all learners. The link text sets expectations about not just the content on the other side of the link but also any actions that might take place when it is selected: Will a new window or tab open? Will a file be downloaded? By helping learners quickly answer these questions, descriptive links improve the navigation and overall usability of OER for everyone.

Descriptive links are helpful for learners who are blind and use screen reader technology to listen to the content of a web page or document. Most screen readers support a keyboard shortcut or gesture that brings up a list of all the links to assist with navigation. If a link reads as "click here" or "learn more" when presented on a list, it will be difficult to determine what will happen when the link is selected. For this reason, links need to be meaningful on their own, without relying on the surrounding content to provide context.

Indicators of Best Practices for Descriptive Links

When evaluating an OER for accessibility, here's what to look for:

- Links make sense on their own, without the surrounding text for context, and they do not use generic language such as "click here," "about," or "learn more."
- Links avoid the use of full web addresses as the link text. To provide a better experience for those listening with screen readers, the full web address is hidden behind more descriptive link text or a link shortener is used (with a descriptive custom ending).
- Links prepare the reader for any unexpected actions such as the opening of a new window or tab, or the downloading of a file.
- For resources that are also going to be printed (e.g., handouts for presentations, instructions, etc.) it may be helpful to use a link shortener and to include the shortened version of the full web address (with a custom ending) in parenthesis after the more descriptive link text.

Checking for Descriptive Links

You may need to do a content review by scanning the document or website and flagging any links that do not follow best practices for meaningful, descriptive links. Some issues, such as links that use generic language (e.g., "click here") or a full web

address as the link text, will be easy to spot. Others, such as links that open new windows without warning, may require more careful testing - you may need to follow the link to confirm the action resulting from its selection.

Select a format from this list for additional guidance on how to check for descriptive and meaningful link text in an OER:

- [Descriptive Links in Microsoft Word Documents](#)
- [Descriptive Links in Google Workspace Documents](#)
- [Descriptive Links in Web Pages](#)
- [Descriptive Links in PDF Documents](#)

Descriptive Links in Microsoft Office Documents

At the time of this writing, the Microsoft Office Accessibility Checker does not flag links that use generic text ("click here") or full web addresses. A content review is recommended.
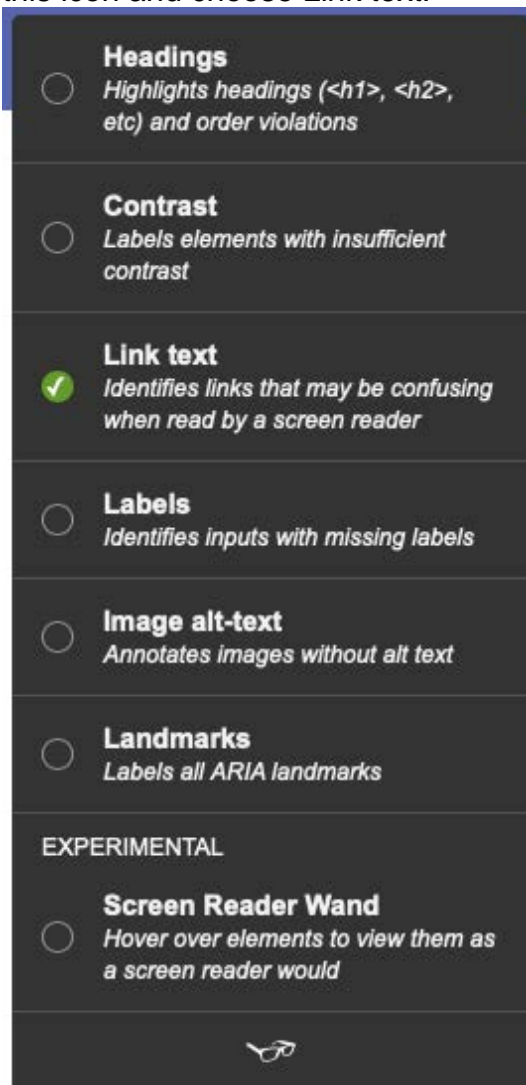
Descriptive Links in Google Workspace Documents

The [Grackle accessibility add-on for Google Workspace](#) identifies links that are not descriptive under its Contents section. However, in testing this feature missed a number of items that used generic text or a full web address. A content review is recommended.

Descriptive Links in Web Pages

Use the free [tota11y bookmark from Khan Academy](#) to check for descriptive links on a web page. Once you have the extension installed, select the bookmark. The icon for tota11y (a pair of eyeglasses) will appear in the lower left corner of the screen. Select

this icon and choose Link text:

Headings
○ *Highlights headings (<h1>, <h2>, etc) and order violations*

Contrast
○ *Labels elements with insufficient contrast*

Link text
✓ *Identifies links that may be confusing when read by a screen reader*

Labels
○ *Identifies inputs with missing labels*

Image alt-text
○ *Annotates images without alt text*

Landmarks
○ *Labels all ARIA landmarks*

EXPERIMENTAL

Screen Reader Wand
○ *Hover over elements to view them as a screen reader would*

👓

A dialog in the lower right corner will show you any errors related to links that are not descriptive, along with suggestions for how to fix each error:
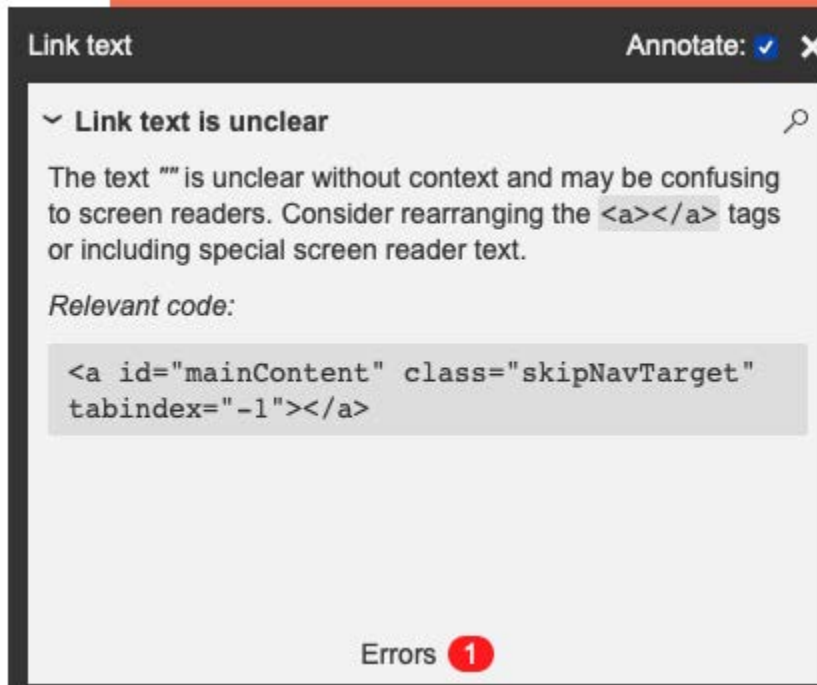
You can also manually check the links by navigating through the web page using just your keyboard. As you press the Tab key, links (and other controls such as form fields) should receive a visible keyboard focus and this focus should move around the page in a logical order. As you tab through the page, review the link text to make sure it makes sense on its own, without the surrounding text providing context (as this is the way it may be accessed by assistive technology users).

Descriptive Links in PDF Documents

Open the PDF document in the free Acrobat Reader and perform a tab order test: Press the tab key on your keyboard to navigate by links. Links should be highlighted in a logical order. As you review the tab order, you should also review the link text to make sure it is descriptive.

Image Description with Alt Text

Images can make content in OER more visually appealing and engaging, particularly when those images are relevant to the content. Images can also support understanding by providing multiple representations of the information.

Why Is Image Description with Alt Text Important?

Not everyone uses sight to gain information from images. Alternative text or "alt text" is a concise summary of the information an image conveys. Someone who is blind can enjoy equivalent access to this information by having the summary read aloud to them with screen reader technology. Another reason to provide text alternatives relates to connectivity issues, particularly in situations of remote learning: Turning images off speeds up browsing on a slow connection and saves bandwidth while accessing the content on a mobile device with a limited data plan.

Indicators of Best Practices for Image Description with Alt Text

When evaluating an OER for accessibility, here's what to look for:

- Images that convey information include appropriate alternative text. The alt text should be brief (no more than 125-150 characters, or a couple of sentences). Screen readers announce when an image is selected. It is not necessary to include "image of" or "graphic of" in the alt text.
- Images that are purely decorative are marked up in such a way that they can be skipped by a screen reader. Not all authoring tools provide the option to indicate an image is decorative. For those that do not, the use of the word "decorative" for the alternative text is recommended.
- Images that are functional (included in a link) have alternative text that reflects the action that will take place when the link is selected (e.g., a new window will open, or a file will download).
- More complex images (e.g., diagrams, charts) may need a long description that explains the image in more detail than is possible with just the alternative text. This long description should be provided in the surrounding text whenever possible, as everyone can benefit from the more detailed explanation. If space is an issue, the long description can be provided in another section of the document that can be reached from a link near the image.

Checking Images for Alt Text

In addition to confirming that an image either has alt text or has been marked as decorative (per instructions below), you will need to confirm the alt text is appropriate for the purpose and context in which the image is used. Select a format to learn how to check an image for alt text:

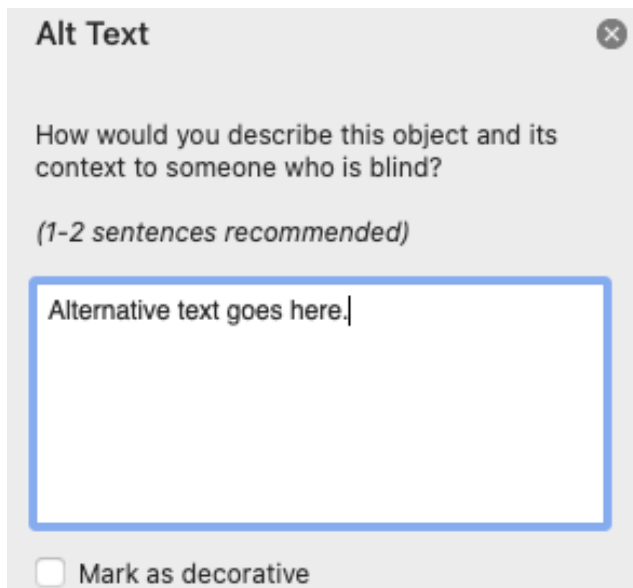- Alt Text in Microsoft Office Documents

- [Alt Text in Google Workspace Documents](#)
- [Alt Text in Web Pages](#)
- [Alt Text in PDF Documents](#)

Alt Text in Microsoft Office Documents

The built-in accessibility checker (found in Review, Check Accessibility) will identify images that are missing alt text. Selecting the item listed in the checker will highlight the image with the error. The steps for confirming an image has appropriate alt text will depend on the version of Office you have installed.

In Microsoft Word and PowerPoint for Office 365:

1. With the image selected, choose Alt Text in the Picture Format tab of the Ribbon (or right-click the image and choose Edit Alt Text). This will open the Alt Text pane on the right side of the screen.
2. Make sure the image has an appropriate description, or check the box for "Mark as decorative" if the image does not add any meaning and is used purely for decoration:
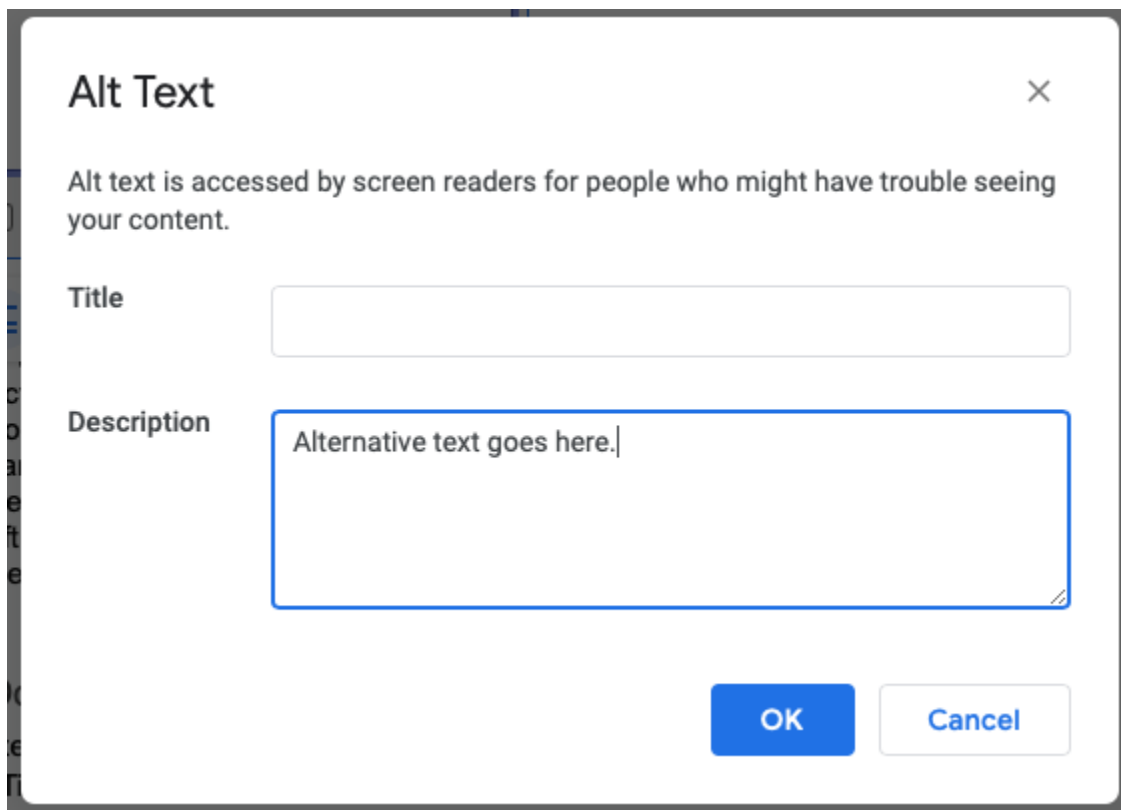

For older versions of Microsoft Office:

1. With the image selected, choose Format, Picture (or right click on the image and select "Format picture").
2. Choose the Layout and Properties pane.
3. Expand the Alt Text section.

4. Make sure appropriate alt text is included in the Description field and that the Title field is left blank. This will ensure the alt text is properly preserved if the document or presentation is converted to PDF.

Alt Text in Google Workspace Documents

The free version of the [Grackle accessibility checker for Google Workspace](#) will identify any images that are missing alt text. However, you will need to manually inspect the images to make sure the alt text is appropriate.

To confirm that an image has appropriate alt text, right-click on it and choose Alt Text. Google Suite (Docs and Slides) is similar to older versions of Microsoft Office in that it provides a Title and a Description field, but only the text entered in the Description field is preserved when the document or presentation is converted to PDF.
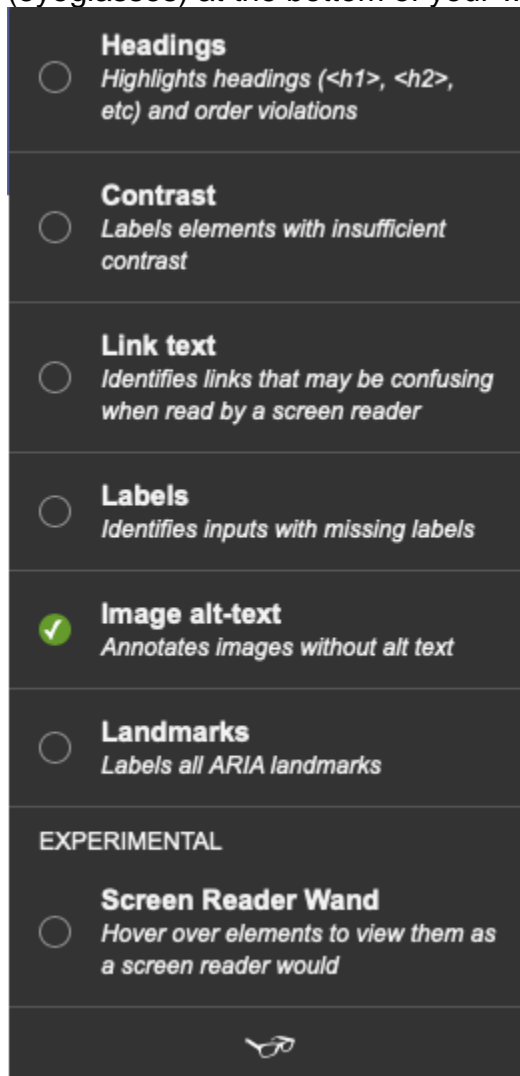

Alt Text in Web Pages

The free [tota11y bookmarklet from Khan academy](#) can help you identify images that are missing alt text. Once you have tota11y installed, launch it by selecting the icon

(eyeglasses) at the bottom of your web browser window, then choose "Image alt-text":

Headings
Highlights headings (<h1>, <h2>, etc) and order violations

Contrast
Labels elements with insufficient contrast

Link text
Identifies links that may be confusing when read by a screen reader

Labels
Identifies inputs with missing labels

✓ **Image alt-text**
Annotates images without alt text

Landmarks
Labels all ARIA landmarks

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Screen Reader Wand
Hover over elements to view them as a screen reader would

Each error will be explained in more detail on a pane that will open in the lower right corner of the screen. Select the magnifying glass next to each error to highlight the

image that is missing alt text:
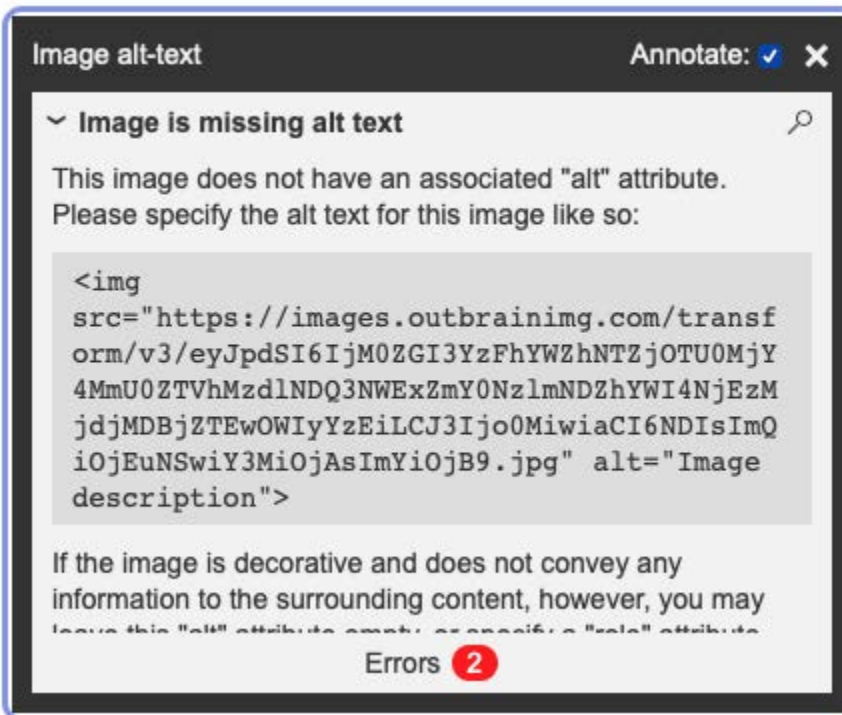
Alt Text in PDF Documents

For PDF documents, use the free [PDF Accessibility Checker (PAC 3)](#) to confirm that appropriate alt text is included with each image:

1. Open the PDF document in both Adobe Acrobat Reader and PAC 3 and arrange your windows so that you can see both views of the document side by side.
2. In PAC 3, select the Screenreader Preview option to view a linear version of the PDF document (the order shown is the order in which a screen reader will read the content).
3. Confirm that each image shown in Acrobat Reader has appropriate alt text as shown with a white background in the screen reader preview that PAC 3 provides.

Checking Alt Text for Purpose and Context

Automated checkers can identify images that are missing alt text, but they are not as good at analyzing the quality of that alt text. More recently, artificial intelligence has been used to automatically generate alt text. This feature will continue to improve with time, but the results typically require some editing for accuracy.

Checking for accurate and useful alt text is both an art and a science. It requires some subjectivity because the appropriate alt text will require consideration of the purpose for

selecting an image and the context in which it is used. Given that, identifying high-quality alt text is a skill that is improved with practice and collaboration. For more complex images such as charts and diagrams, we recommend approaching long descriptions (a longer version of alt text) as a group activity that takes multiple interpretations into consideration to arrive at the best description.

Images generally fall into three broad categories:

- Decorative images are used to provide visual appeal and are not essential to understanding the content. These images should be marked up in such a way that they can be skipped by screen readers to reduce the "noise" in the content that is read aloud to blind or low vision learners.
- Functional images are part of a link and should provide a description of the destination of the link or the action that will take place when the link is selected (e.g., downloading a file in another format).
- Informative images are essential for understanding and need to have a concise description that starts with a broad overview of the key information followed by key details. The details you include in the description will depend on the purpose or goal for using the image.

The [alt decision tree](#) from the World Wide Web Consortium (W3C) can help you determine what kind of image is being described in an OER. As you review the alt text, consider the context where the image is used. Is the image already described in the surrounding text? If so, it should be treated as a decorative image to avoid redundant information being read aloud to screen reader users.

Design with Color and Typography

The effective use of color and typography can add aesthetic appeal and make content more inviting and engaging for learners. It can also mean the difference between a design that is easy to read and one that presents barriers that impact a learner's motivation for engaging with the content.

Why is Choice of Color and Typography Important?

Text with low contrast may be difficult to perceive for some learners, including those with low vision or those viewing the content in less-than-ideal lighting conditions (where glare can be an issue). Some learners may also have difficulty seeing certain colors due to color-blindness. With good color contrast, learners can focus more of their energies on understanding the information, rather than on overcoming barriers to perception.

As with the use of color, typography can have an impact on how much energy learners spend to perceive and process information. Preferences for fonts and spacing vary by learner, and ideally the reading application provides options for personalizing adjustments to meet the unique needs of each individual (see the AEM Center's Personalizing the Reading Experience web page for examples). Starting with a good baseline for font choice, text size, and other elements of typography can provide a good experience by default.

Indicators of Best Practices for Use of color

When evaluating an OER for accessibility, here's what to look for:

- Colors should meet a minimum color contrast requirement of 4.5:1 for body text and 3:1 for large text (18 pt. or larger, typically the text used in section headings). Body text only needs to meet the lower 3:1 contrast ratio if it is 14 pt. or larger and bold.
- Color should not be used alone to convey meaning. An additional cue should be used for those who are unable to distinguish between different colors (or between shades of the same color).
- Links should not have their underline removed through styling. If the underline is removed, the link text needs to have a color contrast ratio of 3:1 with the surrounding text (in addition to the requirement of a color contrast ratio of 4.5:1 with the background color).
- If instructions are included in an OER, make sure they do not refer to color and other visual characteristics (e.g., shape, size, or location).

Indicators of Best Practices for Typography

When evaluating an OER for accessibility, here's what to look for:

- Use sans-serif fonts for body text. Sans-serif fonts, such as Arial or Verdana, lack any ornamentation at the end of their strokes. This lack of ornamentation increases the space between the letters and makes the text easier to read, especially at smaller text sizes.
- Avoid the use of formatting alone for emphasis (e.g., bold or italics). Use text instead (e.g., "Important:" or "Note:") to highlight information that needs focused attention from learners. Screen readers do not always announce changes in styling by default.
- Left-align blocks of text. Full justification can add uneven spacing between words, resulting in distracting "rivers of whitespace" that run down the page where extra spacing has been added.

- Begin with a good baseline text size. For documents, a baseline text size of 12 pt. for body text is recommended. For slide decks, 22-24 pt. for the body text is recommended as a minimum text size.

Checking for Color Contrast

Use a free color contrast checker such as the Colour Contrast Analyser from TPGi to make sure the choice of background and foreground colors meet the minimum contrast ratio requirements.

On Windows, the Colour Contrast Analyser includes a color picker to allow you to select the foreground and background color combination that will be checked. On the Mac, the Colour Contrast Analyser will open the Mac's color picker tool when a color swatch is selected, but the functionality will be the same.
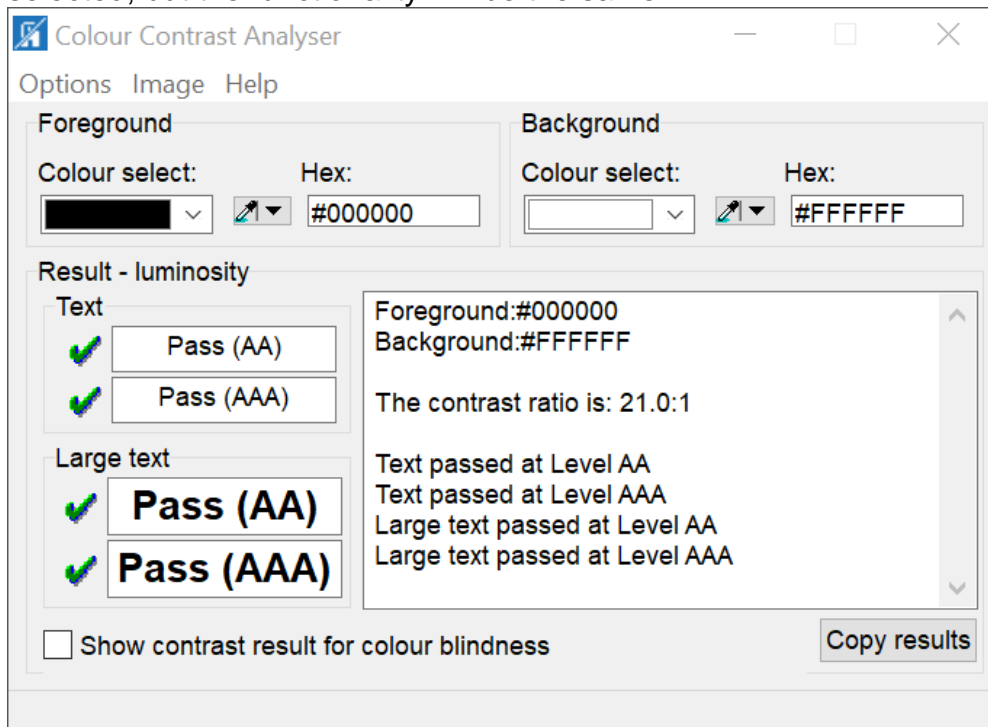
This tutorial video on using the Colour Contrast Analyser from the AEM Center demonstrates the use of the tool to check color contrast on both Windows and the Mac.

The option to check for color contrast is sometimes included in accessibility checkers for websites. For example, it is available in WAVE from WebAIM.

Checking for Use of Color and Typography

The use of colors and other visual characteristics (shape, size, and location) in instructions provided in an OER will require a content review. The same is true for checking the typography (text size, fonts and spacing) used in a resource.

One way to check that color isn't used alone to convey meaning is to turn on the grayscale view in your operating system and confirm the content makes sense when color is removed. This option is especially helpful for reviewing charts and diagrams to make sure they include additional cues and do not rely on color alone for meaning.

The option to switch to a grayscale view will typically be found in the settings or system preferences of your operating system:

- Windows 10: Settings, Ease of Access, Color Filters
- iOS 13 or later (iPad and iPhone): Settings, Accessibility, Display and Text Size, Color Filters
- Mac: System Preferences, Accessibility, Display
- Chromebooks do not have a grayscale option, but an extension such as High Contrast can provide similar functionality for any content accessed through the Chrome web browser.

Evaluation with an Accessibility Checker

Some authoring tools now include a built-in accessibility checker to make it easier to identify and correct accessibility issues. Even the best automated accessibility checking tools have their limitations due to the subjective nature of many accessibility practices. For example, an automated checker may reveal that an image has alt text, but it may not be able to determine if that alt text accurately describes the content of the image. This determination will often require subject matter knowledge, as well as a consideration of the context and the purpose for using the image.

Why is Evaluation with an Accessibility Checker Important?

As long as you keep the limitations of automated checkers in mind, and don't see them as a replacement for learning best practices, they can make a valuable contribution to your evaluation of OER. Whenever possible, automated checkers should be used as a starting point for authentic evaluations that includes usability testing with a range of learners who can test how well the content will work with a variety of tools, including assistive technologies and mobile devices.

Best Practices for Using an Accessibility Checker

- Use an accessibility checker to verify that an OER conforms to those accessibility practices that can be assessed with an automated check (e.g., missing alt text).

- Review the guidance provided by the accessibility checker (if any is available) to help you understand any recommended fixes and build up your knowledge of accessibility best practices.
- Review the content of the OER on a mobile device to ensure it is not only accessible but also mobile-friendly.
- Identify learners who can provide authentic feedback about the usability of resources and compatibility with the technologies they use (including assistive technology).
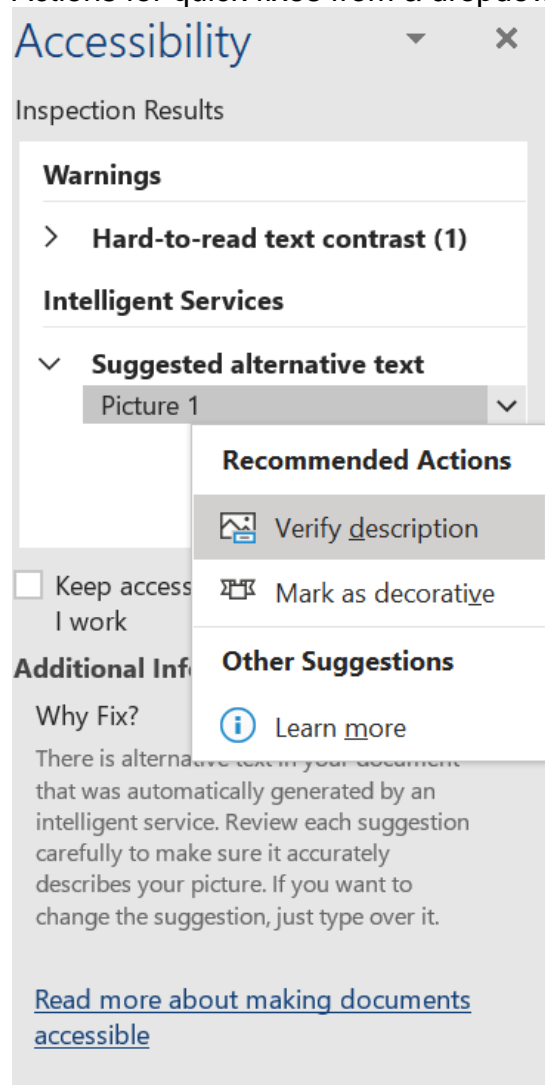
Using an Accessibility Checker

Select a format to learn how to use its accessibility checker:

- [Using an Accessibility Checker in Microsoft Office Documents](#)
- [Using an Accessibility Checker in Google Workspace Documents](#)
- [Using an Accessibility Checker with Web Pages](#)
- [Using an Accessibility Checker with PDF Documents](#)

Using an Accessibility Checker in Microsoft Office Documents

The Accessibility Checker for Microsoft Office 365 applications is found in the Review tab of the Ribbon. Launching it will open an Accessibility Checker pane on the right side of the screen. Select any of the errors listed in this pane to highlight the element (image, heading, etc.) with the accessibility error in the document. Selecting an error will also display an explanation with steps for fixing the error at the bottom of the pane. The Windows version of the Office Accessibility Checker also provides Recommended

Actions for quick fixes from a dropdown menu (e.g., verifying an image description):


Note: On older versions of Office, the Accessibility Checker may not be in the Ribbon. You may have to choose File, Info, Check for Issues to launch it.

Using an Accessibility Checker in Google Workspace Documents

The Grackle add-on for Google Workspace will identify accessibility errors in Google Suite applications (Docs, Sheet and Slides). Grackle can perform a check for free but getting guidance on fixes requires a subscription. To install Grackle: Choose Add-ons, Get Add-ons, and do a search for Grackle.

Once Grackle is installed, launch it by choosing Add-ons, Grackle (Docs, Sheets or Slides, depending on the Google Suite application), Launch. This will perform a check and list any errors in a pane to the right of the document. Select an error to expand it and read an explanation with a list of all instances of that error in the current document.

For example, if there are multiple images with missing alt text, Grackle will list each as a separate error so that you can directly move to that image in the document and perform a fix.
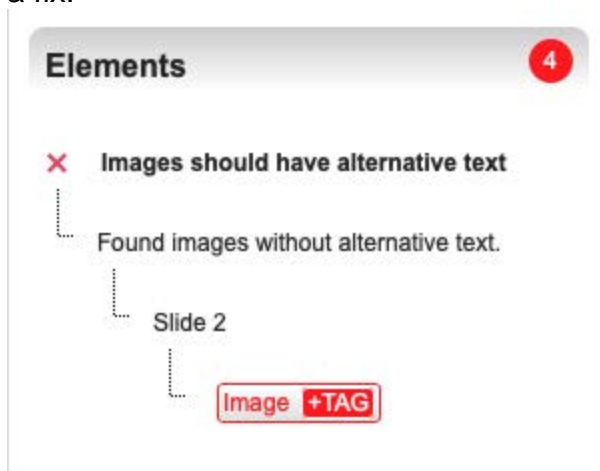
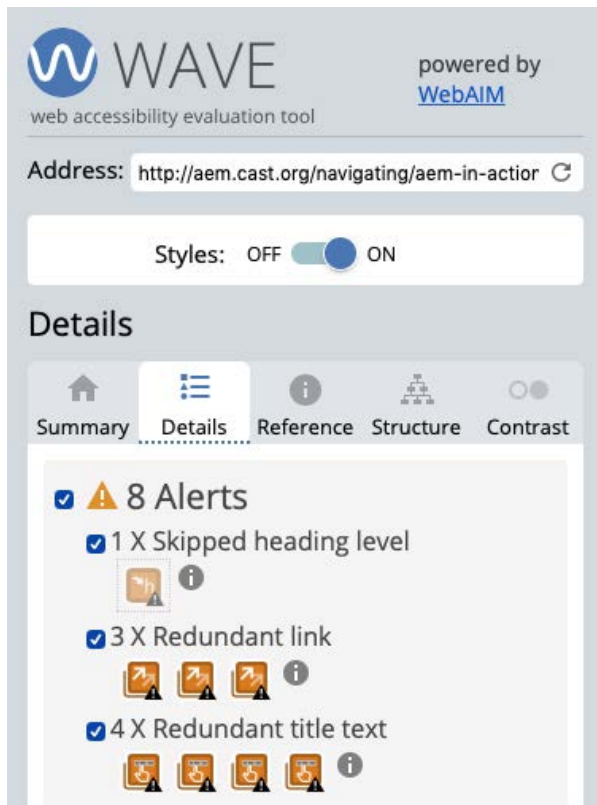## Using an Accessibility Checker with Web Pages

The tota11y extension from Khan Academy can perform some basic checks on a web page. It includes options for checking the document structure (headings), color contrast, link text, and alt text. You have learned how to use these options for tota11y in the other sections of this protocol.

For a more thorough check, the online WAVE tool from WebAIM (which can also be installed as a WAVE Google Chrome or Firefox extension) is also available. It provides a list of errors along with icons that highlight the error on the page when each icon is selected. A color contrast checker is also included in WAVE.

To check a website with WAVE, you have two options:

- Go to the WAVE website, enter the address of the website in the text field at the top of the page and press Enter/Return to view the results.
- With the website to be checked open in Google Chrome or Firefox, select the icon for the WAVE extension, and a pane with the results should appear on the

left side of the screen.

Using an Accessibility Checker with PDF Documents

The free [PAC 3 PDF Accessibility Checker for Windows](#) can be used to check the accessibility of a PDF document if you don't have access to Adobe's Acrobat tool and its built-in checker.

To perform a full accessibility check on a PDF document with PAC 3, select the browse button at the top of the screen and locate document on your computer.
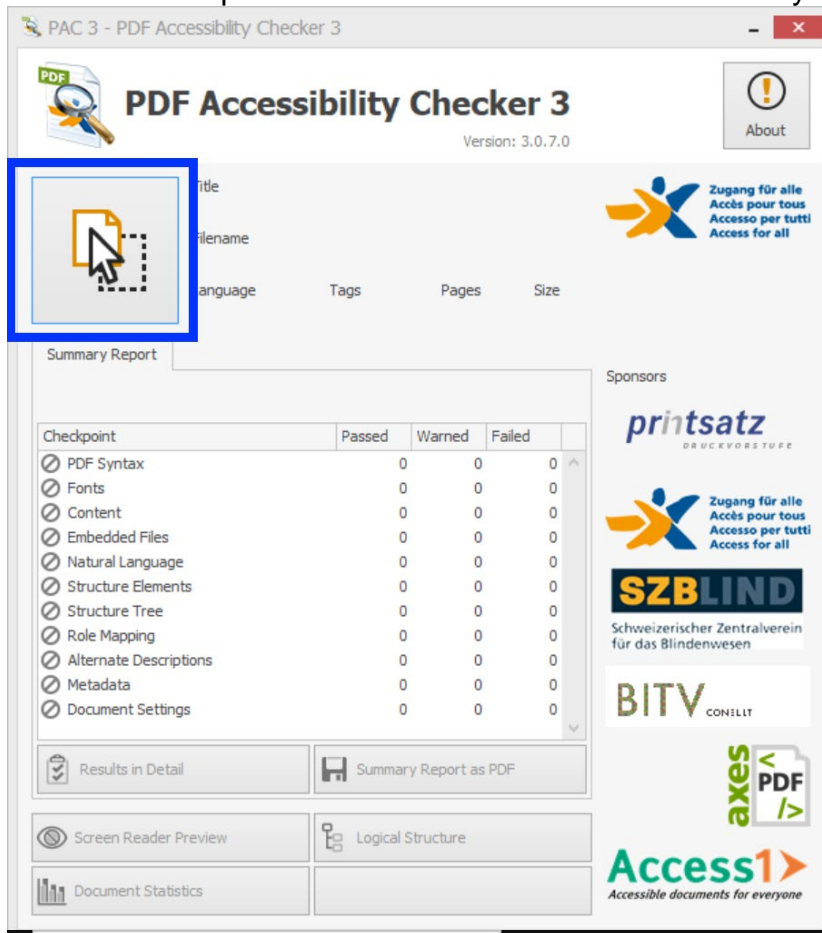
A summary of the results will be shown, but you can choose Results in Detail to review any errors more carefully. This will open a tree view with errors organized into categories that can be expanded to see all instances of each error. When you select an

instance, a pane on the right side will display where the error is found in the document.

Video Accessibility

Videos provide options for presenting information in an immersive way that engages today's learners. They can be used to support learning in a variety of ways, from providing background information to demonstrating the steps of a science experiment.

Why is Video Accessibility Important?

Videos that include closed captions are not only more accessible to learners who are deaf and hard of hearing, they improve understanding and usability for everyone, including:

- English language learners
- Learners with limited or emerging literacy
- Learners who are new to a topic that has specialized vocabulary or jargon

- Anyone listening to the video in a public setting where the ambient sound is too loud

Audio description consists of voice-over narration that describes important visual details that cannot be understood from the main soundtrack alone. The goal with audio description is to make the visual information in media accessible to people who are blind, but others may benefit from the explicit explanations as well.

Videos should also have transcripts. Transcripts make it possible to quickly skim through or search the content without the need to play a long video to find the exact spot where an important piece of information has been shared. Transcripts also benefit learners who are deaf-blind. They can access the information in a transcript using a braille display, which is a small device that converts text into braille in real time.

Indicators of Best Practices for Video Accessibility

- Videos have quality captions that include not only dialogue, but descriptions of other sounds that are important for understanding the content.
- Speaker identification is provided if there are multiple individuals.
- Captions are accurate and in sync with the audio in the video.
- A transcript is provided alongside the video, or a link to the transcript is located near the video. The transcript includes descriptions of any information that is only communicated visually in the video, along with the dialogue and descriptions of sounds that are important for understanding the content.
- Audio descriptions are provided, either as a secondary track or as a separate video that can be accessed from a link near the non-described video.
- The video player can be controlled using only the keyboard.
- Videos do not include blinking or flashing content that could result in a seizure.

Checking for Video Accessibility

Each video in a document or website should have alt text that describes what it is about (see the Image Description with Alt Text section of this guide for additional information on image accessibility). In addition, it should include closed captions that can be turned on and off using a button in the player (usually indicated by the CC symbol). You should play the first minute or so of a video to quickly determine if it only has automatic captions available. You will note these captions by the missing punctuation and other obvious inaccuracies. You should also choose a random point later in the video to confirm your findings about the quality of the captions.

Use the options menu of the player to determine if a track with quality captions is present. Sometimes the automatic captions are presented by default even if a high-quality caption track has been provided.

Audio descriptions, which use narration to describe the action on screen, are also often provided as a secondary track that can be toggled on and off as needed. A link to an audio-described version of the video is an acceptable option.

In addition to checking the video content for accessibility, you should make sure the player can be controlled using only the keyboard. You can try pressing the Tab key on your keyboard to make sure there is a visible focus indicator that moves around the various player controls in a logical order.

Additional Resources from the National AEM Center

The following resources on the AEM Center website provide additional information on accessibility best practices:

- [Vetting for Accessibility](#)
- [Designing for Accessibility with POUR](#)
- [Creating Accessible Documents](#)
- [Creating Accessible Publications with EPUB](#)
- [Creating Accessible Video](#)

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