



Digital Accessibility 101

What is digital accessibility and whom does it benefit?

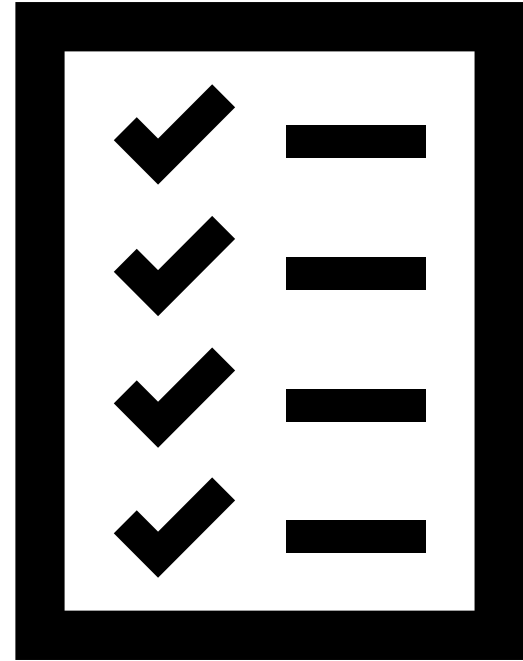
Presented by:

Courtney Ness Fuchs, ATP & Jamis Wehrenberg

May 10th, 2023


What we'll cover today:

- A general definition of digital accessibility
- Ways people with disabilities access digital materials
- Common barriers to accessibility and how to fix them
- Resources to help you get started creating accessible materials



Accessible digital materials
provide *equal experiences*
of content to all consumers.

Accessible digital content is:

- Able to be consumed by everyone, regardless of how they access it
- Required by law for federal agencies and recipients of federal assistance under Sections 508 and 504 of the Rehabilitation Act of 1973
 - [Do Section 508 Accessibility Standards Apply to My Website? | Section508.gov](#)
- Good for search engine optimization (SEO) and business
- 

What are some ways people with disabilities access digital content?

- A blind individual may use a screen reading software such as [JAWS](#) or [Windows Narrator](#)
- A person with gross or fine motor impairments may use a keyboard to navigate instead of a mouse
- A person with severe cerebral palsy may use accessibility switches vs. a mouse and keyboard
- A person with ALS might use an eye-tracking software
- A senior with severe arthritis might use a touchscreen

Barriers to accessing content



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Common barriers to accessibility

- Content that isn't properly structured, i.e. has no heading levels, uses tabs to create the illusion of columns
- Difficult-to-read fonts and spacing
- Color as the only way of conveying meaning, i.e. red is a required field
- Inadequate color contrast
- Images, charts, graphs, etc. without alt text
- Audio and video files without captions
- Too complex of language

START with accessibility in mind

It is far easier to build accessible materials from scratch than to remodel brick-by-brick.

ISSUE 1: Lack of Structure

- Content doesn't follow a logical structure
- Content isn't navigable. The user can't easily identify where they are or find content.



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ISSUE 1: How to fix

- Use accessible templates
- Use appropriate level headers, i.e. Heading 1, Heading 2, Heading 3
- Do not use tabs and spaces to create columns or lists. Instead:
 - Insert bulleted or numbered lists
 - Modify the number of columns
- Verify tab order to ensure your content is read in the order you intended

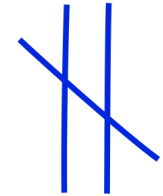
ISSUE 2: Difficult-to-read fonts & spacing

- Some fonts are difficult-to-read for many users
- Avoid script fonts: *Don't try to be fancy with script fonts*
- What year is it even? Leave these fonts in the past:
 - 2000 (Curlz)
 - **1880** (Playbill)
 - 1554 (Old English)
 - 1700 BC (Papyrus)

ISSUE 2: Difficult-to-read fonts & spacing continued

- Justifying text can create uneven text spacing which can be difficult for individuals with dyslexia or visual stress

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Example of "rivers of white" in a text

By Petr Kadlec - Own work, CC BY-SA 4.0,
<https://commons.wikimedia.org/w/index.php?curid=7130453>

ISSUE 2: How to fix

- Use simple, familiar fonts such as **Arial**, **Calibri**, Helvetica Neue, or Verdana
- Use size 12 font or higher
- Keep the number of fonts and font sizes used to a minimum
- Avoid long segments of **bolded** or UPPERCASE text
- Do not use justified text instead:
 - Use left alignment for large blocks of text
 - Center alignment is okay for small blocks of text

ISSUE 3: Color as the only method of conveying information

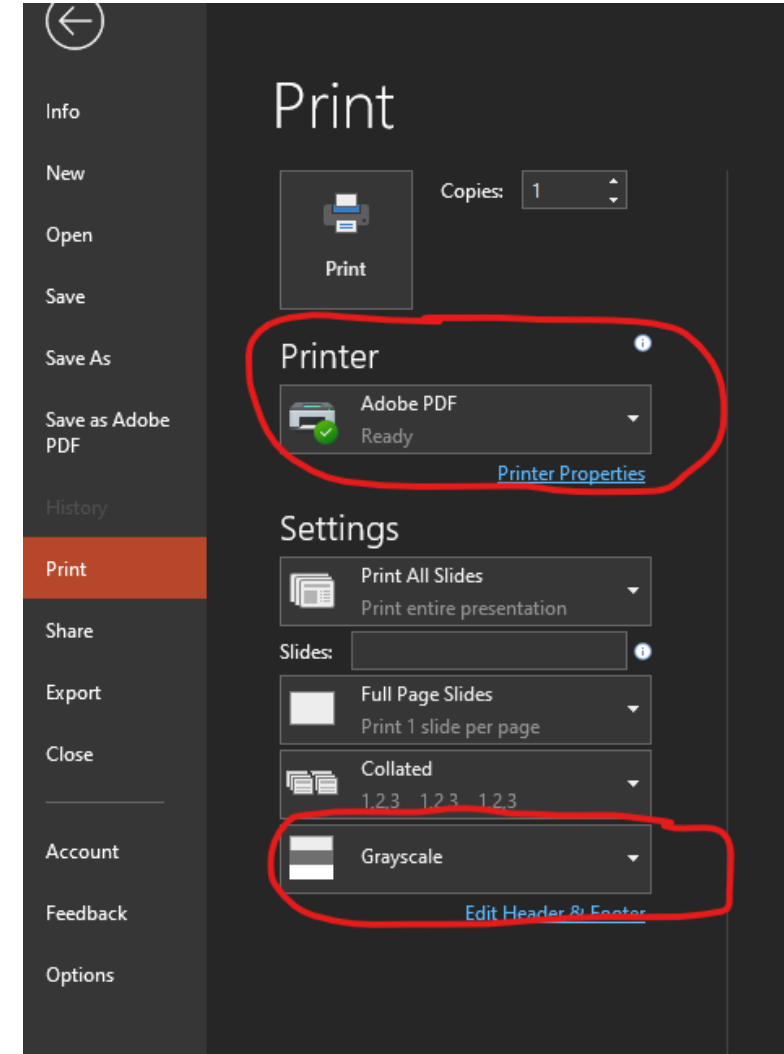
- Not everyone perceives color the same way!
 - 1 in 12 men and 1 in 20 women have some form of colorblindness
 - The ability to perceive color and contrast can decline with age.
 - Cataracts, glaucoma, macular degeneration, Alzheimer's, multiple sclerosis, eye injuries, brain injuries, and certain medications can impact color perception
- Even those w/o color perception differences may not be able to discern meaning from color if the document is printed in grayscale

ISSUE 3: How to fix

- Use more than just color to convey meaning
- Other methods of conveying meaning that can be used on their own or in combination with color
 - **Bolding**
 - *Italicizing*
 - Underlining
 - Adding asterixis**
 - Increasing text size

Use grayscale to do a quick check of color as a means of conveying info

- View your PowerPoint in grayscale
 1. Go to the View tab.
 2. In the Color/Grayscale section, select Grayscale.
- Print to PDF in grayscale
 - In Microsoft products: File > Print > From the Printer drop-down menu, Select Print to PDF > Under Settings, select Grayscale from the Color options drop-down menu



Print to PDF in grayscale

ISSUE 4: Inadequate color contrast

- Is this medium blue text on a dark blue background easy to read?

- No? How about this lime-green text instead? A little better?

- How about this light blue text on the dark blue background? It is definitely the easiest to read, right?

- How about lime-green text on a light blue background? Is that easy to read?

- Is medium blue text any easier to read?

- The dark blue text is by far the easiest to read on this light-blue background.

ISSUE 4: How to fix

- [Follow the Web Content Accessibility Guidelines \(WCAG\)](#) 2 “color contrast” standards
- WCAG2 is a set of international standards for web content accessibility.
 - [WebAIM’s article explaining WCAG2’s color and contrast in layperson’s terms](#)
 - There are 3 levels of WCAG: Level A (lowest), Level AA, & Level AAA (highest)
- WCAG 2.0 Level AA Standards for “color contrast”:
 - 4.5:1 for standard text
 - 3.1 for large text
 - Don’t round up! $4.48 \neq 4.5$

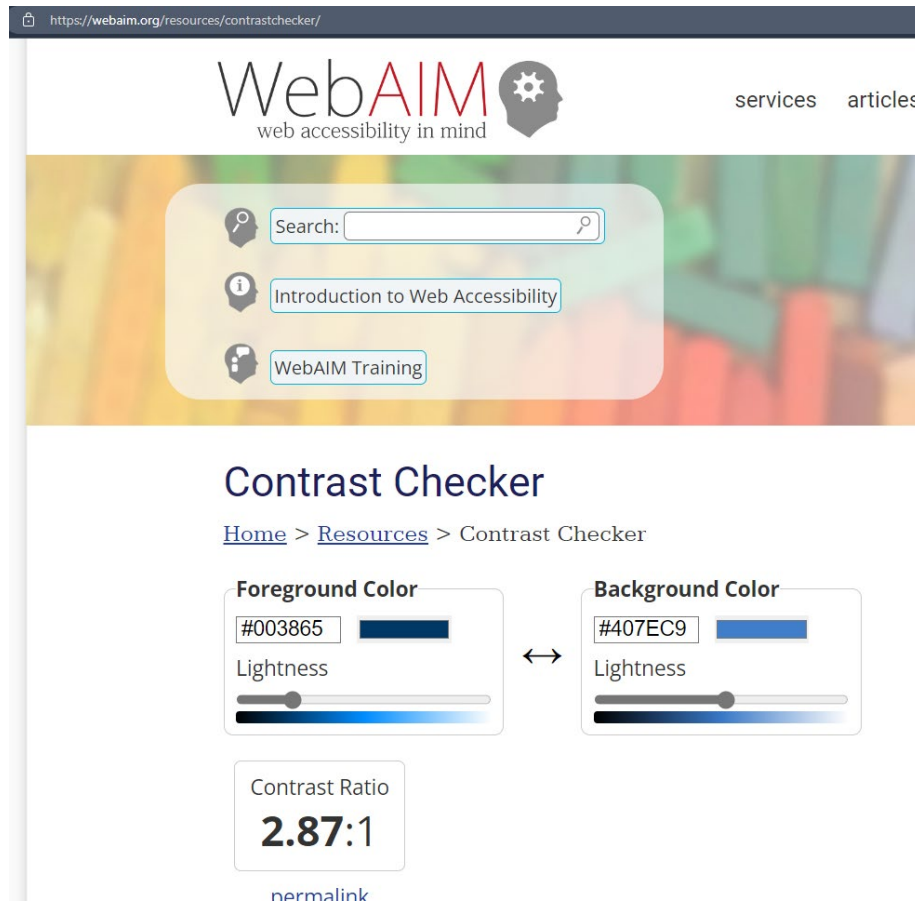
4.5:1

Is the bare minimum

This black text on lime green background has a contrast ratio of 9.18:1.

2 free color contrast checking tools

WebAIM's Contrast Checker



The screenshot shows the WebAIM Contrast Checker website. The header includes the WebAIM logo and navigation links for 'services' and 'articles'. A search bar and three featured links ('Introduction to Web Accessibility' and 'WebAIM Training') are visible. The main section is titled 'Contrast Checker' and shows a breadcrumb trail: 'Home > Resources > Contrast Checker'. The tool interface includes two color selection panels, 'Foreground Color' and 'Background Color', each with a hex input field and a lightness slider. The foreground color is set to #003865 and the background to #407EC9. A double-headed arrow indicates the relationship between the two colors. Below the sliders, the 'Contrast Ratio' is displayed as 2.87:1, with a 'normalink' link underneath.

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

WebAIM
web accessibility in mind

services articles

Search:

Introduction to Web Accessibility

WebAIM Training

Contrast Checker

Home > Resources > Contrast Checker

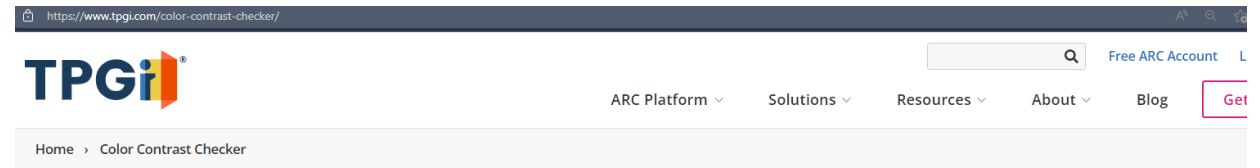
Foreground Color
#003865
Lightness

Background Color
#407EC9
Lightness

Contrast Ratio
2.87:1

[normalink](#)

TBGi's Colour Contrast Analyser



The screenshot shows the TBGi Colour Contrast Analyser website. The header features the TPGi logo, a search bar, and navigation links for 'ARC Platform', 'Solutions', 'Resources', 'About', 'Blog', and a 'Get' button. A breadcrumb trail shows 'Home > Color Contrast Checker'.

https://www.tpgi.com/color-contrast-checker/

TPGi

ARC Platform Solutions Resources About Blog [Get](#)

Home > Color Contrast Checker

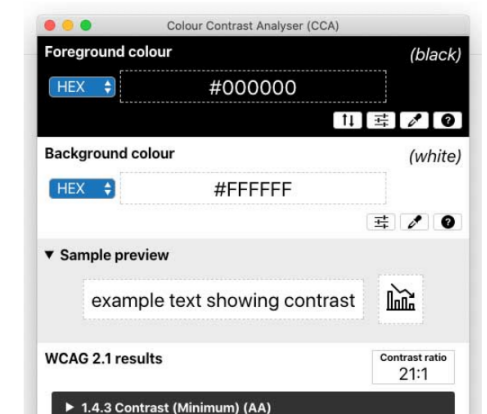
Have a question about the Colour Contrast Analyser or discovered a bug?
[Visit the Colour Contrast Analyser \(CCA\) repository on GitHub.](#)

Colour Contrast Analyser (CCA)

TPGi's free color contrast checker tool that allows you to easily determine the contrast ratio of two colors simply using an eyedrop tool. The CCA enables you to optimize your content—including text and visual elements—for individuals with vision disabilities like color-blindness and low-vision impairments.

Features

- Compliance indicators for Web Content Accessibility Guidelines 2.1 (WCAG 2.1)
- Multiple ways to select colors: you can manually enter CSS color formats, use an RGB Slider, or opt for the color picker tool
- Color Blindness Simulator



The screenshot shows the Colour Contrast Analyser (CCA) tool interface. It features two color selection sections: 'Foreground colour' (black) and 'Background colour' (white), each with a hex input field and a color picker. A 'Sample preview' section shows 'example text showing contrast'. The 'WCAG 2.1 results' section displays a 'Contrast ratio' of 21:1 and a '1.4.3 Contrast (Minimum) (AA)' indicator.

Colour Contrast Analyser (CCA)

Foreground colour (black)
HEX #000000

Background colour (white)
HEX #FFFFFF

Sample preview
example text showing contrast

WCAG 2.1 results
Contrast ratio 21:1
▶ 1.4.3 Contrast (Minimum) (AA)

ISSUE 5: Non-text elements without text alternatives

- Images, pictures, icons, graphics, and illustrations without alt text
- Charts and graphs without a text description of their content
- Audio recordings without transcripts
- Videos without captions
- Videos without properly described visual content (audio description)

ISSUE 5: How to fix

- PLEASE NOTE: Alt text is an art, deserving of its own webinar. There are many incredible resources online.
- Add a text alternative for any non-text element
- Images should have alt text
 - Alt text is a written description of that element's content. It should be based on the context the content is being presented in.
- Audio recordings should have transcripts
- Add captions and if necessary, audio descriptions to your videos

ISSUE 6 & How to fix: Language that is too complex

- Keep your audience in mind.
- Avoid technical jargon.
- Use plain, simple language
- Be concise. Keep sentences short.
- When writing for the general public, aim for Flesh-Kincaid Grade Level 8
 - [Get your document's readability and level statistics - Microsoft Support](#)

RESOURCES

- [Office of Accessibility / Minnesota IT Services \(mn.gov\)](#)
- [Web and Document Accessibility Training - North Dakota Assistive \(ndassistive.org\)](#)
- [Digital Accessibility Courses - AT3 Center](#)
- [WebAIM: Web Accessibility In Mind](#)
- [Accessibility Principles | Web Accessibility Initiative \(WAI\) | W3C](#)

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