SKILLSCOMMONS ACCESSIBILITY CHECKPOINTS

METHODS FOR EVALUATING THE ACCESSIBILITY OF **HTML FILES/DOCUMENTS** (ASSISTIVE TECHNOLOGIES)

SKILLS COMMONS
open for learning

Methodology

- Designed by
  - CUDA and CSU-MERLOT
  - In partnership with CAST
- Applied by
  - The California State University on the California Open Online Library Project (www.cool4ed.org)

Assistive Technologies Evaluation

Addresses specialized tools such as Kurzweil and NVDA which are not typically available to the general public. Assistive Technologies includes but is not limited to the following:

- Accessibility features of desktop operating systems (e.g. high-contrast display themes, settings from the Keyboard and Mouse control panels)
- Accessibility-related software included with desktop operating systems (e.g. VoiceOver, Microsoft Narrator)
- Third-party accessibility software and hardware:
- Screen readers (e.g. JAWS, Window Eyes)
- Magnification software (e.g. ZoomText Magnifier/Reader, MAGIC Pro with Speech)
- Reading software for users with learning disabilities (e.g. Read and Write Gold, Kurzweil 3000)
- Refreshable Braille displays

Accessibility Checkpoints

1. Accessibility Documentation
2. Text Access
3. Text Adjustment
4. Reading Layout
5. Reading Order
6. Structural Markup/Navigation
7. Tables
8. Hyperlinks
9. Color and Contrast
10. Language
11. Images
12. Multimedia
13. Flickering
14. STEM
15. Interactive Elements
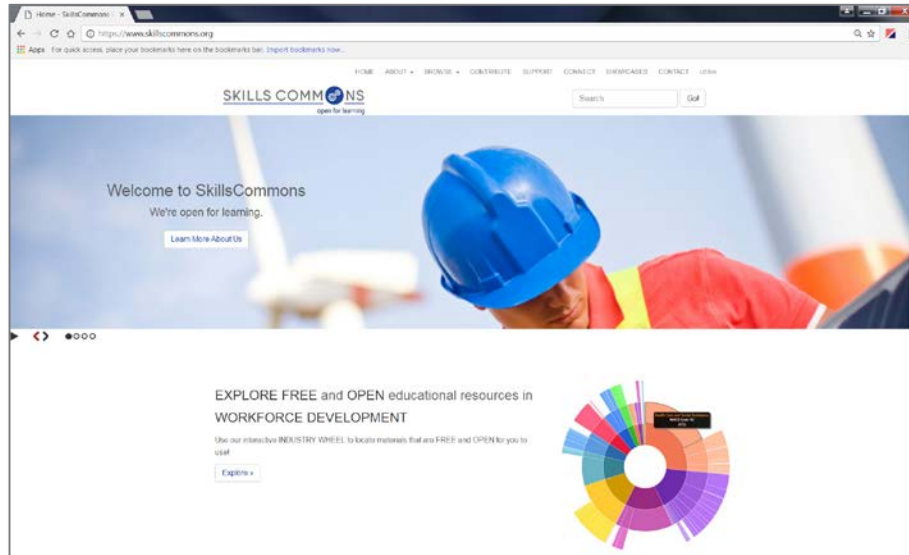
Accessing HTML files/documents

STEPS:
1. Visit SkillsCommons site at www.skillscommons.org
2. Search for and download desired HTML files/documents
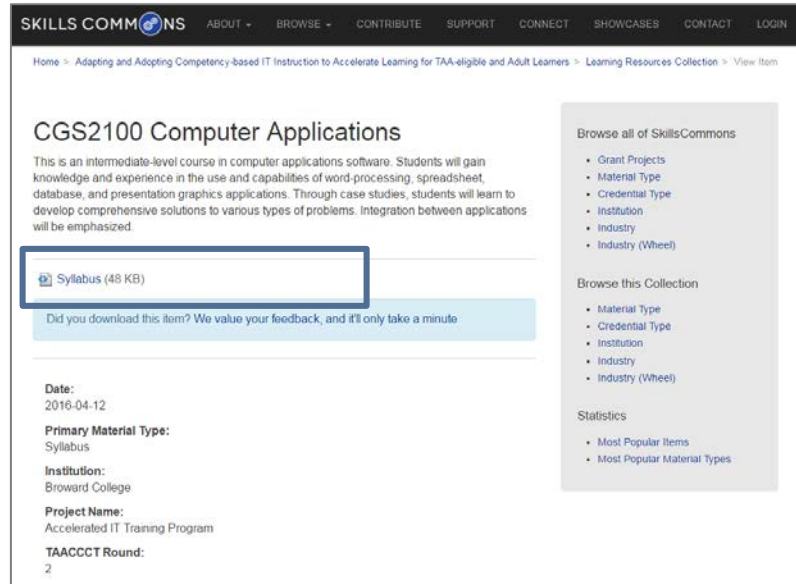
Accessing HTML files/documents

STEPS:

1. Visit SkillsCommons site at www.skillscommons.org

Accessing HTML files/documents

STEPS:

2. Search for and download desired HTML files/documents

Click on HTML file/document to download.

Using the Skills Commons Accessibility Checkpoints

All information obtained from HTML file/document evaluation will be entered into the the SkillsCommons Accessibility Checkpoints document:

3. **Text Adjustment**   PASS/FAIL: _____   Ranking: _____

A. Text is compatible with assistive technology.
B. The resource allows the user to adjust the font size and font/background color (or is rendered by an application such as a browser, media player, or reader) that offers this functionality).

Additional Information: Please describe the technologies (hardware and software versions) and methodologies you used to evaluate the accessibility of the resource for this feature.

Enter info such as the pages you evaluated here as well.

Pass, Fail, or N/A?

- Evaluate material based on the amount of material included in the checklist.
- If there is no related materials, mark N/A for that checkpoint. The only exception are <u>Acc Documentation</u> and <u>Flickering</u>.

No Flickering = Pass

No Acc Doc = Fail
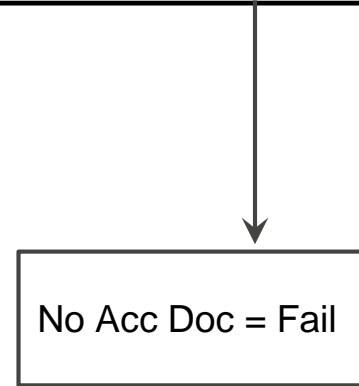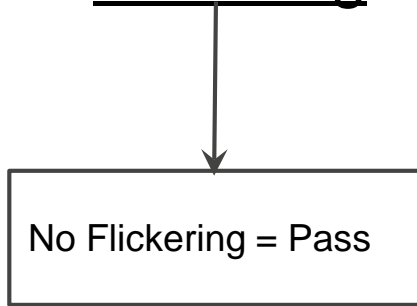
Ratings

- Ratings are on a scale of 1-10

Fail   **7**   Pass

1   5   10
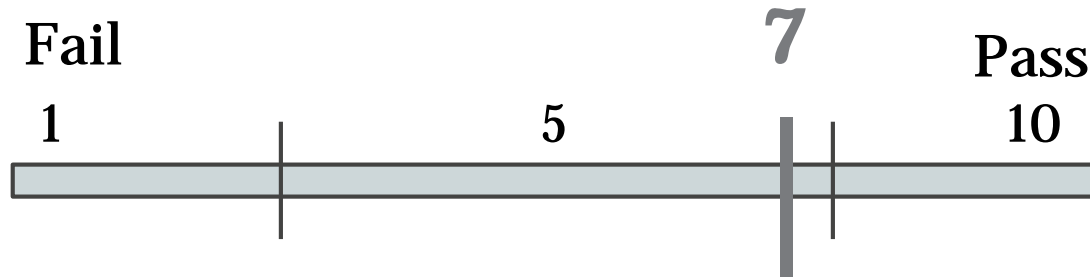
- Failure to meet a checkpoint (Fail) should not be rated above a 7
- Meeting a checkpoint (Pass) should not be rated below a 7

Evaluating Accessibility of HTML file/documents

HTML Evaluation Requirements

OS
- Windows OS (XP or above)

Require Downloading
- NVDA (Download)
- Google Chrome (Download)
- Care your eyes (Google Chrome extensions) (Download)
- Color Contrast Analyzer- CCA (Download)

NVDA

Keep in mind when using NVDA:

- Make sure that NumLock is off.

- Try using only the keyboard.

Note

The **NVDA** key is set to the |Insert| key by default, but it can be changed to the |Caps lock| key when installing NVDA for the first time. If you want to change your NVDA key preference later, press |Ctrl| + |NVDA| + |K|.

1. Accessibility Documentation

For the HTML file/documents' organizations, find the following:
- ☑ URL to formal Accessibility Policy
- ☑ URL to accessibility statements
- ☑ URL to Accessibility Evaluation Report

2. Text Access

☑ The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality

Text Access

STEPS:
1. Download NVDA
2. Open the HTML file/document with Google Chrome
3. Activate NVDA
   (Ctrl + Alt + N)
4.   Use NVDA to read from top of the page (Numpad +)
       Use Ctrl to stop

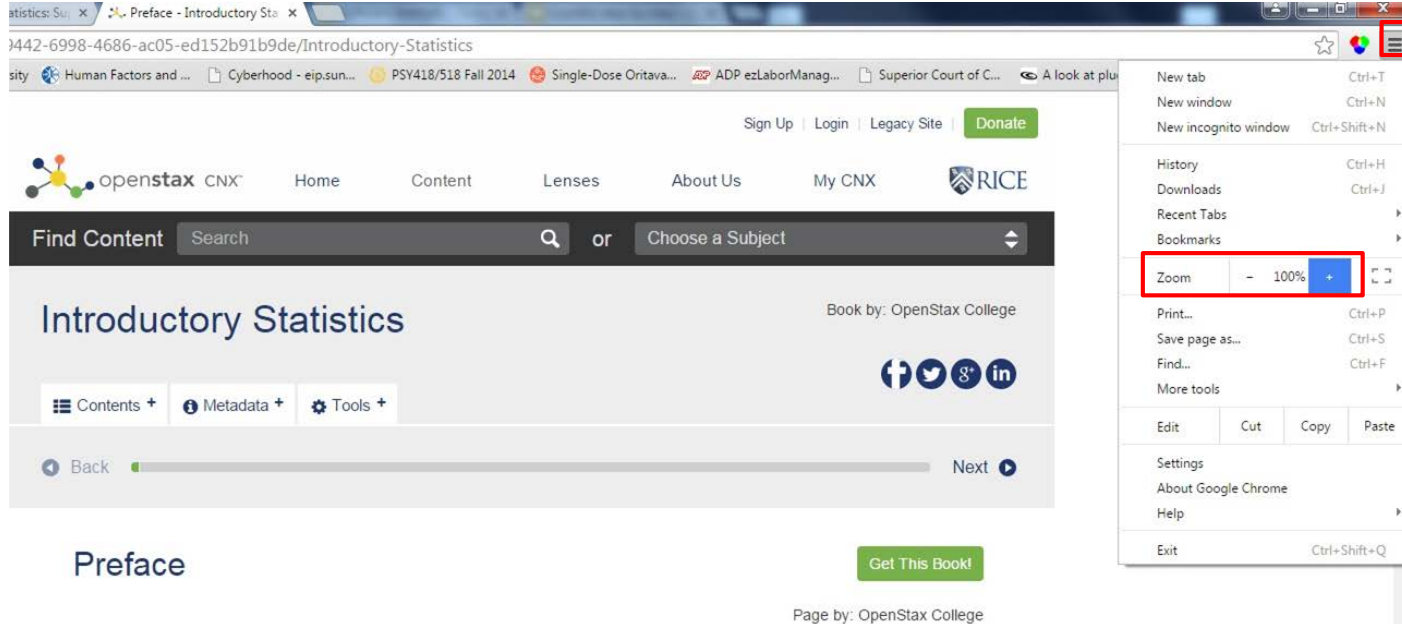Note: make sure your speaker is on!

3. Text Adjustment (Size)

☑ The text allows the user to adjust the font size

STEPS:
1. Open the HTML file/document with Google Chrome
2. Click on Menu > Zoom "+" for increase, "-" for decrease

3. Text Adjustment (size)

1. Open the HTML file/document with Google Chrome
2. Click on Menu > Zoom "+" for increase, "-" for decrease

3. Text Adjustment (Color)

☑ The text allows the user to adjust the font/background color

STEPS:
1. Download "Care your Eyes"
2. Open the HTML file/document with Google Chrome and click on the Care your eyes icon
3. Select Night Mode > See if the font/background color changes

3. Text Adjustment (color)

1. Download "Care your Eyes" @
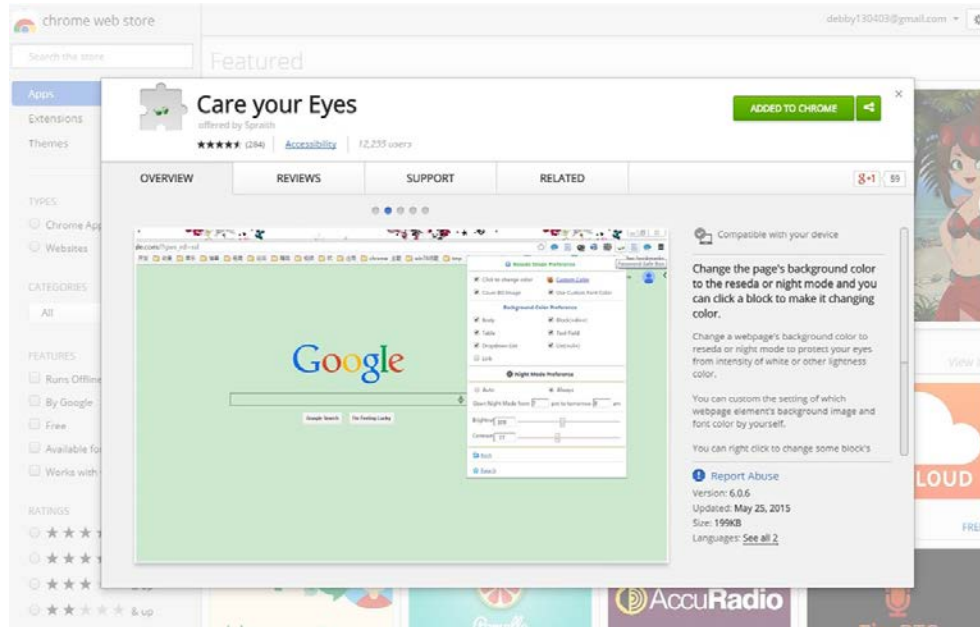   https://chrome.google.com/webstore/detail/care-your-eyes/fidmpnedniahpnkeomejhnepmbdamlhl?hl=en

3. Text Adjustment (color)

2. Open the HTML file/document with Google Chrome and click on the Care your eyes icon > Select Night Mode > See if the font/background color changes
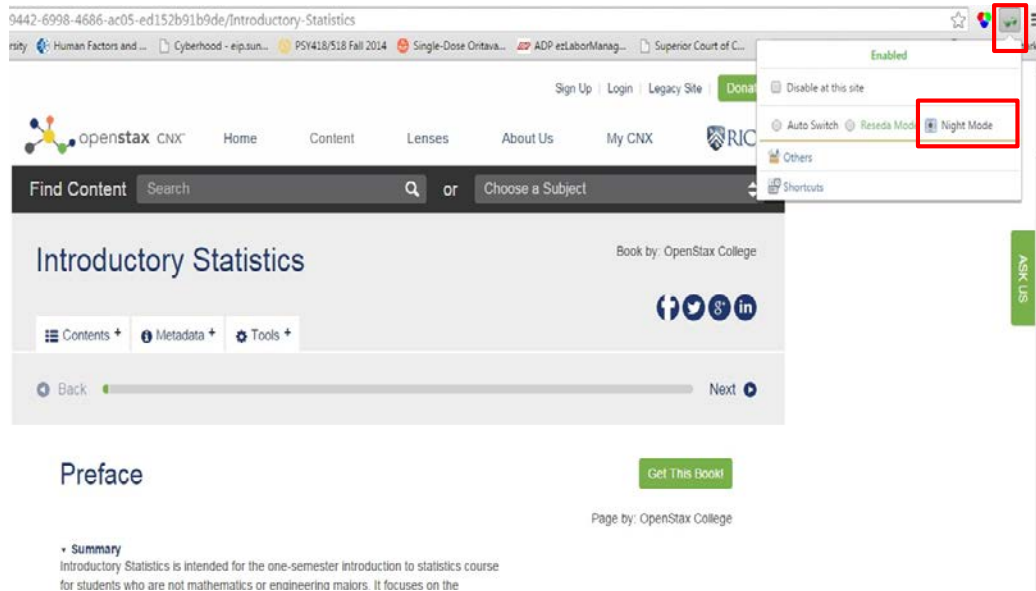
3. Text Adjustment (color)

Example: Accessible website for font/background
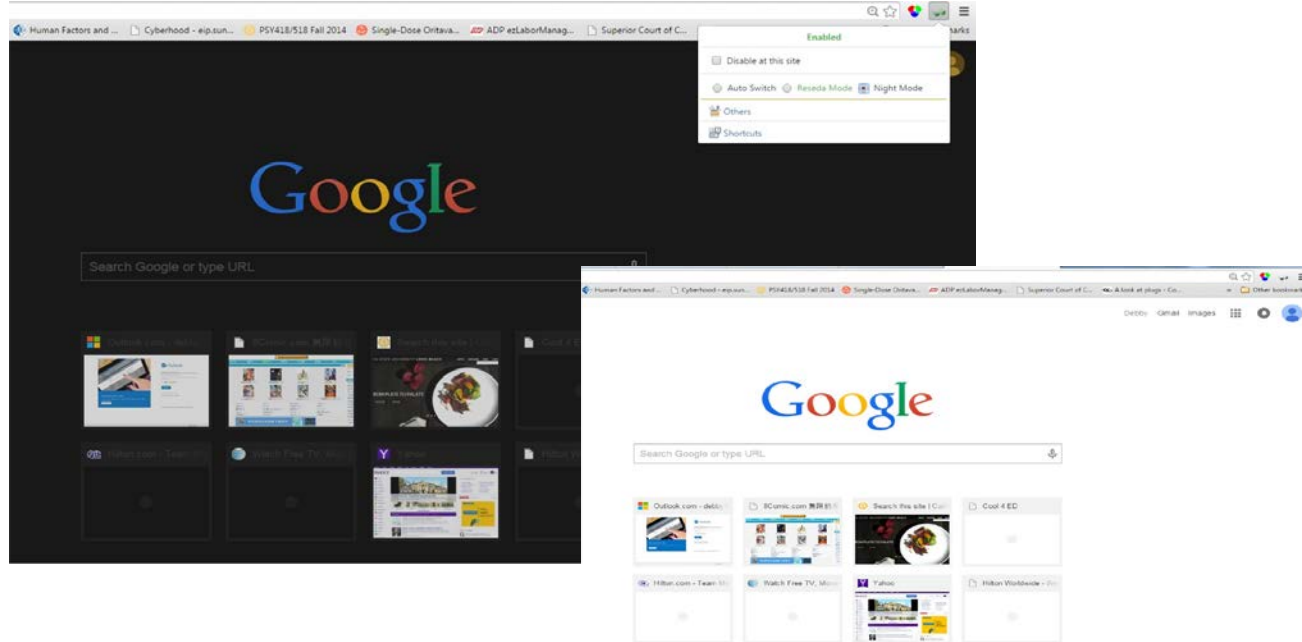
4. Reading Layout (Reflow)

☑ Text of the digital resource is compatible with assistive technology that allows the user to reflow the text by specifying the margins and line spacing

STEPS:
1. Open the HTML file/document with Google Chrome
2. Click on Menu > Zoom "+" for increase, "-" for decrease
3. Check if the text reflows

4. Reading Layout (Page # match)

☑ If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material

***Compare pages with printed material (PDF if no hard copy)
***If printed material not available, mark N/A

4. Reading Layout

Do the page numbers correspond to the printed text?

STEPS:
1. Randomly select TEN pages from your online text from each third of the HTML file/document (i.e., middle, beginning, and end. 30 pages total)
2. Find corresponding pages in printed HTML file/document or in PDF version
3. Determine if page numbers are the same in both versions

4. Reading Layout

HTML HTML file/document – Page 44

Printed Book – Page 14

5. Reading Order

☑ Reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology

STEPS:
1. Open the HTML file/document with Google Chrome
2. Locate 5 pages (include page # in the reports) that contains a more complicated layout
3. Use the NVDA to read from top of the page (Numpad +) and check if the reading order is logical

6. Structural Markup / Navigation

☑ The text of the digital resource includes markup (e.g. tags or styles) that allows for navigation by key structural elements (chapters, headings, pages) using assistive technology

STEPS:
1. Open the HTML file/document with G and activate NVDA
1. Use heading quick keys (H & 1-6) to check for all heading levels

Headings and Lists

Command	Description
H	Headings Quick Key
1-6	Headings level 1-6
L	List Quick Key
I	List Item Quick Key

Structural Markup / Navigation

☑ The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology

STEPS:
1. Open the HTML file/document with Goo[Headings and Lists]
   and activate NVDA
1. Locate a list
2. Use List quick keys (L) to check
   if the program can recognize it as
   a list.
Repeat the steps for 10 lists*

Headings and Lists

Command	Description
H	Headings Quick Key
1-6	Headings level 1-6
L	List Quick Key
I	List Item Quick Key

Structural Markup / Navigation

☑ If the text of the digital resource is delivered within an ebook reader application, a method is provided that allows users to bypass the reader interface and move directly to the text content that is compatible with assistive technology

Not using reader application, mark N/A on the reports

7. Tables

☑ Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology

STEPS:

1. Open the HTML file/document with Goo~~Tables~~ and activate NVDA
1. Locate a table
2. Use Table quick keys (T) to check if the program can recognize it as a table, then use other quick keys to check for all cells.

Repeat the steps for 10 tables*

Command	Description
T	Table Quick Key
Ctrl + Alt + →	Cell to Right
Ctrl + Alt + ←	Cell to Left
Ctrl + Alt + ↓	Cell Below
Ctrl + Alt + ↑	Cell Above

8. Hyperlinks

☑ Functionality: Links (e.g. website or email addresses) within the text of the digital resource are rendered as active hyperlinks in a manner that allows them to be detected and activated with assistive technology.

☑ Descriptive: The link is descriptive enough for the users to know where the link will take them. If the link appears as an URL = fail this sub-category.

   E.g. CSULB homepage   O
        www.csulb.edu   X

☑ Checking for live hyperlinks (in-HTML file/document links are live too)

Hyperlinks

1. Open the HTML file/document with Google Chrome and activate NVDA
2. Locate a few hyperlinks
3. Use Links quick keys (TAB or Shift TAB) to check if the program can recognize it as a link, then press enter to see if the link function correctly (take you to the right location)
4. Tab through a total of 50 links from different section of the HTML file/document to check for both <u>functionality</u> and <u>descriptive</u> name.

**If nothing happens then the link doesn't work

9. Color & Contrast (Color Redundancy)

☑ Color redundancy (information is not conveyed by color alone) needs to be checked manually

n changes in classrooms has several other effects. One, for example, is that it can tempt teachers to think that what is taught is equivalent to what is learned—even
e different. If I assign a reading to my students about the Russian Revolution, it would be nice to assume not only that they have read the same words, but also lear
read and learned all of what I assigned; others may have read everything but misunderstood the material or remembered only some of it; and still others, unfortunat
firm this picture, if asked confidentially. There are ways, of course, to deal helpfully with such diversity of outcomes; for suggestions, see especially Section 10.1 l
ictional strategies I adopt, they cannot include assuming that what I teach is the same as what students understand or retain of what I teach.

as dependent on sequencing and readiness

veen teaching and learning creates a secondary issue for teachers, that of educational **readiness**. Traditionally the concept referred to students' preparedness to c
o start school, for example, if he or she was in good health, showed moderately good social skills, could take care of personal physical needs (like eating lunch or
n Table 2.6 shows a similar set of criteria for determining whether a child is "ready" to learn to read (Copple & Bredekamp, 2006). At older ages (such as in high
To take a course in physics, for example, a student must first have certain prerequisite experiences, such as studying advanced algebra or calculus. To begin work
to mention also studying educational psychology!).

E.g.
Links are presented with color (blue) and underline.

9. Color & Contrast (Contrast Ratio)

☑ The visual presentation of text and images of text in the digital resource has a contrast ratio of at least 4.5:1 (AA)

☑ Large text (18 point +) has a contrast ratio of at least 3:1 (AA)

Normal text

Large text

Color & Contrast (Contrast Ratio)

Colour Contrast Analyzer (CCA)

1. <u>Download Colour Contrast Analyzer Tool</u>
2. Open the document you want to evaluate
3. Open the application
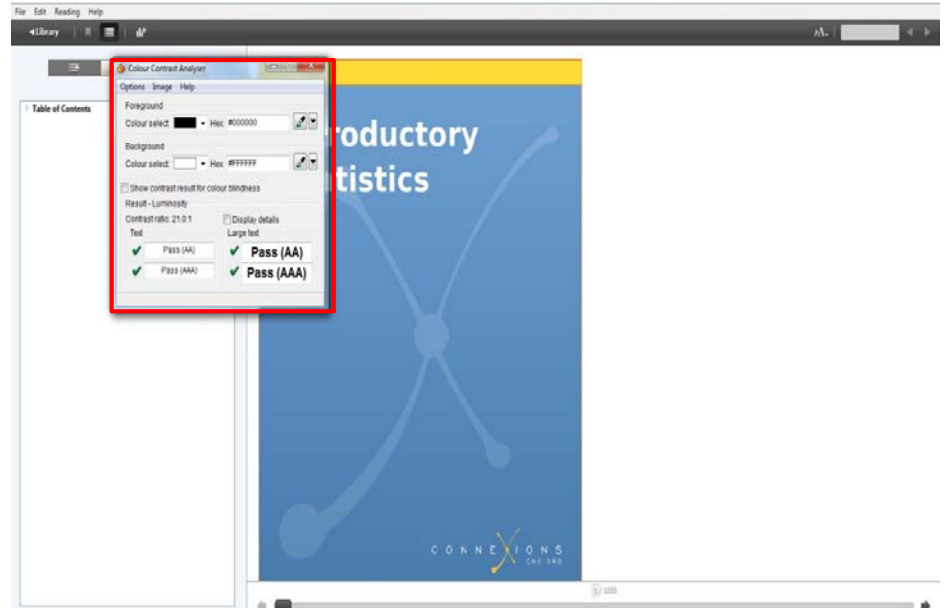
Color & Contrast (Contrast Ratio)

4. Make sure you are in the **Result -- Luminosity** mode.

5. Click the **Foreground eye dropper** tool, hover over and click the foreground color to select it.
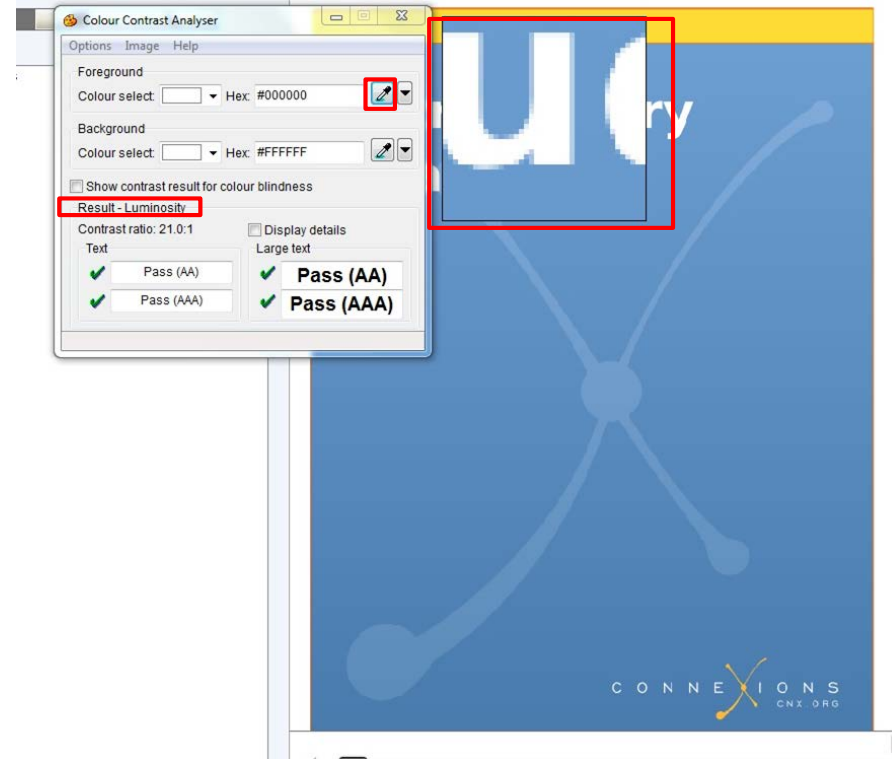
Color & Contrast (Contrast Ratio)

6. Click the **Background eye dropper** tool, hover over and click the background color.

7. Determine if the text is greater than 18 points (e.g. Header).

   Small text: Check under "Text" (AA)

   Large text (18+): Check under "Large text" (AA)
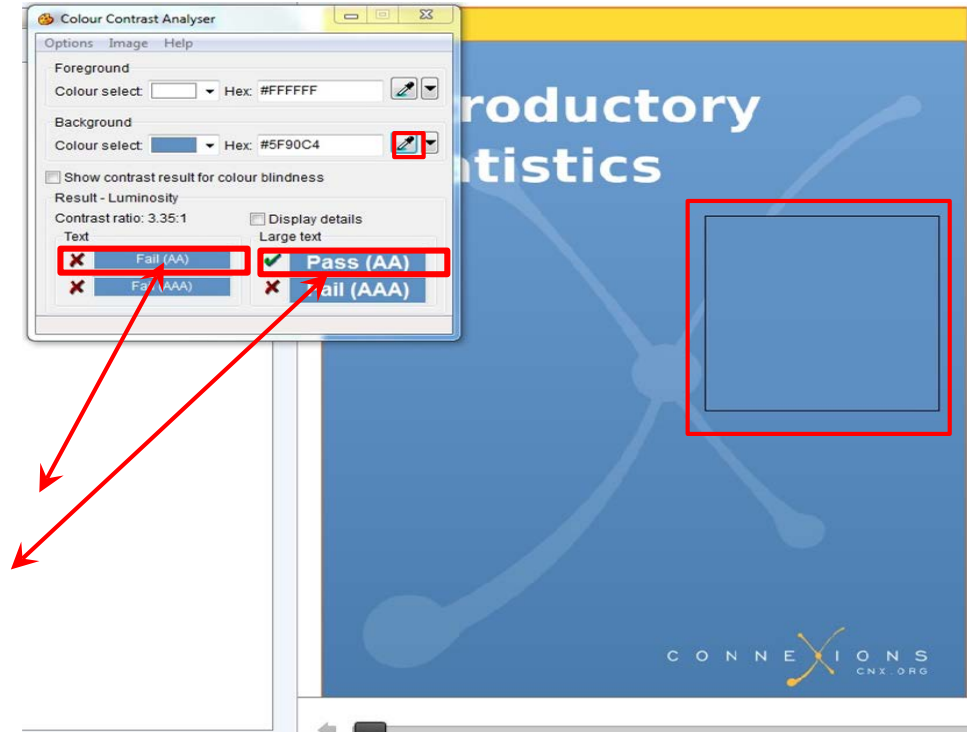
10. Language

☑ The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology

☑ If the digital resource includes passages in a foreign language, these passages include markup that declares the language in a manner that is compatible with assistive technology

10. Language

STEPS:
1. Open the HTML file/document you want to evaluate in your browser

2. Click on Browser Menu > more tools > view source

   Or Ctrl + U
1. Press on Ctrl + F to search

2. Type in <u>lang="</u>

3. Look for lang="<u>language code</u>"
   ex: lang="en"

10. Language

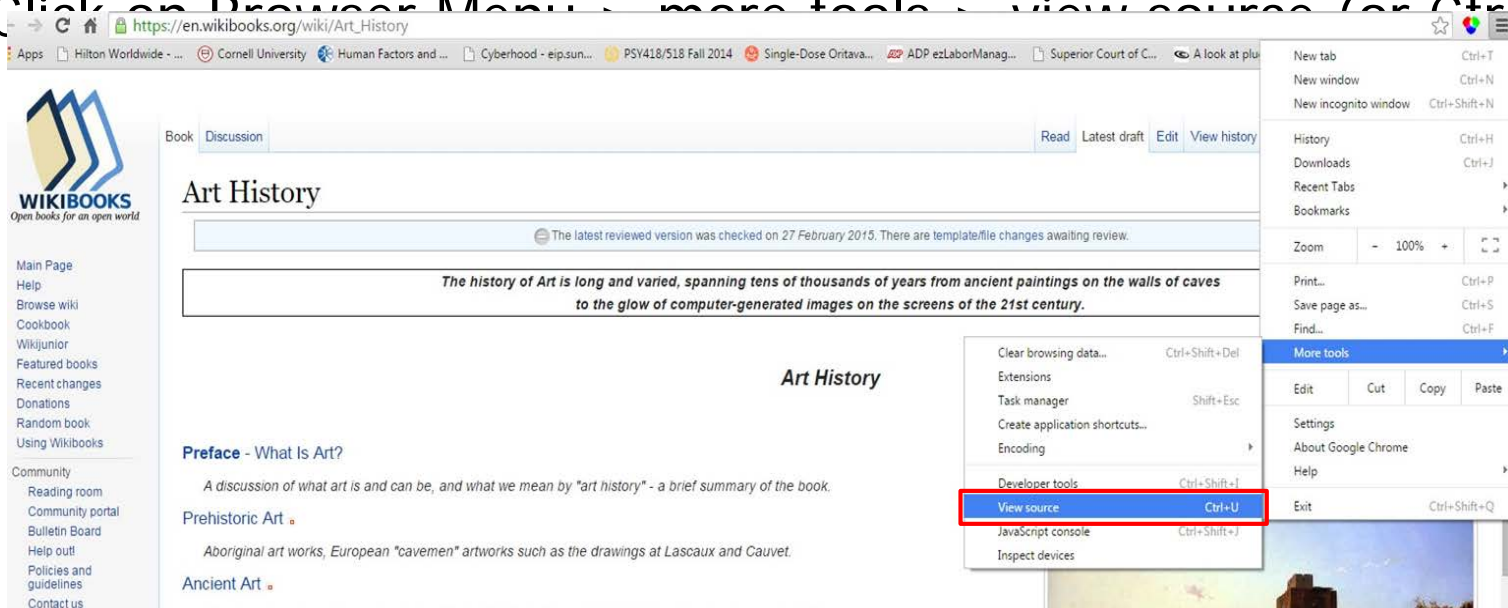1. Open the HTML file/document you want to evaluate in your browser

2. Click on Browser Menu > more tools > view source (or Ctrl+U)

10. Language

4. Press on Ctrl + F to search

5. Type in <u>lang="</u>

6. Look for lang="<u>language code</u>"
     ex: lang="en"

11. Images

☑ Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality)

☑ Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology

☑ Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology

Images

STEPS:
1. Open the HTML file/document with Google Chrome and activate NVDA
2. Locate an image
3. Use Image quick key (G) or Link quick key (TAB) to check if the program recognize it as an image or link.
4. Check if the image have alternative text

Practice and examples

Images (Additional Manual Check)

◉ Check manually: Make sure the descriptions for the images are descriptive enough for both non-decorative images and complex images.

◉ <u>Rule of thumb</u>: if the image cannot be described in one sentence, it's complex!

12. Multimedia

☑ A synchronized text track (e.g., open or closed captions) is provided with all video content

☑ A transcript is provided with all audio content

STEPS:

1. Search webpages for multimedia content
2. Search for synchronized text tracks or transcripts

12. Multimedia

☑ Audio/video content is delivered via a media player that is compatible with assistive technology

Not using additional assistive tech to open audio/video content, mark N/A in all reports for this sub-category.

12. Multimedia (Synchronized Text)

1. Find multimedia
2. Search for availability of a text track (e.g., CC)

12. Multimedia (Transcript)

1. Find multimedia
2. Search for availability of a transcript

12. Multimedia (Transcript)

Why look at art? This was the question we posed to several of our colleagues at a conference for museum professionals. Special thanks to Laura Mann, Anna Velez, an anonymous professional, and David Torgersen whose voices and insights are included here.

⚙ Options ▾   ↪ Share ▾   ℹ Info

0:00 [MUSIC PLAYING]
0:05 SPEAKER 1: I think it's important
0:07 that people look at art because we live in a visual world.
0:11 And understanding, and looking at,
0:14 and thinking about the way images
0:16 communicate in all kinds of ways is important to being alive
0:21 today.
0:22 SPEAKER 2: If one has heightened visual acumen, which
0:26 you get from spending time looking at things, whether it's

13. Flickering

☑   Resources should not contain anything that flashes more than <u>three times</u> in any <u>one-second period</u>

Note: No examples have been found for this format

If there is no flickering = Pass this checkpoint

14. STEM

STEM: Science, Technology, Engineering, and Math

- ☑ STEM content is marked up in a manner that is compatible with assistive technology
- ☑ The resource conveys both the notation (presentation) and meaning (semantics) of the STEM content
- ☑ Including but not limited to:
  - Figures
  - Graphs
  - Tables
  - Equations

13. STEM

STEPS:
1. Open up the HTML file/document with Google Chrome
2. Locate a STEM content
3. Select the sentence right before the content
4. Use NVDA + ↓ to start reading at current location
5. Check if the reader reads the content correctly

Reading Text

Command	Description
← or Numpad 1	Say Prior Character
→ or Numpad 3	Say Next Character
Numpad 2	Say Current Character
Numpad 5	Say Word
Numpad 5 twice quickly	Spell Word
Ctrl + ← or Numpad 4	Say Prior Word
Ctrl + → or Numpad 6	Say Next Word
↑ or Numpad 7	Say Prior Line
↓ or Numpad 9	Say Next Line
NVDA + ↑ or Numpad 8	Say Current Line
NVDA + ↑ twice quickly	Spell Current Line
NVDA + ↓ or Numpad +	Read all starting at current position
Shift + Numpad 7	Top line
Shift + Numpad 9	Bottom Line
Shift + Numpad 1	Start of Line
Shift + Numpad 3	End of Line

STEM

If the image itself does not contain an Alt tag but the content/text around it does have a notation (presentation) and meaning (semantics) of the STEM content with good description then we may PASS it with a note included.

Figure 1.15 Biologists may choose to study *Escherichia coli* (*E. coli*), a bacterium that is a normal resident of our digestive tracts but which is also sometimes responsible for disease outbreaks. In this micrograph, the bacterium is visualized using a scanning electron microscope and digital colorization. (credit: Eric Erbe; digital colorization by Christopher Pooley, USDA-ARS)

STEM

Successive Ionization Energies (kJ/mol)

	Na	Mg	Al	Si	P	S	Cl	Ar
IE_1	496	738	578	787	1012	1000	1251	1520
IE_2	4562	1451	1817	1577	1903	2251	2297	2665
IE_3	6912	7733	2745	3231	2912	3361	3822	3931
IE_4	9543	10540	11575	4356	4956	4564	5158	5770
IE_5	13353	13630	14830	16091	6273	7013	6542	7238
IE_6	16610	17995	18376	19784	22233	8495	9458	8781
IE_7	20114	21703	23293	23783	25397	27106	11020	11995

Table 4.1

Figure 6.2

Labels, descriptions, or tags should be descriptive

STEM

◉ Amount of Material to Be Evaluated

For BOTH Markup and Notation, find:

10 figures
10 graphs
10 equations
10 tables

***As Applicable:
If there is no STEM content, mark N/A on the report***

15. Interactive Elements

☑   Keyboard
    Interactive elements allow for keyboard-only operation
    WITH and WITHOUT assistive tech

STEPS:
1. Use the TAB key to navigate the menu
2. Items that are selected will have a box around the link
3. Use the ENTER key to select a link or other item

***As Applicable:
    If there is no Interactive Elements, mark N/A on the report***

Interactive Elements

☑ Markup
Each interactive element conveys information to assistive technology regarding the element's
☑name
☑type
☑status

***As Applicable:
If there is no Interactive Elements, mark N/A on the report***

Interactive Elements

☑ Text prompts
   The following are conveyed with assistive technology:
   ☑Instructions
   ☑Prompts
   ☑Error messages

***As Applicable:
   If there is no Interactive Elements, mark N/A on the report***

Creative Commons Attribution License