



California Open Online Library for Education & Accessibility

COOL4Ed (the California Open Online Library for Education) was created so that faculty can easily find, adopt, utilize, review and/or modify free and open etextbooks for little or no cost. The COOL4Ed accessibility open textbook evaluations can inform faculty, staff, and students how the free and open etextbooks meet 15 accessibility “checkpoints” that could impact the learning of learners with a range of disabilities.

SUMMARY OF ACCESSIBILITY EVALUATION:

Textbook: SmartHistory (Khan Academy)
Format of Textbook: HTML

| | |
|--|---------------------------------|
| Assistive Technology (AT) Evaluation Score: Overall | 8.1 (Maximum score = 10) |
| <p>Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, see list below, are typically not used or available by the general public into the accessibility evaluation process.</p> <ul style="list-style-type: none"> • 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 | |
| Non- Assistive Technology (NAT) Evaluation Score: Overall | 7.8 (Maximum score =10) |
| <p>Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.</p> | |



COOL4Ed Accessibility Evaluation Methods:

The California State University [Accessible Technology Initiative](#) and [MERLOT](#) (Multimedia Educational Resources for Learning and Online Teaching) developed the rubric or “checkpoints” for the accessibility evaluation. [CAST](#), a nationally recognized organization with expertise in accessibility and UDL, reviewed and affirmed the appropriateness and value of the accessibility evaluation rubric and contributed the references and support resources to help people learn how best to design, evaluate, and remediate the learning materials to maximize the accessibility of the learning resources for all. The “checkpoints” have been built upon the Section 508 technical standards and has been organized and tailored to the typical characteristics of digital resources used in higher education courses.

The accessibility evaluations were performed by the [Center for Usability in Design and Accessibility](#) at California State University, Long Beach; faculty and graduate students with expertise in human factors, usability, and accessibility performed the evaluations of over 150 free and open etextbooks. COOL4ed.org has published the accessibility evaluation rubric and provides a detailed description of the methodology used to evaluate the accessibility of the etextbooks in COOL4ed.

LOOKING FOR DETAILED ACCESSIBILITY REPORTS?

[See Detailed Accessibility Evaluation Report using Assistive Technologies](#)

[See Detailed Accessibility Evaluation Report using Non-Assistive Technologies](#)



DETAILED ACCESSIBILITY EVALUATION REPORT using Assistive Technologies

Assistive Technologies (AT) Evaluations applies specialized tools and software in the accessibility evaluation process. These specialized assistive technologies, such as Kurzweil and NVDA, are typically not used or available by the general public into the accessibility evaluation process.

1. Accessibility Documentation

| | |
|---|--------------------------------------|
| A. The organization providing the online materials has a formal accessibility policy. | Fail |
| Additional Information: | Google Chrome. URL not found. |
| B. The organization providing the online materials has an accessibility statement. | Fail |
| Additional Information: | Google Chrome. URL not found. |
| C. An Accessibility Evaluation Report is available from an external organization. | Fail |
| Additional Information: | Google Chrome. URL not found. |

2. Text Access

| | |
|---|---|
| A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality. | Pass |
| Additional Information: | Google Chrome and NVDA. Checked "Art history basics" home page, "First things first", "A brief history of Western culture", "Common questions about dates", and "Tools for understanding art: Analyzing a work of art". All pages were text to speech compatible. However, the entire first half of "Tools for understanding dates" (the content before the "Writing Tips" below "Documentation" was skipped over. |

3. Text Adjustment

| | |
|--|-------------|
| A. Text is compatible with assistive technology. | Pass |
|--|-------------|



| | |
|--|--|
| Additional Information: | Google Chrome. Checked "Art history basics" home page, "First things first", "A brief history of Western culture", and "Common questions about dates". All pages were text adjustment compatible. |
| 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). | Pass |
| Additional Information: | Google Chrome and Care for Eyes. Checked "Art history basics" home page, "First things first", "A brief history of Western culture", and "Common questions about dates". All colors were changed to their inverse when night mode was enabled on Care for Eyes in Google Chrome. The Khan Academy logo at the bottom right of the home page "Art history basics" was unaffected (the logo on the top-left of the page was affected, meaning it must not be treated as an image). On the "Common questions about dates" page, the first image ("Today is:..") is unaffected, which is normal, but contains text and may be an issue for some. |

4. Reading Layout

| | |
|--|--|
| A. 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 (or is rendered by an application such as a browser, media player, or reader that offers this functionality). | Pass |
| Additional Information: | Google Chrome. Checked "Art history basics" home page, "First things first", "A brief history of Western culture", and "Common questions about dates". On "First things first" at 250% and beyond zoom, the red bar on the left of each page is engulfed at least partially by the body text to its right. At 175% zoom on any page, the "About" and "Donate" links at the top of each page disappear and only enter a drop- |



| | |
|---|---|
| | <p>down menu once you enter 200% zoom. On "A brief history of Western culture", "Common questions about dates", and "A brief history of religion in art" (and every page with a navigation pane on the left, as it seems) at 250% zoom and above, the red bar on the right with a navigation menu disappears (and cannot be found).</p> |
| <p>B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Google Chrome. No printed materials found.</p> |

5. Reading Order

| | |
|--|---|
| <p>A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Google Chrome and NVDA. Checked "Art history basics" home page, "First things first", "Cave painting, contemporary art and everything in between", "A brief history of Western culture", and "Common questions about dates". All pages were read in a logical reading order.</p> |

6. Structural Markup/Navigation

| | |
|---|--|
| <p>A. 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 (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Google Chrome and NVDA. Checked "A brief history of Western culture". Using the NVDA shortcut keys to navigate through headers, I was unable to find any markups for navigation text. However, when the</p> |



| | |
|--|--|
| | <p>page is read, some headers are preceded by NVDA with things like "heading level one" ("First things first") and "heading level three" ("Prehistoric (before c. 3000 B.C.E.)). The markups are read, but the NVDA controls used cannot recognize the markups.</p> |
| <p>B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>14/16 lists were navigatable. Google Chrome and NVDA. Checked "Art History Basics: Tools for understanding art - Analyzing a work of art" and "First things first - Cave painting, contemporary art and everything in between". In "Analyzing a work of art", pressing the list location shortcut "l" did not lead me to either the numbered list nor the bulleted list at the top of the page. Rather, NVDA went straight to a link ("Harvard College Writing Center's Strategies for Essay Writing") then into the footer ("About", "Coaching", etc.), neither of them being lists. When attempting to read the entire page, the entire top section above the documentation section of the page is skipped (which includes the lists). In "Cave painting, contemporary art and everything in between", each list was identified by its first bullet when pressing "l".</p> |
| <p>C. 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.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Skipped.</p> |



7. Tables

| | |
|---|---|
| <p>A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Google Chrome. No tables found.</p> |

8. Hyperlinks

| | |
|---|--|
| <p>A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | |
| <p>B. Live hyperlinks take you to any website or webpages external to the book.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Averaged score.</p> |
| <p>C. Live links take you to the correct webpage that is functioning properly.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>50/50 links work. Google Chrome and NVDA. Checked "Art history basics" and "First things first".</p> |
| <p>D. Live links are descriptive enough for the users to know where it should take them.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>50/50 links pass. Google Chrome and NVDA. Checked "Art history basics" and "First things first". 50/50 links were described by having the text that is on the link be narrated, which was adequate in describing the link every time. The links were all preceded by the word "link", indicating that they were links.</p> |

9. Color and Contrast

| | |
|---|--------------------|
| <p>A. All information within the material that is conveyed using color is also available in a</p> | <p>Fail</p> |
|---|--------------------|



| | |
|---|---|
| <p>manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways.</p> | |
| <p>Additional Information:</p> | <p>Google Chrome. Checked "Art history basics". Links, without a basic knowledge of website conventions and layout, were difficult to discern from normal text. Many links were of a different color (red), but did not have any other features (besides their list-like formatting [see the links under "The materials and techniques artists use"]) that would identify them as links, such as underlining. Other links did have some sort of graphical distinction, such as those on the red bar on the right; the links for "My Projects", "Help Requests", "Project Evaluations", and "Community Questions" are paired with a small icon/illustration, unlike any of the regular text. When hovering over main chapter links (e.g., "First things first", "Tools for understanding art", "Glossary", "The materials and techniques artists use", and "Art 1010"), the entire link becomes a different color (in addition to the cursor turning into a pointing hand). The links in the footer (under "About", "Support", etc.) change color when hovered over, but expecting the user to hover over every suspected link is too much to ask for. That said, 6/44 links were deemed to have adequate color redundancy.</p> |
| <p>B. Information is conveyed from the sub-categories for contrast.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Google Chrome and Colour Contrast Analyser. Checked "Art history basics" and "Cave painting, contemporary art and everything in between". All text found except for gray-on-white "ALL CONTENT IN '[Chapter name]'" and the short summary of each "chapter" page (like that of "First things first" before you go into specific sections of the chapter) pass the contrast criteria. The "play" button image next to sections that contain multimedia are too faint. That said, >90% of content passes color contrast criteria. Averaged score.</p> |



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|---|--|
| <p>C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>29/32 headers found pass. Google Chrome and Colour Contrast Analyser. Checked "Art history basics" and "Cave painting, contemporary art and everything in between". Most headers are either white on red or red on white, both of which pass color contrast criteria. The gray headers mentioned above do not pass. The link that takes the user back to the home page for the lesson "Art history basics" in the red bar to the left" is light red on red, which does not pass.</p> |
| <p>D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>>90% of the text is black on white and passes contrast criteria. Google Chrome and Colour Contrast Analyser. Checked "Art history basics" and "Cave painting, contemporary art and everything in between". Most all text (that is not a header) is black on white. Like mentioned before, the gray-on-white text that can be found on the "First things first" chapter intro page does not pass the color contrast test. This sort of color combination can only be found on these chapter intro pages (and this text is present in 2 out of 5 of these sorts of pages ["Art history basics" and "Art 1010"]).</p> |
| <p>E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Google Chrome and Colour Contrast Analyser. Checked "Art history basics" and "A brief history of Western culture". Like mentioned previously, the light gray-on-white "play" buttons next to chapter sections that are comprised of multimedia do not pass contrast criteria. Most images on this website are not simple and/or do not contain text. Since there is considerably so little images that can be considered simple, this criteria was to not be graded.</p> |



10. Language

| | |
|---|--|
| <p>A. The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>Google Chrome. Checked "Art history basics", "A brief history of Western culture", "What maps tell us", "What is Cultural Heritage?", "Glossary", "The materials and techniques artists use", and "Art 1010". All pages included a global language ("en").</p> |
| <p>B. 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.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Google Chrome. Checked "Art history basics", "A brief history of Western culture", "What maps tell us", "What is Cultural Heritage?", "Glossary", "The materials and techniques artists use", and "Art 1010". No foreign language passages were found.</p> |

11. Images

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| <p>A. 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).</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>8/8 images pass. Google Chrome and NVDA. In "A brief history of Western culture", 8/8 images contained adequate alt text. In "What made art valuable--then and now", 2/2 images contained adequate alt text.</p> |
| <p>B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.</p> | <p>Fail</p> |



| | |
|--|---|
| <p>Additional Information:</p> | <p>0/4 decorative images passed. Google Chrome and NVDA. Since this educational material has to do with art, most images are not decorative in nature. The only images found that did not contribute to the material as a lesson were the images within the chapter home pages (e.g., "First things first", "Tools for understanding art", "Glossary", "The materials and techniques artists use", and "Art 1010"). Each of the images found on these pages (except "Art 1010", which did not have an image on its respective page) acted as links to the first section within the chapter but did not include any alternate text, unlike every other image found on other pages within the website.</p> |
| <p>C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality).</p> | <p>Fail</p> |
| <p>Additional Information:</p> | <p>0/4 images pass. Google Chrome and NVDA. In "A brief history of Western culture", the map of the Byzantine Empire does not contain adequate alt text to describe the information portrayed. In "Common questions about dates", the "Today is" image does not have adequate alt text. In "Glossary - Greek architectural orders", neither of the two images describing the Classical orders of architecture contain adequate alt text (an image describing the parts of Doric order is simply titled "Doric order" in the alt text code).</p> |

12. Multimedia

| | |
|--|--|
| <p>A. A synchronized text track (e.g. open or closed captions) is provided with all video content.</p> | <p>Pass</p> |
| <p>Additional Information:</p> | <p>3/3 videos contained text tracks (closed captioning). Google Chrome. "First things first: Why look at art?", "First things first: A brief history of religion in art",</p> |



| | |
|---|---|
| | "First things first: Is there a difference between art and craft?" were checked. |
| B. A transcript is provided with all audio content. | Fail |
| Additional Information: | 1/3 videos contained transcripts. Google Chrome. "First things first: Why look at art?" (did have transcript), "First things first: A brief history of religion in art", "First things first: Is there a difference between art and craft?" were checked. |
| C. Audio/video content is delivered via a media player that is compatible with assistive technology. This includes support for all criteria listed in Section 15 below. | N/A |
| Additional Information: | No assistive player used. |

13. Flickering

| | |
|--|---|
| A. The digital resource content does not contain anything that flashes more than three times in any one-second period. | Pass |
| Additional Information: | 30/30 pages passed. Google Chrome. Checked each page in "First things first", "Tools for understanding art", "Glossary", and "Art 1010". No flickering found. |

14. Science, Technology, Engineering, and Math (STEM)

| | |
|---|-------------------------------|
| A. STEM figures have appropriate markup that indicates that the image is a figure. | N/A |
| Additional Information: | No STEM content found. |
| B. STEM graphs have appropriate markup that indicates that the image is a graph. | N/A |
| Additional Information: | No STEM content found. |
| C. STEM equations have appropriate markup that indicates that the image is an equation. | N/A |
| Additional Information: | No STEM content found. |



| | |
|---|------------------------|
| D. STEM tables have appropriate markup that indicates the image is a table. | N/A |
| Additional Information: | No STEM content found. |
| E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content. | N/A |
| Additional Information: | No STEM content found. |
| F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content. | N/A |
| Additional Information: | No STEM content found. |
| G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content. | N/A |
| Additional Information: | No STEM content found. |
| H. Assistive technology used can access the content from the STEM tables. | N/A |
| Additional Information: | No STEM content found. |

15. Interactive Elements

| | |
|---|---|
| A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology. | Fail |
| Additional Information: | 0/1 interactive elements passed. Google Chrome and NVDA. Checked "Tools for understanding art: Analyzing a work of art". Could not tab between tools in the editor--only the "OK" and "Cancel" buttons. |
| B. Each interactive element conveys information to assistive technology regarding the | Fail |



| | |
|---|---|
| <p>element's name, type, and status (e.g. "Play, button, selected").</p> | |
| <p>Additional Information:</p> | <p>0/1 interactive elements passed. Google Chrome and NVDA. Checked "Tools for understanding art: Analyzing a work of art". Hovering over elements draws no action from NVDA and trying to "read all" with NVDA (NVDA + down arrow) does not bring up anything useful (NVDA says "main content").</p> |
| <p>C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>Fail</p> |
| <p>Additional Information:</p> | <p>0/1 interactive elements passed. Google Chrome and NVDA. Checked "Tools for understanding art: Analyzing a work of art". Hovering over elements opens a text box that names the element/tool and its shortcut key, but no prompts, error messages, etc. The eyedropper tool does have an instruction text box pop up, but that is the only instance of instructions being provided upon hovering over an element.</p> |



DETAILED ACCESSIBILITY EVALUATION REPORT using Non-Assistive Technologies

Non-Assistive Technologies (NAT) Evaluations applies only native or basic tools and software such as the keyboard and Narrator in the accessibility evaluation process. These non-assistive technologies are readily available and used by the general public.

1. Accessibility Documentation

| | |
|---|--------------------------|
| A. The organization providing the online materials has a formal accessibility policy. | Fail |
| Additional Information: | No content found. |
| B. The organization providing the online materials has an accessibility statement. | Fail |
| Additional Information: | No content found. |
| C. An Accessibility Evaluation Report is available from an external organization. | Fail |
| Additional Information: | No content found. |

2. Text Access

| | |
|---|--|
| A. The text of the digital resource is available to assistive technology that allows the user to enable text-to-speech (TTS) functionality. | Pass |
| Additional Information: | Select and speak reads the text, ch. 1-8. |

3. Text Adjustment

| | |
|--|--|
| A. Text is compatible with assistive technology. | Pass |
| Additional Information: | All text is adjustable, ch. 1-8. |
| 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). | Pass |
| Additional Information: | All text and bg color changes, ch. 1-8. |



4. Reading Layout

| | |
|---|-------------------------------------|
| <p>A. 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 (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>Fail</p> |
| <p>Additional Information:</p> | <p>Text does not reflow.</p> |
| <p>B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>No printed material.</p> |

5. Reading Order

| | |
|--|---------------------------------|
| <p>A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Need source code.</p> |

6. Structural Markup/Navigation

| | |
|---|---------------------------------|
| <p>A. 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 (or is rendered by an application such as a browser, media player, or reader that offers this functionality).</p> | <p>N/A</p> |
| <p>Additional Information:</p> | <p>Need source code.</p> |
| <p>B. The text of the digital resource includes markup for bullets and numbered lists that is compatible with assistive technology (or is rendered by an application such as a browser,</p> | <p>N/A</p> |



| | |
|---|--------------------------|
| media player, or reader that offers this functionality). | |
| Additional Information: | Need source code. |
| C. 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. | N/A |
| Additional Information: | Need source code. |

7. Tables

| | |
|--|--------------------------|
| A. Data tables include markup (e.g. tags or styles) that identifies row and column headers in a manner that is compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality). | N/A |
| Additional Information: | Need source code. |

8. Hyperlinks

| | |
|--|---|
| A. In-book links take you to a location within the textbook. For example, the table of contents would be considered in-book links and embedded links take you to the correct location in the book. | N/A |
| Additional Information: | All HTML links are live. |
| B. Live hyperlinks take you to any website or webpages external to the book. | Pass |
| Additional Information: | Ch. 1 and 2 (in ch. 2 tested links in comments section "questions", tips & thanks", "guidelines", "report a mistake", "top", and "recent." |
| C. Live links take you to the correct webpage that is functioning properly. | Pass |



| | |
|---|---|
| Additional Information: | Ch. 1 and 2 (in ch. 2 tested links in comments section "questions", tips & thanks", "guidelines", "report a mistake", "top", and "recent." |
| D. Live links are descriptive enough for the users to know where it should take them. | Pass |
| Additional Information: | Ch. 1 and 2 (in ch. 2 tested links in comments section "questions", tips & thanks", "guidelines", "report a mistake", "top", and "recent." |

9. Color and Contrast

| | |
|---|--|
| A. All information within the material that is conveyed using color is also available in a manner that is compatible with those that do not perceive color, and information conveyed by color is also conveyed in other ways. | Pass |
| Additional Information: | Color redundancy found ch. 1-8. |
| B. Information is conveyed from the sub-categories for contrast. | Pass |
| Additional Information: | Ch. 1-8. |
| C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1). | Pass |
| Additional Information: | All headers pass ch. 1-8. |
| D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1). | Pass |
| Additional Information: | Light green text in comments sections doesn't pass. |
| E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1). | N/A |
| Additional Information: | No simple images. |

10. Language

| | |
|---|------------|
| A. The text of the digital resource includes markup that declares the language of the | N/A |
|---|------------|



| | |
|--|------------------------------|
| content in a manner that is compatible with assistive technology. | |
| Additional Information: | Need source code. |
| B. 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. | N/A |
| Additional Information: | No foreign languages. |

11.Images

| | |
|---|----------------------------------|
| A. 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). | N/A |
| Additional Information: | No ND images ch. 2 and 8. |
| B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology. | Pass |
| Additional Information: | Ch. 2 and 8. |
| C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by an application such as a browser, media player, or reader) that offers this functionality). | Pass |
| Additional Information: | Ch. 2 and 8. |

12.Multimedia

| | |
|---|------------------------|
| A. A synchronized text track (e.g. open or closed captions) is provided with all video content. | Pass |
| Additional Information: | Has text track. |
| B. A transcript is provided with all audio content. | Pass |



| | |
|---|------------------------------|
| Additional Information: | Has transcript. |
| C. Audio/video content is delivered via a media player that is compatible with assistive technology. This includes support for all criteria listed in Section 15 below. | Pass |
| Additional Information: | Has assistive player. |

13.Flickering

| | |
|--|-------------------------------|
| A. The digital resource content does not contain anything that flashes more than three times in any one-second period. | Pass |
| Additional Information: | No flickering content. |

14.Science, Technology, Engineering, and Math (STEM)

| | |
|---|-------------------------|
| A. STEM figures have appropriate markup that indicates that the image is a figure. | N/A |
| Additional Information: | No STEM content. |
| B. STEM graphs have appropriate markup that indicates that the image is a graph. | N/A |
| Additional Information: | No STEM content. |
| C. STEM equations have appropriate markup that indicates that the image is an equation. | N/A |
| Additional Information: | No STEM content. |
| D. STEM tables have appropriate markup that indicates the image is a table. | N/A |
| Additional Information: | |
| E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content. | N/A |
| Additional Information: | No STEM content. |
| F. STEM graphs have appropriate notation markup that conveys both the notation | N/A |



| | |
|---|-------------------------|
| (presentation) and meaning (semantics) of the STEM content. | |
| Additional Information: | No STEM content. |
| G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content. | N/A |
| Additional Information: | No STEM content. |
| H. Assistive technology used can access the content from the STEM tables. | N/A |
| Additional Information: | |

15. Interactive Elements

| | |
|--|---------------------------------|
| A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g. annotations) allows keyboard-only operation both with and without assistive technology. | N/A |
| Additional Information: | No interactive elements. |
| B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected"). | N/A |
| Additional Information: | No interactive elements. |
| C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered by an application such as a browser, media player, or reader that offers this functionality). | N/A |
| Additional Information: | No interactive elements. |



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