



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: Anatomy and Physiology

Format of Textbook: PDF

Assistive Technology (AT) Evaluation Score: Overall	6.5 (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	7.5 (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:	Did not find any information about OpenStax's formal accessibility policy.
B. The organization providing the online materials has an accessibility statement.	Fail
Additional Information:	Did not find any information about OpenStax's accessibility statement.
C. An Accessibility Evaluation Report is available from an external organization.	Fail
Additional Information:	Did not find any information about OpenStax's accessibility evaluation report.

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:	5/5 pages had proper text to speech capability (Pg. 18, 244, 415, 555, 702). All normal text was read aloud and the reader was able to follow along easily.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	5/5 pages were able to properly zoom in and out (Pg. 18, 244, 415, 555, 702). However, in order to



	read all of the content on the page the reader has to horizontally scroll.
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).	Fail
Additional Information:	3/5 pages had proper adjustment of font and background colors (Pg. 18, 244, 415). The remaining 2 pages turned all black when adjusting the color (Pg. 11, 12).

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:	5/5 pages had proper reflow of text (Pg. 18, 244, 415, 555, 702). However, it only had proper reflow of text because the reflow of the text did not adjust while zooming in and out on the content.
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	N/A
Additional Information:	No printed version available.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	Pass
Additional Information:	5/5 pages had proper reading order of text content (Pg. 18, 244, 415, 555, 702). Even though figures, graphs, and images were skipped the rest of the



	content was still in a logical order and the reader was able to follow along.
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6. Structural Markup/Navigation

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).	Fail
Additional Information:	0/67 pages had proper navigation of text (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Headers and lists were not found when using the NVDA hotkeys. The only items that were navigable were the items in the list.
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).	Fail
Additional Information:	0/10 lists were properly navigable using the NVDA hotkeys (Pg. 17-24, 247-249, 415-763). All lists were not found by the NVDA reader, however the items of the lists were found using the item hotkey.
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:	No eReader application.



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>Fail</p>
<p>Additional Information:</p>	<p>0/10 tables were properly navigable using the NVDA hotkeys (Pg. 51, 72, 150-155, 162, 234, 434, 701, 760, 855). One table was skipped because it was a figure. The other tables were read as though there were no cells, just straight sentences.</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>Pass</p>
<p>Additional Information:</p>	<p>30/30 within book hyperlinks were properly functioning and brought the reader to appropriate places within the book (Pg. 5-28, 151-165, 230-240, 370, 546-556, 569-570).</p>
<p>B. Live hyperlinks take you to any website or webpages external to the book.</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>20/20 live hyperlinks were properly functioning and brought the reader to appropriate places online (Pg. 2-55, 150-165, 232-235, 250, 370-375, 414, 544, 569-570, 700, 930, 1222). 0/20 live hyperlinks had proper description (Pg. 2-55, 150-165, 232-235, 250, 370-375, 414, 544, 569-570, 700, 930, 1222). All 20 live hyperlinks were labeled as URLs.</p>
<p>C. Live links take you to the correct webpage that is functioning properly.</p>	<p>Pass</p>
<p>Additional Information:</p>	<p>20/20 live hyperlinks were properly functioning and brought the reader to appropriate places online (Pg.</p>



	2-55, 150-165, 232-235, 250, 370-375, 414, 544, 569-570, 700, 930, 1222).
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	0/20 live hyperlinks had proper description (Pg. 2-55, 150-165, 232-235, 250, 370-375, 414, 544, 569-570, 700, 930, 1222). All 20 live hyperlinks were labeled as URLs.

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:	67/67 pages had consistent color redundancy (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Headers were consistently aquamarine blue against a white background, normal text was black, and links were tan.
B. Information is conveyed from the sub-categories for contrast.	Fail
Additional Information:	0/67 pages had headers with proper contrast (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Headers were aquamarine against a white background and did not pass the color contrast evaluation. 67/67 pages had proper text contrast (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Text was black against a white background.
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	Fail
Additional Information:	0/67 pages had headers with proper contrast (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Headers were



	aquamarine against a white background and did not pass the color contrast evaluation.
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	Pass
Additional Information:	67/67 pages had proper text contrast (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Text was black against a white background.
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 found.

10. Language

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.	N/A
Additional Information:	Do not have Adobe Pro/Complete version.
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:	Do not have Adobe Pro/Complete version.

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).	Fail
Additional Information:	0/135 pages had proper descriptions read aloud for non-decorative images (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-



	865, 920-930). Images were skipped when read aloud with only the captions used to describe what the images contained. The captions did not hold enough information for the reader to fully understand what was in the images. One image did not have a caption and the image was not labeled and the image was skipped (pg. 11).
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	N/A
Additional Information:	No decorative images found.
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).	Fail
Additional Information:	0/135 pages had proper descriptions read aloud for complex images (Pg. 20-30, 150-160, 230-240, 370-380, 410-420, 540-550, 690-700, 760-770, 855-865, 920-930). Images were skipped when read aloud with only the captions used to describe what the images contained. The captions did not hold enough information for the reader to fully understand what was in the images. One image did not have a caption and the image was not labeled and the image was skipped (pg. 11).

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	No multimedia content found.
B. A transcript is provided with all audio content.	N/A
Additional Information:	No multimedia content found.
C. Audio/video content is delivered via a media player that is compatible with assistive	N/A



technology. This includes support for all criteria listed in Section 15 below.	
Additional Information:	No multimedia content found.

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.	Pass
Additional Information:	9/10 figures had proper markup (Pg. 18, 20, 22, 23, 25, 30, 51, 152, 153). However, the remaining tenth image was not labeled as a figure (Pg. 11).
B. STEM graphs have appropriate markup that indicates that the image is a graph.	Fail
Additional Information:	Only 6 graphs were found. 0/6 graphs had proper markup (Pg. 238, 865, 867, 870, 1247). These graphs were labeled as figures.
C. STEM equations have appropriate markup that indicates that the image is an equation.	Pass
Additional Information:	Only 4 equations were found. 4/4 equations had proper markup (Pg. 868(4)). All four equations were visible and not blacked out.
D. STEM tables have appropriate markup that indicates the image is a table.	Fail
Additional Information:	0/10 tables had proper markup (Pg. 51, 72, 150, 155, 162, 237, 429, 701, 760, 876). Tables were either labeled as figures (pg. 51, 760) or not labeled at all.
E. STEM figures have appropriate notation markup that conveys both the notation	Fail



(presentation) and meaning (semantics) of the STEM content.	
Additional Information:	0/10 figures had proper notation markup (Pg. 18, 20, 22, 23, 25, 30, 51, 152, 153). All of the figures were skipped with only the captions read aloud if it had a caption. However, the captions did not have enough information to properly describe what was in the figures.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail
Additional Information:	Only 6 graphs were found. 0/6 graphs had proper notation markup (Pg. 238, 865, 867, 870, 1247). Since the graphs were labeled as figures, the content of the graphs were skipped when read aloud.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail
Additional Information:	Only 4 equations were found. 4/4 equations had proper notation markup (Pg. 868(4)). The equations were not read in a logical order and the division signs were skipped when read aloud.
H. Assistive technology used can access the content from the STEM tables.	Fail
Additional Information:	0/10 tables had proper notation markup (Pg. 51, 72, 150-155, 162, 234, 434, 701, 760, 855). One table was skipped because it was a figure. The other tables were read as though there were no cells, just straight sentences.

15. Interactive Elements

A. Each interactive element (e.g. menu, hyperlink, button) and function (e.g.	N/A
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annotations) allows keyboard-only operation both with and without assistive technology.	
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.

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
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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:	Pgs 17-22 were checked. The text is available to assistive technology that allows user to enable text-to-speech functionality.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	Pgs 17-22 were checked. When the window page chaged in size, no horizontal bar appeared. The font size of all pages checked could be adjusted.
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).	Fail
Additional Information:	Pgs 17-22 were checked. When changing the font/background color to green text on black, the background color did change to black and the font color did change to green. However, chapter titles and subtitles did not change to green. They remained blue. Also, figure markups remained yellow.

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
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Additional Information:	Pgs 17-22 were checked. When reflowing the text, the text to speech function did work. The text was available for assistive technology. The text was able to reflow.
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	N/A
Additional Information:	Need additional information. We do not have printed material to compare it too.

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of the page when rendered by assistive technology.	Pass
Additional Information:	Pgs 20-25 were checked. The reading order was logical on all five pages.

6. Structural Markup/Navigation

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).	Fail
Additional Information:	The tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.
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).	Fail



Additional Information:	There were no list structural markups. The Tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.
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.	Fail
Additional Information:	There was none found. The Tagged PDF, Headings, and Title all failed using the accessibility checker. Bookmarks passed.

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).	Fail
Additional Information:	0/5 tables included alternative text that identified as rows and columns headers. The tables were on pages 72, 155, 162, 217, and 220. The text-to-speech function read the tables by row but did not identify the rows or column as headers. In other words in only read them by row and never mentioned that it was reading row 1 (headers). When reading the rows some columns were ignored (such as the table on page 72) and the text-to-speech function did not read those columns. Using the accessibility checker, the rows TH and TD, headers and regularity all failed.

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	Pass
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embedded links take you to the correct location in the book.	
Additional Information:	30/30 total in-book links worked. All links appeared to be links and did function as links. --> (Beginning) Pg 5 was checked=(10/10) hyperlinks worked. --> (Middle) Pgs 704, 706, 707, 711 (2 links), 712, 714 (2 links), and 715 were checked=(10/10) all hyperlinks did work --> (End) Pgs 1278, 1280, 1284, 1297, 1288, 1293, 1294, 1297, 1298, and 1301 were checked=(10/10) all hyperlinks did work--> Using the accessibility checker, navigations links passed.
B. Live hyperlinks take you to any website or webpages external to the book.	Fail
Additional Information:	20/20 live links worked. The link were found on pages 2 (6 links), 3, 8, 9 (3 links), 10, 12, 14, 16, 18, 20, 31, 202, and 794. All links were in URL form. The text-to-speech function read the link in URL form. Using the accessibility checker, the navigation links passed.
C. Live links take you to the correct webpage that is functioning properly.	Pass
Additional Information:	20/20 live links worked. The link were found on pages 2 (6 links), 3, 8, 9 (3 links), 10, 12, 14, 16, 18, 20, 31, 202, and 794. The accessibility checker showed nagivation links passed.
D. Live links are descriptive enough for the users to know where it should take them.	Fail
Additional Information:	0/20 live links were descriptive enough. The link were found on pages 2 (6 links), 3, 8, 9 (3 links), 10, 12, 14, 16, 18, 20, 31, 202, and 794. All links were in URL (www.) form. The text-to-speech function read the links in URL form. Using the accessibility checker, navigation links passed.

9. Color and Contrast

A. All information within the material that is conveyed using color is also available in a	Pass
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<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>Pgs 17-85 were checked. Information not conveyed by color alone. Size of font was used to convey information as well as the style (bold vs non-bold text). The chapter titles larger is size compared to the rest of the text. Figure markups and links were in yellow. Some text was against yellow background color.</p>
<p>B. Information is conveyed from the sub-categories for contrast.</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>Pgs 17-85 were checked. Most pages had the contrast ratio of 4.51:1 and above (15.74:1). The chapter titles were larger in size compared to the rest of the text. The chapter titles failed with 3.32:1. There was text in bold which passed with a ratio of 19.06:1. Small headers at the top of the page failed with a ratio of 20.47:1. Links were in yellow and failed with a ratio of 2.52:1. Chapter objectives were against blue background color and were in white; failed in 3.39:1. Text against yellow background passed with a ratio of 17.12:1. Interactive links headers passed failed with 2.77:1. Figure markups and links in yellow against yellow background failed with a ratio of 2.5:1.</p>
<p>C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>Pgs 17-85 were checked. The chapter titles were larger in size compared to the rest of the text. The chapter titles failed with 3.32:1. Small headers at the top of the page failed with a ratio of 20.47:1.</p>
<p>D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).</p>	<p>Fail</p>
<p>Additional Information:</p>	<p>Pgs 17-85 were checked. The text on pages checked had the contrast ratio of 4.51:1 and above (19.17:1). The chapter titles failed with 3.32:1. There was text in bold which passed with a ratio of 19.06:1. Small</p>

	<p>headers at the top of the page failed with a ratio of 20.47:1. Links were in yellow and failed with a ratio of 2.52:1. Chapter objectives were against blue background color and were in white; failed in 3.39:1. Text against yellow background passed with a ratio of 17.12:1. Interactive links headers passed failed with 2.77:1. Figure markups and links in yellow against yellow background failed with a ratio of 2.5:1.</p>
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	Fail
Additional Information:	Pgs 17-85 were checked. Simple images failed with a ratio of 4.51:1 and below (Example: On page 51, the simple image failed with a ratio of 1.0:1).

10. Language

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.	Fail
Additional Information:	Using the accessibility checker the primary language failed.
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.	Fail
Additional Information:	Using the accessibility checker the primary language failed.

11. Images

A. Non-decorative images have alternative text that is compatible with assistive technology (or is rendered by an application such as a	Pass
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browser, media player, or reader that offers this functionality).	
Additional Information:	10/10 non-decorative images included alternative text. Images were found on pages 17, 18, 25, 26, 27, 29, 30, 32, 33, and 34. Figures alternative text failed.
B. Decorative images are marked with null alternate text or contain markup that allows them to be ignored by assistive technology.	N/A
Additional Information:	No decorative images found. Figures alternative text failed.
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).	Fail
Additional Information:	0/10 complex images had descriptive alternative text. Images were found on pages 72, 155, 162, 217, 220, 222, 234, 236, 237, and 239. All complex images did not have alternative text that conveyed meaning on the images. Figures alternative text failed.

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	N/A
Additional Information:	No content found.
B. A transcript is provided with all audio content.	N/A
Additional Information:	No content found.
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 content found.



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:	Pgs 1-10 were checked. No flickering content was observed. Using the accessibility checker, screen flicker passed.

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

A. STEM figures have appropriate markup that indicates that the image is a figure.	Pass
Additional Information:	10/10 figures markups are compatible with assistive technology and were sufficient to convey meaning. Figures were found on pages 17, 18, 25, 26, 27, 29, 30, 32, 33, and 34.
B. STEM graphs have appropriate markup that indicates that the image is a graph.	N/A
Additional Information:	Graphs were under figure markups.
C. STEM equations have appropriate markup that indicates that the image is an equation.	N/A
Additional Information:	No equations were found throughout the book.
D. STEM tables have appropriate markup that indicates the image is a table.	Pass
Additional Information:	10/10 table markups are compatible with assistive technology and were sufficient to convey meaning. Tables were found on pages 72, 155, 162, 217, 220, 222, 234, 236, 237, and 239.
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Pass
Additional Information:	10/10 figures notation markups are compatible with assistive technology and were sufficient to convey meaning and presentation. The notation markups



	were sufficient enough. Figures were found on pages 17, 18, 25, 26, 27, 29, 30, 32, 33, and 34.
F. STEM graphs have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	N/A
Additional Information:	Graphs were under figure notation markups.
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 equations were found throughout the book.
H. Assistive technology used can access the content from the STEM tables.	Fail
Additional Information:	0/10 tables notation markups are compatible with assistive technology and were sufficient to convey meaning and presentation. The notation markups were not sufficient enough. Tables were found on pages 72, 155, 162, 217, 220, 222, 234, 236, 237, and 239.

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 Element Present.
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 Element Present.
C. All instructions, prompts, and error messages necessary to complete forms are conveyed as text to assistive technology (or are rendered	N/A



by an application such as a browser, media player, or reader that offers this functionality).	
Additional Information:	No Interactive Element Present.

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