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: **Inside the Cell**
Format of Textbook: **HTML**

Assistive Technology (AT) Evaluation Score: Overall	8.6 (Maximum score = 10)
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. • 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	5.2 (Maximum score =10)
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.	

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:	**There were no links provided for aditional information regarding the formal accessibility policy. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**There were no links provided for aditional information regarding the accessibility statement. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**There were no links provided for aditional information regarding accessibility. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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.	**Fail**
Additional Information:	**0/1 chapters were analyzed and passed text to speech. Chapter 1 was used for this analysis.**

	Although the NVDA program was able to read the text content, it paused every time it came to a word that served as a link. Once the NVDA reader was manually started after encountering these links and pausing, some of the words in the sentence were missing. The reader would skip three or four words before beginning to read again. This section received a score of 6, which is failing, due to the fact that the reader did read most of the text but failed to perform adequately. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.

3. Text Adjustment

A. Text is compatible with assistive technology.	Pass
Additional Information:	1/1 chapters were analyzed and passed text size compatibility. Chapter 1 was used for this analysis. The text content of the chapter allowed for adequate text size adjustment between the ranges of 30% to 300% zoom. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
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:	1/1 chapters were analyzed and passed. Chapter 1 was analyzed and allowed for adequate adjustment of the font/background color. The tool used to analyze this component was the Google extension "Care your Eyes." Google chrome was used to access the book online.

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).	**Fail**
Additional Information:	**0/9 web pages were analyzed and passed. All content was taken from the home page, preface, chapters 1 through 5, the glossary and the extras page. All of the web pages analyzed did not allow for adequate text reflow between 30% and 300% zoom levels. Horizontal scrolling was required. Results may vary depending on screen size. Text reflow was analyzed using a standard Toshiba laptop with a 16 inch screen size. Google chrome was used to access the book online.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**N/A**
Additional Information:	**0/0 web pages were analyzed and passed for matching page number content in the PDF version. There was a PDF version of this text, however, the HTML version of the book does not provide page numbers to compare with the PDF version. The content covered in each chapter and section is the same in both the HTML and PDF versions. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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 were analyzed and passed for digital resource layout. Chapters 1 through 5 were used for**

	this analysis. The reading order for digital resource content logically corresponded to the visual layout of the page when rendered by assistive technology. The program used to analyze the digital resource layout was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.

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).	Pass
Additional Information:	1/1 chapters were analyzed and passed markup for navigational text. Chapter 1 was used to analyze navigational text. The text of the digital resource included markup that allowed for navigation by heading levels using assistive technology. All level 1 headings were dark purple text on a white background, all level 2 headings were dark orange on a white background and the first three level 3 headings were white text on a light purple background and the last four level 3 headings were dark blue text on white background. The program used to analyze navigational text was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
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).	Pass
Additional Information:	10/10 lists were analyzed and passed for structural markup of lists. Chapters 1 and 2 were used to

	analyze lists. The text of the digital resource included markup for bullets and numbered lists that was compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
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:	**0/0 text content analyzed for structural markup for eReader application. No additional eReader application being used in this evaluation. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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).	**Pass**
Additional Information:	**2/2 tables were analyzed and passed markup. Tables were taken from chapter 1. Data tables included markup that identified row and column headers in a manner that was compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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:	**The within book links are included in the live links analysis for HTML formats.**
B. Live hyperlinks take you to any website or webpages external to the book.	**Pass**
Additional Information:	**This is a combined average of the following two subsections of the links description and functionality. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**50/50 links were analyzed and passed for functionality. The links were taken from chapter 1. The links took you to the correct location. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
D. Live links are descriptive enough for the users to know where it should take them.	**Pass**
Additional Information:	**50/50 links were analyzed and passed for link description. The links were taken from chapter 1. There was adequate descriptions of the passing links that aided in determining where they would take you. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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:	**1/1 chapters were analyzed and passed for color redundancy. Chapter 1 was analyzed. The text content was color redundant in that it provided adequate means of distinguishing the content aside from color. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**This is an average score taken from the combined sub sections of the color and contrast field. The content was analyzed using the color contrast analyzer tool. Google chrome was used to access the book online.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**15/18 headers were analyzed and passed for adequate color contrast. Chapter 1 was used for analysis. All level 1 headers passed and were dark purple text on a white background. All level 2 headers passed and were dark orange text on a white background. The first three level 3 headers failed color contrast with a ratio of 2.7:1, and were white text on a light purple background; The remaining four level 3 headers passed and were dark blue text on a white background. The content was analyzed using the color contrast analyzer tool. Google chrome was used to access the book online.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**

Additional Information:	10/10 text samples were analyzed and passed for adequate color contrast. Text samples were taken from chapter 1. The text was a very dark purple color on white background. The content was analyzed using the color contrast analyzer tool. Google chrome was used to access the book online.
E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**Pass**
Additional Information:	6/6 simple images were analyzed and passed color contrast. The images were taken from chapter 1. The content was analyzed using the color contrast analyzer tool. Google chrome was used to access the book online.

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.	**Pass**
Additional Information:	The text of the digital resource includes markup that declares the language of the content in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
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:	The digital resource did not include passages in a foreign language. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.

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).	**Pass**
Additional Information:	**8/8 non-decorative images were analyzed and passed. Chapter 3 was used for this analysis. Alternate text descriptions are provided for each image that are compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
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:	**0/0 decorative images were analyzed and passed. Chapter 3 was used for this analysis. There were no decorative images to analyze whether or not alternate text descriptions were provided for each image that would be compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
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:	**4/4 complex images were analyzed and passed. Chapter 3 was used for this analysis. Text descriptions are provided for each image that are compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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 were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**No multimedia were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
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 multimedia were found within the text resource. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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:	**While analyzing book material there was no flickering on any of the pages. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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 were analyzed and passed. All STEM figures were taken from chapter 1. The figures are marked up in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
B. STEM graphs have appropriate markup that indicates that the image is a graph.	**N/A**
Additional Information:	**No STEM graphs found. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
C. STEM equations have appropriate markup that indicates that the image is an equation.	**N/A**
Additional Information:	**No STEM equations found. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
D. STEM tables have appropriate markup that indicates the image is a table.	**Pass**
Additional Information:	**2/2 tables were analyzed and passed. All STEM tables were found in chapter 1. The tables were marked up in a manner that is compatible with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
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 were analyzed and passed. All STEM figures were taken from chapter 1. The resource conveys both the notation (presentation) and meaning (semantics) of the STEM content. The program used to analyze text content was NVDA**

	which is an open source screen reader for Windows. Google chrome was used to access the book online.
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 graphs found. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
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 equations found. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**
H. Assistive technology used can access the content from the STEM tables.	**Pass**
Additional Information:	**2/2 tables were analyzed and passed. All STEM tables were found in chapter 1. The resource conveys both the notation (presentation) and meaning (semantics) of the STEM content. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.**

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 were analyzed and passed. The interactive element was located in the "extras: animations, movies, and student stuff" section of the book. The interactive element did not allow for**

	keyboard-only operation with or without assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
B. Each interactive element conveys information to assistive technology regarding the element's name, type, and status (e.g. "Play, button, selected").	Fail
Additional Information:	0/1 interactive elements were analyzed and passed. The interactive element was located in the "extras: animations, movies, and student stuff" section of the book. The interactive element did not convey information to assistive technology regarding the element's name, type, and status. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.
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).	Pass
Additional Information:	1/1 interactive elements were analyzed and passed. The interactive element was located in the "extras: animations, movies, and student stuff" section of the book. The interactive element conveyed instructions, and prompts with assistive technology. The program used to analyze text content was NVDA which is an open source screen reader for Windows. Google chrome was used to access the book online.

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:	**There was no link provided for the accessibility policy.**
B. The organization providing the online materials has an accessibility statement.	**Fail**
Additional Information:	**There was no link provided for the accessibility statement.**
C. An Accessibility Evaluation Report is available from an external organization.	**Fail**
Additional Information:	**There was no link provided for 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:	**Chapter 4, it reads content but it skips the major headings and subheadings. For example if the subheading is Characterisitcs of life and the body paragraph starts with not all scientist, the text to speech will only read not all scientist, but it does read the diagram in the chapter. Chapter : When you start the speech thing it skips the CHAPTER 1, it does explain the figure of earth, figure 1. It skips subheading names and the various figures.**

3. Text Adjustment

A. Text is compatible with assistive technology.	**Pass**
Additional Information:	**Chapter 3, all the content on the webpage had the capability of being minimized and maximized, the text and the figures of each page.**
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:	**Chapter 1 and 3; all pass because both chapters convert to nightmode (black background) but images were also switched but they are stil visible.**

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).	**Fail**
Additional Information:	**0/5 chapters passed. When content was zoomed in, the text did not wrap and the text and images were just zoomed and made larger.**
B. If the digital resource is an electronic alternative to printed materials, the page numbers correspond to the printed material.	**Fail**
Additional Information:	**PDF has 189 pages but the wikibook is not organized by page numbers, it is organized by concept sections so the comparison could not be made.**

5. Reading Order

A. The reading order for digital resource content logically corresponds to the visual layout of	**N/A**

the page when rendered by assistive technology.	
Additional Information:	**No assistive technology used.**

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).	**N/A**
Additional Information:	**No assistive technology used.**
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).	**N/A**
Additional Information:	**No assistive technology used.**
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 assistive technology used.**

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:	**No assistive technology used.**

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.	**Pass**
Additional Information:	**20/20 Hyperlinks within book passed. In the Preface of the book, there are hyperlinks within the book for chapter 1 (it works, it took you to the correct chapter section in the book). In chapter 1 there is another hyperlink but it takes you to the glossary of the book, the word that is found on the glossary is simply bolded in blue and when you click on it then it takes you the glossary (there were more than 20, checked 10)**
B. Live hyperlinks take you to any website or webpages external to the book.	**Fail**
Additional Information:	**10/20 Hyperlinks passed. Chapter 2, (5, chapter 2 section protein origami, informatin on project link, http and opens new window and works. Chapter 4 (4) chapter 5 (1), but 4 on the publications of biology majors, (3 site and 1 Findings pdf), chapter 3 (3), Chapter 1(1) and one on more bio publications.**
C. Live links take you to the correct webpage that is functioning properly.	**Pass**
Additional Information:	**18/20 Hyperlinks passed. Chapter 2, section 2.1 pass because atom and isotope site works. Section 2.2 fails because it looks like an active link that will take you to the 3d animation of the strucure of ice lattice but instead it opens a blank page and downloads a movie file to your laptop wihtout permission. In section 2.2 the second hyperlink passes, there is hyperlink that takes you the the US geological survey that talks about water and the link "website" does take you to a live website. Section 2.3 has another**

hyperlink that provides an additional perspective on lipids, the link "animation" takes you to a live page that provides an animation on lipids. Chapter 4, section 4.1 provides a hyperlink that takes you to a site that explains kinetic and potential energy, and the webpage works. There is another hyperlink in the same section 4.1, and it takes you to a webpage that shows an animation of the transition of energy and another fit. Section 4.4 has a "site" hyperlink that takes you to a site where you can see anaerobic cellular respiration but you need a specific plug in (having a small warning would be helpful becasuse then the reader won't waste time if they don't have that plug in or they can download it before clinking on the link). Chapter 6, section 6.2 has a hyperlink in the body paragraph that directs the reader to a video about cell cycle, it's a URL but it does take you to a live webpage that works. In section 6.2 there is another hyperlink that provides more on mitosis, the page is of movies that illustrate different aspects of mitosis and it's active and works. Later in section 6.2 there is another link "this animation" of the animation of cell cycle, it takes you to an active and working webpage. Section 6.3 has a hyperlink that redirects the user into a website where they can watch how cancer is a result of cell cycle errors, the webpage is working as well. Chapter 14, section 14.2 has a hyperlink "website" that redirects the user to a website that shows an animation of the life cycle of the fern but the webpage is not active or working. In section 14.3 there is a hyperlink that redirects the user to a video on the proces of seed production, the webpage is live and working. Chapter 15, section 15.1 there a hyperlink to a video by EO wilson on animal diversity, the link is active and working. There is another video hyperlink in section 15.1 that talks about symmetry, the webpage is live and active. In 15.2 there is a video hyperlink that directs the reader to a webpage about feeding sponges and the link is active and working. In section 15.2 there is another video link that directs the user to an active and

	working webpage about jellies. In section 15.2 there is another video hyperlink that redirects the user to an active webpage but the video is not working.
D. Live links are descriptive enough for the users to know where it should take them.	**Fail**
Additional Information:	**0/20 Hyperlinks passed. Chapter 2,4,6,14,15 all failed because none of the hyperlinks were descriptive enough, in all the chapters the hyperlinks were labeled as link, website, or animation, it needs to be a descriptive name, not a genral name that can be used for all hyperlinks.**

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.	**Fail**
Additional Information:	**Chapter 1 doesn't pass because the headings of section are in a different blue tone but they can be distinguished not just by color but by size as well, all headings are larger than body text. All hyperlinks are also a blue tone but they are not underlined so if you are blind then they might assume it is part of the text and not a hyperlink.**
B. Information is conveyed from the sub-categories for contrast.	**Pass**
Additional Information:	**Chapter 1 all text passed AA requirements for contrast.**
C. Contrast for headers passed WCAG AA standards for large texts (contrast ratio 3:1).	**Pass**
Additional Information:	**Chapter 1 Orange heading passed AA requirements.**
D. Contrast for text passed WCAG AA standards for normal texts (contrast ratio of 4.5:1).	**Pass**
Additional Information:	**Chapter 1 Text passed AA requirements.**

E. Contrast for simple images (for example, images of atoms) passed WCAG AA standards (contrast ratio of 4.5:1).	**N/A**
Additional Information:	**All images were complex.**

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.	**Pass**
Additional Information:	**The code says "lang="en".**
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 additional Language.**

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:	**0/1 chapters passed. Chapter 1, when you search for image alt in the code, there aren't any alternative names given, or any description, it appears as if all images are within a div.**
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 image found.**
C. Complex images, charts, and graphs have longer text descriptions that are compatible with assistive technology (or are rendered by	**Fail**

an application such as a browser, media player, or reader) that offers this functionality).	
Additional Information:	**0/1 chapters passed. chapter 1, has one complex image in scientific method section on the steps involved in scientific methods, the image is not labeled or explained.**

12.Multimedia

A. A synchronized text track (e.g. open or closed captions) is provided with all video content.	**N/A**
Additional Information:	**There weren't any multimedia in wikibook.**
B. A transcript is provided with all audio content.	**N/A**
Additional Information:	**There weren't any multimedia in wikibook.**
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:	**There weren't any multimedia in wikibook.**

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 data provided inwiki book.**

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 assistive technology provided.
E. STEM figures have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Pass
Additional Information:	7/10 figures passed. The Preface (1 image/fails), Preface, there is an image of a woman and different body parts with mini pictures of cell types, but the image itself is not labeled. In chapter 1 (3 images, fail), there is an image of organelles but it is not labled (ex. Figure 1. is missing) nor explained in depth. In the Nucleus subsection there are two images of a nucleus, one is a representation and the other is a cell picture under a microscope, but neither are labeled or explained. In the cell membrane subsection there are three images (cell membrane rough/smooth ER, and rough ER cell), these three images have a very quick summary below them in a blue box but it is not labled. Chapter 2, subsection got energy contain images of ATP process proteins, and the structure or RNA.
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 Graphs detected in book.
G. STEM equations have appropriate notation markup that conveys both the notation (presentation) and meaning (semantics) of the STEM content.	Fail

Additional Information:	**No STEM Equations found in book.**
H. Assistive technology used can access the content from the STEM tables.	**Fail**
Additional Information:	**Chapter 1, subsection Nucleus there is a table on the difference between eukaryotic cells and prokaryotic cells, it is not labeled (ex, table 1) and their quick explanation is not clearly labeled as to belonging to the table. In subsection mitochindria there is a table on the spaces in the different cell parts, it is not labeled nor explained well.**

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 found.**
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 found.**
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 found.**