ACCESSIBILITY FEATURES OF CONNEXIONS[*]

Connexions

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Abstract

This module describes the accessibility features of the Connexions (cnx.org) web site.

This module describes several of the accessibility features of the Connexions (cnx.org)[1] web site. We are committed to making the materials in our Content Commons available to all users. We encourage users with disabilities or those supporting users with accessibility requirements to contact us regarding any feature requests, technical difficulties, or general feedback you may have. We are actively growing our support for assistive technologies and are happy to work with individuals and groups to ensure their needs are met.

NOTE: This is a living document. We are continuously working to add features and improve the usability of Connexions, and have many upgrades currently in the works. As these upgrades are made available, this document will be updated to reflect those changes.

1 Why Connexions is Concerned with Open Access

Connexions is an environment for collaboratively developing, freely sharing, and rapidly publishing scholarly content on the Web. Our Content Commons contains educational materials for everyone — from children to college students to professionals.

As part of this mission, we are committed to making our Content Commons accessible to users with disabilities, allowing us to serve a wider audience, extend our community, and provide for greater collaboration and sharing of ideas. We are also aware that many organizations that may wish to take advantage of Connexions, including schools and government offices, are required by policy or law to accommodate users with disabilities, and are fully committed to working with these groups to meet their needs.

2 Site Navigation

Several features have been built into the Connexions site in order to facilitate keyboard navigation, particularly for those visitors using screen reading technologies.

Header Tags

All Connexions pages make use of HTML header tags, sometimes nested five or six deep, in order to create a clearly defined hierarchy of page elements. H1 tags, for example, are used to mark the beginning of the

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[†]http://creativecommons.org/licenses/by/3.0/

[1]http://cnx.org

page as well as the beginning of the main body of the page content, while subordinate header tags (such as H2, H3, etc.) are used for elements within their respective parent elements. This creates a well-defined page structure that can be easily read and navigated by screen readers and other content-parsing software.

You can browse by header by using the h key, or browse by header level by using the number keys. For instance, the sequence 11 will take you to the second H1 header, which is the beginning of the main body of the page content. The sequence 12 will take you to the first H2 following the first H1, which is the Table of Contents section on collections and modules in a collection context.

> NOTE: Each page contains a number of sidebar portlets designed to provide easy access to various site features and related content. Due to technical reasons, these portlets are designed using a mix of header structures and definitions lists. While it is worth pointing out that this structure is somewhat unusual, we do not anticipate this causing problems for most users.

Hidden Links
Each page on the Connexions site has a set of hidden links accessible to those using keyboard navigation and/or screen reading software. These links appear at the beginning of the page and are helpful for moving within the content.

- **Skip to Content**: This link causes the browser to advance to the main body of content on the page, bypassing site navigation features.
  - On content pages (modules and collections): append `#cnx_content_title` to the URL.
  - On other site pages: append `#documentContent` to the URL.
- **Skip to Navigation**: This link causes the browser to advance to the sidebar portlets that provide access to various site features, related content, and navigation within a collection.
  - On content pages (modules and collections): append `#cnx_sidebar_column` to the URL.
  - If you are viewing a collection or a module within the context of a collection, you can jump directly to the Table of Contents by appending `#cnx_course_content` to the URL.
  - On other site pages: append `#portlet-navigation-tree` to the URL.
- **Skip to Collection Info**: This link causes the browser to advance to the collection info preceding the page content. Append `#cnx_course_header` to the URL. This link is only present when viewing a **module** within the context of a **collection**.

3 Accessibility Features

Connexions has provided authors with a number of tools for making their content more accessible to users with disabilities. While we cannot guarantee that every author of every module will take advantage of these features, we are working to improve our authors' awareness of the importance of these issues. We are also currently working to improve our content editor, Edit-In-Place, to make authoring accessible content easier. If you come across content that does not conform to accessibility standards, you may wish to contact the authors directly and ask them to consider updating their works accordingly.

Alt Text for Images and Media
Providing alt text for images and other media allows authors to convey information about that media to users that are not able to access the media itself. For example, a user with limited vision may not be able to view a bar graph, but would be able to use a screen reader to hear a description of that graph if one is provided.

Connexions provides support for alt text for all media elements. For situations where more detailed descriptions are required, authors may also attach a longdesc file to the module.

Tables
Connexions supports a number of features designed to improve the reading of tables by screen readers. In addition to header and footer rows, authors can also specify a column of row headers. These identifiers

allow screen readers to properly interpret tabular data and allow users to navigate a table using well-defined structures. Connexions also supports the use of table summaries and captions, allowing authors to convey information about the table as a whole that may not be obvious to non-sighted users.

4 Supported Technology

Screen Readers
Connexions currently uses JAWS 9 to test content and features for accessibility purposes. This is the recommended platform for users requiring screen reading technologies. If you use another product and are experiencing difficulty accessing content, please contact us with details and we will be happy to work with you to resolve your problem.

MathML Support
Connexions supports MathML (http://www.w3.org/Math[2]), a specialized XML language recognized by the World Wide Web Consortium (W3C) as the standard for marking up mathematical symbols and equations. One advantage of using MathML is that browsers can treat math-related content as text, allowing them to resize expressions and equations to match the user's preferred font size without losing detail or clarity.

Depending on your browser, you may need to install third-party software in order to properly view MathML content:

- For Internet Explorer (version 6 or later), you can download the MathPlayer[3] plugin. This option is currently the best option for those using screen reading software.
- For Firefox 2, you can download additional fonts[4] . Firefox 2 provides native support for MathML, and these fonts allow for the proper display of mathematical symbols.
- Firefox 3 provides native MathML and font support and does not require additional software to be installed.

NOTE: At this time, the JAWS screen reading software does not properly read all MathML content when used with the Firefox web browser. For users requiring screen reading software, Connexions strongly recommends using Internet Explorer with MathPlayer installed.

If you see strange characters in a mathematical expression, it is likely that your browser does not support MathML or does not have the appropriate third-party software installed. These situations can usually be resolved by using one of the browser configurations listed above.

Braille-Ready Format
A handful of modules in the Content Commons have been converted to Braille-Ready Format (.brf) files. These files can be downloaded and used to create Braille versions of the content without any additional translation. If this option is available, a "Download as Braille" link will appear at the end of the page.

Please let us know if you need any assistance with Braille versions of Connexions content, or if you have already translated Connexions materials and would like to share those translations with the community.

5 Feedback

Connexions is committed to working with all users to ensure that they have access to materials in our Content Commons. As assistive technologies and conventions continue to evolve, we encourage users with disabilities to contact us and tell us what we are doing right and what we might do better in the future.

Suggestions for Content
For problems involving the module content, please contact the author of that module using the link provided at the bottom of each page. Examples of content issues include:

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[2]http://www.w3.org/Math
[3]http://www.dessci.com/en/products/mathplayer/
[4]http://www.mozilla.org/projects/mathml/fonts/#1.8

- Missing alt text for images
- Requests for video transcripts or captions
- Suggestions for table markup, including table summaries, row headers, and column headers

Suggestions for Site Features
For problems with or suggestions for the website, please contact Connexions at cnx@cnx.org[5] . Examples of site issues include:

- Requests for new features
- Problems with site navigation
- Reports of technical difficulties
- Suggestions for ways to make accessibility easier for authors

Glossary

Definition 1: Module
A module is the basic building block of a Connexions course, textbook, or other type of collection. You can think of it as a small knowledge chunk that contains text and images that address a single topic or a specific aspect of a topic. The author determines the size of a module. To a student or reader viewing a course or collection, a module is simply a web page in the collection. Modules allow readers to follow the information path arranged by the author or instructor or to branch off and discover their own path. To an instructor putting a course together, having topics in different modules allows easy selection and arrangement of the information. An instructor can include existing modules from other courses or other academic disciplines that are important to the presentation of the course subject.

Definition 2: Collection
A collection (often referred to as a course) is a group of modules arranged in a specific order and labeled by the author, editor or instructor building the collection. A collection can be a course, textbook, report, survey, journal, etc. In each module, the collection builder can add links to supplemental, prerequisite, or example material to help the students understand the material.

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