

ACT@PSU Quick Start Guide

ACT@PSU Quick Start Guide

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AFFORDABLE COURSE TRANSFORMATION: THE PENNSYLVANIA
STATE UNIVERSITY



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Introduction

This short book is meant as a first step for all Penn State ACT (Affordable Course Transformation) faculty participants and is a very broad introduction to OER (Open Educational Resources) and Pressbooks. Please note the [Pressbooks User Guide](#) is an excellent resource for details on all aspects of Pressbooks.

Adding Content to Your Pressbook

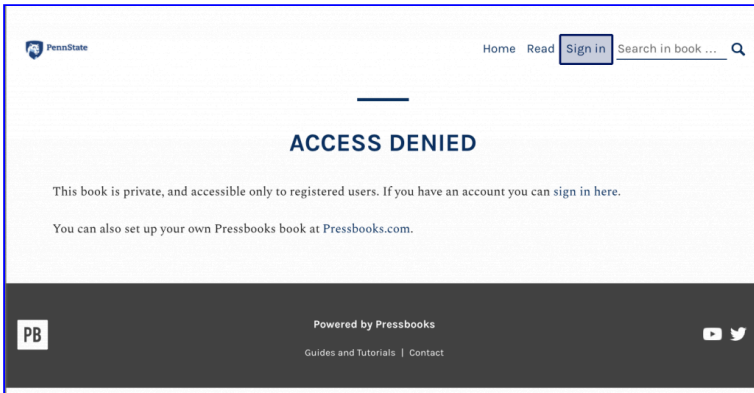
First Things First

To log into Pressbooks, paste the URL of your book into the address field of your browser, for example: <https://psu.pb.unizin.org/yourbookhere/>

This way [you will log into the PSU instance of Pressbooks](#).

If you try to log in to the [Pressbooks Website](#) rather than [Penn State's instance of Pressbooks](#), you won't have access to your book.

Click on the Sign In button in the upper right which will take you to the Pressbooks login.



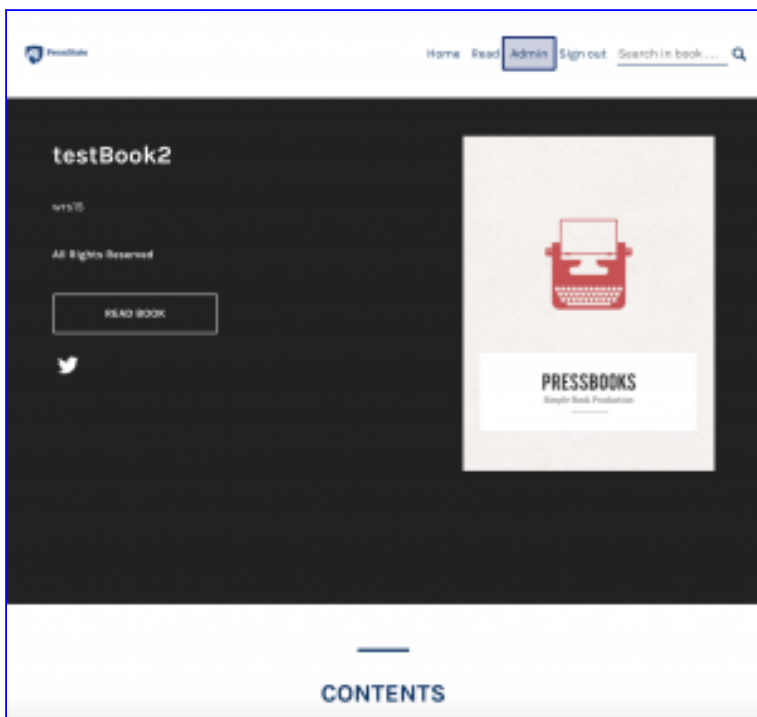
Sign in button



Pressbooks login page

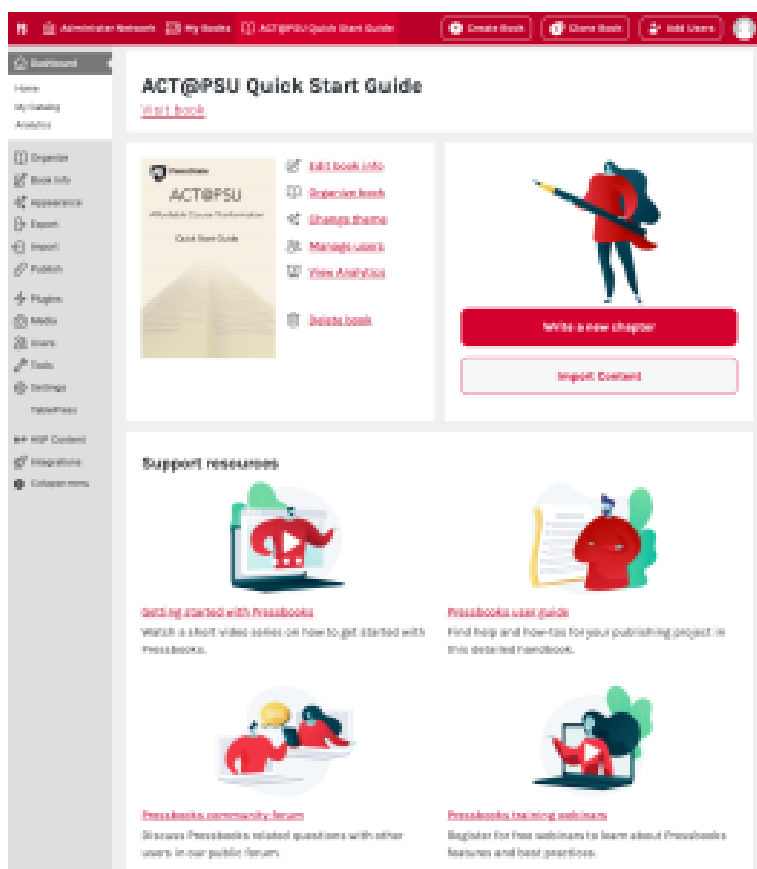
Login and you will be taken to your book's Home page.

From the Home page, click on the Admin link in the upper right which takes you to your book's Dashboard.



Your book's home page

From the Dashboard, you can access a user's most frequent tasks, including creating a new book, cloning a book, editing your book's information, organizing chapters, managing book users, and more.



Dashboard

Below we will discuss how to use the Organize page.

Organize

The Organize page is a one-stop shop for all your content structure needs which includes adding, deleting and rearranging:

- parts
- chapters
- front matter (introductions, acknowledgements, etc)
- back matter (appendices, glossary, index)

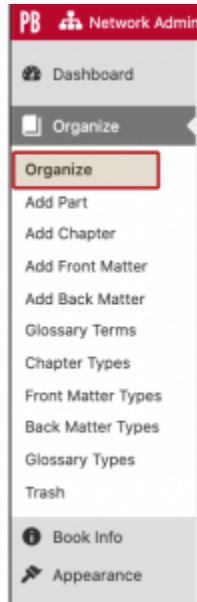
Paradigm Shift

Traditionally when you think of a book, most think in terms of chapters and pages. Pressbooks thinks in terms of Parts and Chapters. For inner peace and harmony, repeat:

- Parts = chapters
- Chapters = pages

How to get to the Organize page

Click on Organize near the top of the Left Sidebar Menu.

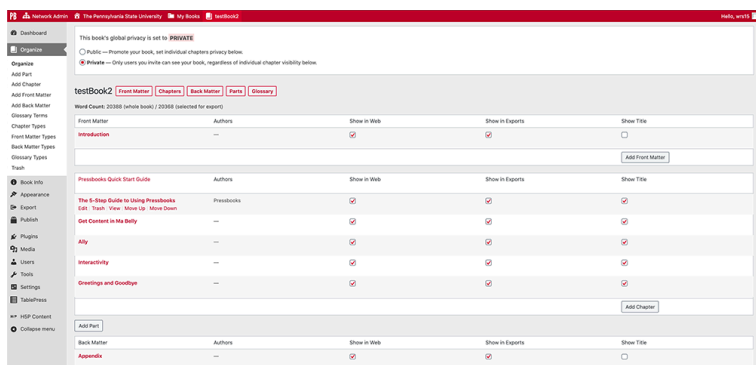


How to get to the Organize page

The Organize page

[The Organize page](#) gives you an overview of your entire book and is an easy way to access and then edit all of your book's Parts, Chapters and Front and Back Matter.

This is also where you can set your book to be “Private” or “Public” at the top of the page.



Organize page is where you manage your content

Hovering over Parts in the left column displays options of:

- Edit: takes you to the Editor
- Trash: deletes the Part; but the chapters from that Part will now appear at the end of the 1st Part. **NOTE: there is no warning... no “Are you sure?” to confirm. However, the Part will be moved to the Trash, where you can Restore it for up to 30 days.**
- View: takes you to what the Part will look like viewed on the web

Hovering over Chapters in the left column displays options of:

- Edit: takes you to the Editor
- Trash: deletes the chapter. **NOTE: there is no warning... no “Are you sure?” to confirm. However, the chapter will be moved to the Trash, where you can Restore it for up to 30 days.**
- View: takes you to what the chapter will look like on the web
- Move Up/Move Down: rearranges the chapter

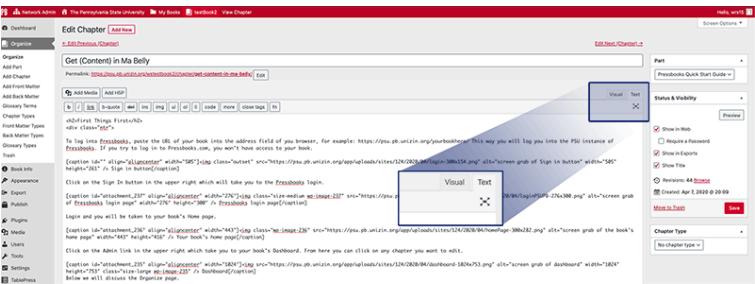
While clicking on the trash is unforgiving, there is a 30 day grace period.

Adding Content

Whether you're adding content to chapters by entering directly via Pressbooks' UI, cut & pasting from documents or importing from a website or document, the majority of your time will be spent in the Editor.

The Editor

Previously we mentioned a couple different ways to enter the Editor. Via the Organize page you can hover over a chapter and click Edit, or you can go to the top of a chapter/page and click the Edit box. Both methods take you to the Editor where you will either be in the Visual (WYSIWYG) editor or the Text editor (HTML). You can switch between the two via the tabs on the right.



Visual and Text tabs

If you can create Word docs, you can use the Visual editor which has an interface similar to popular text-editing environments. If you've worked in HTML, then you'll be comfortable in the Text editor.

Save

Click the red Save button in the right panel when you are done editing to save your changes to your chapter. You can then view your changes by clicking the View Chapter link in the red bar at the top.

Save often! You can always revert back to a previous version: Note the Revisions area at the bottom of the editor.

Tips & Tricks for the Editor

Attribution Information

- When you find an openly licensed image that you want to use, **make sure to record the TASL information (title, author, source url, license)**. It is so much easier to capture this information when you first find the image as opposed to later when you are ready to publish and have to re-find the image to access the url.

Strange Text Editor interface quirk

- If the Editor “jumps/scrolls” to a different part of your chapter’s content leaving you lost while in the Text Editor, holding down shift and hitting the Up Arrow cursor key on your keyboard will return you. This happens mostly after using

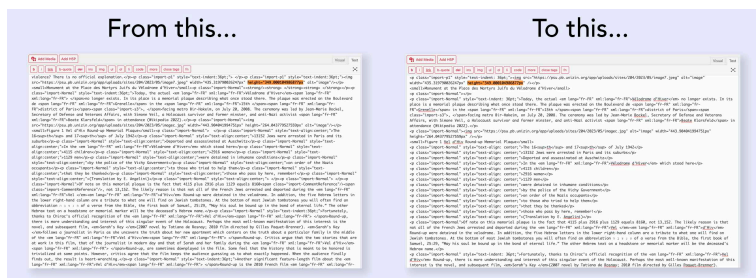
the Return key.

Triple clicking

- Triple click to select an entire paragraph before you switch from the Text editor to the Visual editor and vice versa. This gives you an easy way to locate your cursor position in the editing field.

Importing from website yields html mass

- Often importing gives you all the html in one bunch/mass, but if you go into the Visual editor and then back to the Text editor, the html will be structured/formatted for easier editing.



Unformatted HTML versus formatted HTML

Multi tabs

- Use 1 browser tab for your Editor, 1 tab for View Chapter. Then after a Save, a screen refresh is all you need to see your edits on the View Chapter tab. You can even use a separate tab for

Media Library.

Visual tab erases html

- Be aware that the Visual editor will erase certain HTML that you've added especially for lists and additions.

Import

Importing is the preferred method of adding content, because the process will retain the formatting styles of the source plus it will import imagery and its ALT text into the Media Library. We want our imagery in our Library so we don't have to rely on external websites. You can import from the different types of resources listed here:

- EPUB
- Word doc
- OpenOffice
- Pressbooks/Wordpress
- Webpage

The Import command can be found in the Left Side Panel/Tools/Import.

Cut & Paste

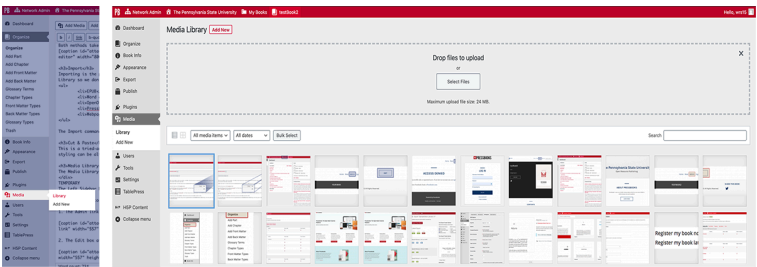
This is a tried-and-true method of getting content into your Pressbook chapters when importing won't work. You can cut & paste from Word docs, PDFs, Excel... just about anything, but

formatting and styling can be altered or ignored plus imagery won't be placed in your Media Library.

Media Library

[The Media Library](#) can be found in the Left Side Panel/Media/Library and is where you add all imagery and audio files that you want to use in your book. Click on the Add Media button at the top left of the Editor to bring imagery into your chapter.

Note: Pressbooks recommends using Youtube or Vimeo for videos by either linking to them or embedding them in your chapters.



Media Library

Accessibility

A11y^{*} –

All webpages must have appropriate accommodations for individuals with disabilities. For a thorough understanding of accessibility, [use Penn State's Accessibility site](#). There is also [a companion Google doc version](#) of this information. Also there is a helpful [video series on YouTube from the ADA National Network](#) with short 2-5 minute videos on keyboard focus, forms, using color, alternative text etc.

We will discuss the following accommodations here.

- WAVE
- ALT text
- Captions, video
- Links
- Headings
- Tables

WAVE

WebAIM is a non-profit organization based at Utah State University in Logan, Utah. Their [WAVE extension for Chrome and Firefox](#) is an extremely valuable and easy way to check a webpage's accessibility (or **A11y**). So while this is not an accommodation that you have to provide, we mention it here to help you review your chapters for accessibility.

Links

All links must open in the same browser tab that is being used. This makes it easy for the user to utilize the browser's Back button to return them to the place they were on the previous page. Links also must describe the link's destination rather than using "Click here" or "Link" or using the URL of the destination page.

When importing or cut & pasting content into a Pressbook, links may contain html that disables the Back button. If this happens, search for the following html in the anchor tag and delete it: **target="_blank" rel="noopener noreferrer".**

```
<a href="https://accessibility.psu.edu/linktext/"  
target="_blank" rel="noopener noreferrer">Penn  
State's Accessibility page on links</a>
```

For more information go to [Penn State's Accessibility page on links](https://accessibility.psu.edu/linktext/).

Image ALT text

ALT text is a description of an image so that screen readers can tell users with visual impairments the contents of an image. ALT text can be added to an image via:

- the Media Library (upon adding an image, select the image, add text to the Alternative Text field)
- the Visual tab editor (select image, click on the pencil icon, add text to the Alternative Text field, click Update button in lower right)
- the Text tab editor via html (alt="description goes here")

ALT must be limited to around 125 CHARACTERS, typically 10 to 20

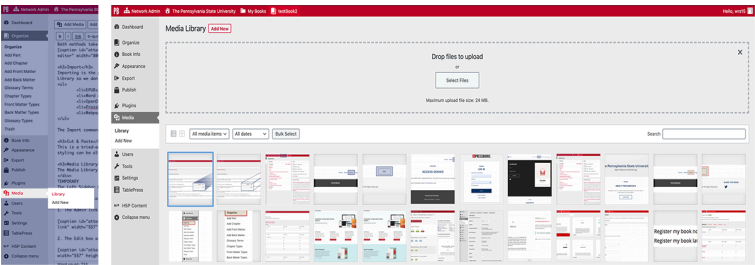
words. Many figures, especially charts, graphs and diagrams cannot be described in 125 characters, in which case you will need to use Long Descriptions which can be placed either under the image or at the bottom of the page and linked to via anchors. [An example of long descriptions from an ACT Round 3 participant can be found on this page](#), and a long description via the HTML details and summary tags is shown below the image.

HTML for the Long Description below the image

```
<details style="border: 1px solid; padding: 1em;"><summary>Long Description</summary>
```

A screen grab of the Pressbooks Media Library. The Left Side Panel is darkened to highlight only Media / Library. A grid of images is shown that are contained in the library. Above the grid of images is an area where you can drop files from your computer to add to the library along with a button which allows you to select images from you computer.

```
</details>
```



Media Library

Long Description

Title: A screen grab of the Pressbooks Media Library.

The Left Side Panel is darkened to highlight only Media / Library. A grid of images is shown that are contained in the library. Above the grid of images is an area where you can drop files from your computer to add to the library along with a button which allows you to select images from you computer.

For more information go to [Penn State's Accessibility page on ALT](#).

Captions, video

All videos must have captions.

For more information go to [Penn State's Accessibility page on captioning](#).

NOTE: videos should reside on external repositories like YouTube or Vimeo; file sizes prohibit uploading them to the Media Library.

Headings

Headings must be nested correctly and used sequentially. Pressbooks uses H1's for the book's title and the chapter's title, therefore start with H2 in your content. You can have many headings of H2, H3 and so on as long as they're nested correctly i.e. don't go from H2 to H4 or H5.

For more information go to [Penn State's Accessibility page on headings](#).

Tables

Tables must have a caption and header tags with scope attributes for the 1st row and 1st column. Tables can be added to a chapter via the Visual tab's Table tool similar to a Word doc. The header tags, <th></th>, and scope attributes, scope="col" or scope="row", can be added manually via the Text tab editor or by selecting the table in the Visual tab editor, selecting the table button and choosing Table properties. However, [TablePress tables](#) can be created via the Left Sidebar Panel which create the appropriate tags and attributes automatically.

For more information go to [Penn State's Accessibility page on tables](#).

Accessible HTML for a table

```
<table style="width: 100%" summary="An example of
accessible html for a table"><caption>Example Table
HTML</caption>
<tbody>
<tr>
<th scope="col">Category 1</th>
<th scope="col">Category 2</th>
<th scope="col">Category 3</th>
</tr>
<tr>
<th scope="row">column 1 data</th>
<td>column 2 data</td>
<td>column 3 data</td>
</tr>
<tr>
```

```
<th scope="row">column 1 data</th>
<td>column 2 data</td>
<td>column 3 data</td>
</tr>
</tbody>
</table>
```

The HTML above creates the table below

Example Table HTML		
Category 1	Category 2	Category 3
column 1 data	column 2 data	column 3 data
column 1 data	column 2 data	column 3 data

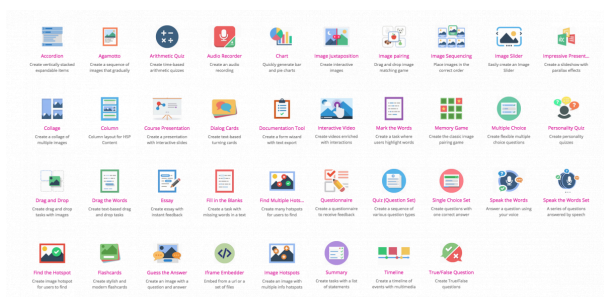
* **A11y** is a common abbreviation for the word “accessibility”. The 11 stands for the number of letters it saves when typing. [Return](#)

Interactivity

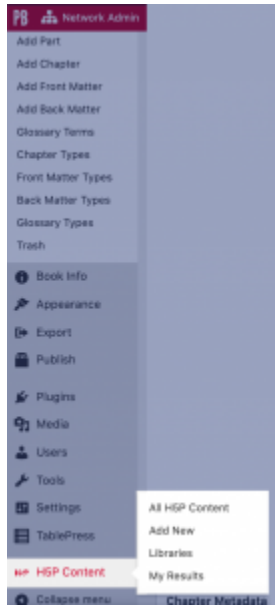
H5P

H5P is a service that allows interactive assessments and activities to be added to your Pressbook. [A complete list of examples](#) demonstrates the 43 different types. You can click on these thumbnails to see examples of the module. H5P content can be created in and added to your Pressbook via the Left Sidebar Panel.

Please note: not all modules are accessible. [This list denotes which are accessible.](#)



H5P's 40+
modules



Left side panel location of H5P

Penn State's Immersive 360 videos

Penn State's IMEX lab can assist in creating and finding 360/180 videos to immerse your students in far away realms, even inner and outer space.

[IMEX 360 videos](#)

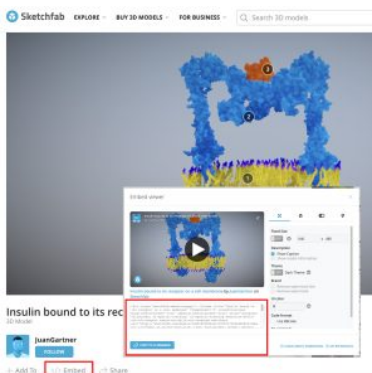
3D Content

Sketchfab

3D displays are an engaging way to present information and can be accomplished in Pressbooks by embedding content from [Sketchfab](#), a repository of 3D files some of which contain excellent animated content. [Show a beating heart](#). Get up close to [a trumpeter swan](#) from the [Natural History Museum Vienna](#). Get microscopic by [exploring annotated insulin](#).

Rotate the 3D model. Zoom in and out. Go full screen for an even greater viewing effect.

Add these 3D visualizations by copying the embed code and pasting it into the Text editor.



Sketchfab's interface for acquiring an embed code.

Examples



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

[Insulin bound to its receptor on a cell membrane](#)

by [JuanGartner](#)

on [Sketchfab](#)



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

[3d Animated Realistic Human Heart – V2.0](#)

by [Anatomy by Doctor Jana](#)

on [Sketchfab](#)



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>


[GCN5 Bromodomain + H4K16ac peptide](#)

by [vaishnavi1](#)

on [Sketchfab](#)




One or more interactive elements has been excluded

 from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

Human Skeleton

by [Versal](#)


on [Sketchfab](#)

 One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

Liopleurodon Ferox Swim Cycle

by [Kyan0s](#)

on [Sketchfab](#)

 One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

Styracosaurus A. (Rigged / animated v.)

by [Kyan0s](#)

on [Sketchfab](#)



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

Mammuthus Primigenius Skeleton

by [Gabriel Casamasso](#)

on [Sketchfab](#)

360 Videos

You can place 360 videos in your chapters which allow the viewer to rotate the view to any direction they desire. [Youtube](#) has many 360 videos. Use their filter to help locate them and then just paste the URL into the Visual editor. If you create your own 360 video, upload it to Youtube and then add the Youtube URL to your chapter.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584#oembed-1>

H5P

H5P has [the Virtual Tour \(360\) module](#) that allows you to import 360 videos and add annotations. Please view the example below.



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.pb.unizin.org/quickstartguide/?p=584>

Greetings and Goodbyes

Front and back matter are separate Parts of your book and can be added from the Organize page. Whereas Parts and Chapters of your book can be deleted, the Front Matter Part and Back Matter Part cannot be deleted. Individual front and back matter chapters *can* be deleted, such as an Introduction or Preface Front Matter or an Appendix or Afterword back matter. You can see all the different options for front and back matter by clicking Front Matter Types and/or Back Matter Types in the top section of the Left Sidebar Panel.

Front Matter

Front matter comes before the main body of your book and can include title page, preface/introduction, acknowledgements, dedications, table of contents, etc.

Three main types are listed below, however you may use more.

Auto generated ToC

Good news: Pressbooks generates your Table of Contents automatically and is displayed at the bottom of your home page and via a dropdown menu labeled “Contents” in the upper left of every chapter/page of your book.

Acknowledgements

We use this page to list all OER sources that you may be using in your book. You can also give credit to contributing authors, editors, proofreaders, project personnel, etc.

Introduction

This welcomes the reader and allows you to talk about the content of the book and its purposes and goals.

Back Matter

Back matter can consist of appendices, an index, glossary, about the author, afterword, etc. Three main types are listed here.

Glossary

While the glossary is not auto-generated like the ToC, it is almost as ingenious. Create a back matter chapter from the Organize page. Select “Glossary” from the Back Matter Type menu and click Create. Leave the content field blank.

To add terms/words to the glossary, in the Visual editor, select a word, click on the GL (glossary) icon which will bring up a window into which you can add the definition of the term. View (not edit) your glossary page and the term will be there with its definition. You can delete a glossary term via the Glossary Terms link in the upper portion of the Left Sidebar Panel.

Appendices

Charts, lists, graphs and spreadsheets are all typical items that can be an appendix page.

Index (no easy creation)

A book's Index typically lists main concepts, items, people, etc. along with page numbers of where they appear in the book.

Unlike the Table of Contents and Glossary, there is no way of auto-generating an index for your book. You would have to maintain a list that could then be added to your book.

Licensing

WADE SHUMAKER AND BRYAN MCGEARY

NOTE: This page is meant to provide an overall description of licensing. For more precise, thorough information please visit the [Penn State Office of Scholarly Communications and Copyright](#).

Creative Commons Licensing

As soon as you write a poem, draw a picture or post to your blog, you own the copyright to those creations, and no one can legally use them without your permission or license. But what do you *really* know about legally licensing your work to someone? Luckily there is an easy way that is legally binding; it's called [Creative Commons \(CC\) licensing](#). When you publish your work with a CC license, you retain the copyright but allow others to use it by varying degrees of control if they give credit to you, the author; which means someone can use your work without having to contact you to negotiate a license.

The **OER** movement relies heavily on CC licensing which is what you will be using to create your textbook if you are adapting content from other published resources. Specifically you will be looking for resources that have CC BY or CC BY-NC licenses.

The following is remixed from [the Creative Commons website](#):

Before Licensing

Before you apply a CC license or CC0 to your work, there are some important things to consider:

The licenses and CC0 cannot be revoked. This means once you apply a CC license to your material, anyone who receives it may rely on that license for as long as the material is protected by copyright, even if you later stop distributing it.

You must own or control copyright in the work. Only the copyright holder or someone with express permission from the copyright holder can apply a CC license or CC0 to a copyrighted work. If you created a work in the scope of your job, you may not be the holder of the copyright.

CC BY: This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. Recommended for maximum dissemination and use of licensed materials.

CC BY-NC (non-commercial): This license lets others remix, tweak, and build upon your work non-commercially, and although their new

works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.

These 2 licenses are the most open and accommodating of [the full suite of CC licenses](#). The remaining CC licenses all require that you give credit to the author but vary on what else you can do:

- **CC BY-SA** (share alike): derivative works must be shared with this same CC license
- **CC BY-ND** (no derivatives): you cannot alter any of this content
- **CC BY-NC-SA** (non-commercial, share alike): derivative works shared with same license and be non-commercial
- **CC BY-NC-ND** (non-commercial, no derivatives): must be non-commercial and unchanged/unedited

[Appendix C has links to all the individual CC licenses.](#)

Public Domain

Determining whether or not something is in the public domain can be challenging because of changes made to copyright law over time. This guide covers the basics but not necessarily every potential scenario. Let's start off with the easy part. As of 2020, copyright

has expired for all works published before 1925. This means that if the work was published in the United States before January 1, 1925, you can use it freely in the United States without seeking permission. Copyright protection always expires at the end of the calendar year, so in 2021, works published before January 1, 1926 will enter the public domain, and so on. The copyright for works that were published after 1977 lasts for 70 years after the death of the author (if solely authored) or 70 years after the death of the last surviving author (if created by multiple authors). For works published prior to 1978, the copyright term lasts 95 years from the initial date of publication.

However, creators used to be required to file a renewal with the U.S. Copyright Office when the initial copyright term expired. The requirement for filing renewals ended in 1964, so determining the copyright status of works published between 1925 and 1964 is a bit trickier. Many works published before 1964 have fallen into the public domain because the copyright holder failed to file the copyright renewal on time. This means that in order to definitively determine the copyright status of works published from January 1, 1925 to December 31, 1963, you should check the records of the Copyright Office to see if a renewal was filed. If the renewal wasn't filed, it's in the public domain. If it was renewed, then the 95-year copyright term applies.

Requirements about publishing with an appropriate copyright notice and registering copyrights have changed over the years, and this can potentially add some more complications that we won't delve into here. We recommend that you check with the [Penn State Office of Scholarly Communications & Copyright](#) if you have questions about the copyright status of a particular work.

- [Wikipedia page on Public Domain](#)
- [CC0 Public Domain: Creative Commons public domain.](#)

Images

All images that you use in your book must give credit to the owner in the caption, preferably in the TASL (pronounced “tassle”) format:

- Title
- Author
- Source link
- License link

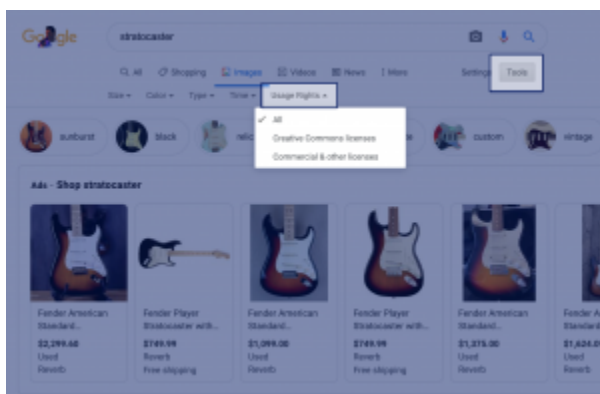
Examples

- [Here's an excellent example of how to attribute images.](#)
- [The Creative Commons site gives a good example too.](#)
- [This ACT Round 2 page gives more examples.](#)
- [Another Round 2 ACT textbook.](#)

Searching for OER Images

Major search engines (Bing, Yahoo, Google) have filters to search for openly licensed images. [Let's look at Google.](#)

- Search on Google
- Click on Images
- Click on Tools
- Select Usage Rights
- Select the “Creative Commons Licenses” option



Google's Usage Rights search options

Tips and Tricks

One Stop Shopping

Penn State Library's Media Commons has [an excellent resource page](#) of many different types of content:

- Audio
- Images
- Video
- VR/AR

[The Creative Commons does as well.](#)

Openly Licensed Images

The following sites have free imagery you can use without attribution, but they all state attribution is appreciated.

1. [Unsplash](#); [Unsplash license](#)
2. [Pexels](#); [Pexels license](#)
3. [Pixabay](#); [Pixabay license](#)
4. [Pxfuel](#)
5. [rawpixel](#)
6. [The Noun Project](#) (Icon library: CC BY attribution required)

[Appendix F: Open Libraries](#) contains a larger list of OER licensed image repositories.

Icons

1. [Open Peeps](#)
2. [Bio Icons](#)
3. [Weather Icons](#)
4. [Emojis](#)
5. [Health Icons](#)

Attribution Information

When you find an openly licensed image that you want to use, **make sure to record the TASL information (title, author, source url, license)**. It is so much easier to capture this information when you first find the image as opposed to later when you are ready to publish and have to re-find the image to access the url.

Wikipedia, Wikimedia

The vast majority of images on these sites are CC images that you can use. There's even TASL information that you can cut & paste into your book.

Google

You can right click on an image and select “Search Google for image” and then use the above steps to find open source imagery.

Appendix A: H5P Periodic Table



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://psu.ph.unizin.org/quickstartguide/?p=6>

H5P Periodic Table. By Stuart R Mealar. [Source](#) [CC BY-NC-ND](#)

Appendix B: Math and Chemistry Equations

Pressbooks uses the [MathJax display engine](#) to render accessible equations. Both LaTeX and MathML can be used. Right/Control click on any of the quadratic equations below to see the accessible content.

You can create LaTeX, MathML and chemistry equations by using these editors:

- [Wiris Equation Editor](#)
- [CodeCogs Equation editor](#)
- [Host Math Equation Editor](#)

[Equatio](#) and the [Mathpix Snip tool](#) are extremely useful ways to screen grab equations and turn them into LaTeX. They even work with hand written equations.

LaTeX

For a Pressbook, your LaTeX equation must be wrapped in shortcode:

LaTeXeqn

or

`\[LaTeX eqn\]`

or

`$$ LaTeX eqn $$`.

However, if you want to create PDF versions of your book for your readers to download, use:

LaTeXeqn

For this reason, we suggest only using *LaTeXeqn* for your LaTeX equations. This way if you ever decide to make PDF files available for your readers, you will not have to edit your chapters.

For PDF Export

If you want to export a PDF of your Pressbook with LaTeX content:

- Use Digital PDF export
- LaTeX in image captions does not render; put caption content in the chapter's text
- Must use *equation*, not $\$$ or $\backslash [\quad \backslash]$
- Math ML does not render

Examples

Inline LaTeX

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

This is an inline example $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ where the equation appears in the sentence.

Sometimes equations can render so small, they're difficult to read. You can solve this by using $\backslash large$ or $\backslash Large$ or $\backslash LARGE$ at the the beginning of the LaTeX equation.

$\backslash large$: This is an inline example

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where the equation is in the sentence.

\Large: This is an inline example

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where the equation is in the sentence.

\LARGE: This is an inline example

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where the equation is in the sentence.

[This site lists even more sizes.](#)

Display mode LaTeX

Display mode renders an equation centered on a separate line.

`\[x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}\]`

or

`$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$`

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

The following HTML creates the aligned equations below.

`\[\large\begin{align*}`

`(x - 2) (x + 1) (x + 3) &= (x^2 - x - 2) (x + 3) \\\`

`&= (x^2 - x - 2) (x) + (x^2 - x - 2) (3) \\\`

`&= x^3 - x^2 - 2x + 3x^2 - 3x - 6 \\\`


```

& = \boxed{x^3 + 2x^2 - 5x - 6}
\end{align*}\]

\[\large\begin{align*}
(x-2)(x+1)(x+3) &= (x^2-x-2)(x+3) \\
&= (x^2-x-2)(x) + (x^2-x-2)(3) \\
&= x^3-x^2-2x+3x^2-3x-6 \\
&= \boxed{x^3+2x^2-5x-6}
\end{align*}\]

```

NOTE:

- If you create a page and only use the display mode latex shortcode or \$\$, it will not render without an empty **Formula does not parse** somewhere on the page.
- Currently for PDF exports, LaTeX must be wrapped in styled p tags to create display mode equations.

◦

`<p style="text-align: center;">[latex]LaTeX eqn[/latex]</p>`

Figure 1: Screen grab of HTML p tags with centered LaTeX equation.

LaTeXEqn

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- A slight shortcut is to do this in the Visual editor by highlighting a LaTeX equation and pressing the “Align center” button in the first row of the toolbar. There’s also a keyboard shortcut for this which is revealed when hovering over that button.

LaTeX Symbols: The Basics

description	command	output
addition	+	+
subtraction	–	–
plus or minus	\pm	\pm
multiplication (times)	\times	\times
multiplication (dot)	\cdot	\cdot
division symbol	\div	\div
division (slash)	/	/
circle plus	\oplus	\oplus
circle times	\otimes	\otimes
equal	=	=
not equal	\neq	\neq
less than		
greater than	>	>
less than or equal to	\leq	\leq
greater than or equal to	\geq	\geq
approximately equal to	\approx	\approx
infinity	\infty	∞
dots	1,2,3,\ldots	1, 2, 3, . . .
dots	1+2+3+\cdots	1 + 2 + 3 + á á á
fraction	\frac{a}{b}	$\frac{a}{b}$
square root	\sqrt{x}	\sqrt{x}
nth root	\sqrt[n]{x}	$\sqrt[n]{x}$

description	command	output
exponentiation	<code>a^b</code>	a^b
subscript	<code>a_b</code>	a_b
absolute value	<code> x </code>	$ x $
natural log	<code>\ln(x)</code>	$\ln(x)$
logarithms	<code>\log_{a}b</code>	$\log_a b$
exponential function	<code>e^x=\exp(x)</code> <code>ex</code>	$e^x = \exp(x)$
degree	<code>\deg(f)</code>	$\deg(f)$
Example	<code>x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}</code>	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Table of the most commonly used LaTeX commands.

MathML

MathML can be used in Pressbooks, but it will only render in display/block mode. If you need inline display, currently you will need to use LaTeX.

Short code is not needed for MathML. Figure 2 is a screen grab which was the only way to display the MathML without it rendering.

```

<math xmlns="http://www.w3.org/1998/Math/MathML"><mi>x</mi><mo>=</mo><mfrac>
<row><mo>-</mo><mi>b</mi><mo>±</mo><msqrt><msup><mi>b</mi><mn>2</mn></msup>
<mo>-</mo><mn>4</mn><mi>a</mi><mi>c</mi></msqrt></row><row><mn>2</mn><mi>a</mi>
</row></mfrac></math>

```

Figure 2 Screen grab of MathML

The above MathML renders as:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

By adding `display="block"` to the math tag and adding an `mstyle` tag with `fontsize='2 pt'`...

```
<math display="block"><mstyle fontsize='2 pt'><mi>x</mi><mo>=</mo><mfrac>
<mrow><mo>-</mo><mi>b</mi><mo>±</mo><msqrt><msup><mi>b</mi><mn>2</mn>
</msup><mo>-</mo><mn>4</mn><mi>a</mi><mi>c</mi></msqrt></mrow><mrow>
<mn>2</mn><mi>a</mi></mrow></mfrac></mstyle></math>
```

Figure 3 Display options added to MathML

...you get:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

If you use `fontsize='2.5 pt'`, you get:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Note you don't need the `xmlns="http://www.w3.org/1998/Math/MathML"` in the math tag as is shown in Figure 2; Pressbooks does this. You just need the math and `/math` tags.

Below are helpful resources for MathML.

[Beginner's Guide to MathML by Daniel Scully](#)

[Wolfram MathML examples](#)

[MathML Quick Guide](#)

Appendix C: Creative Commons Licenses Links

Links to Creative Commons' licenses are below which makes it easy to cut & paste into image captions. The first set of 7 are the most recent 4.0 versions. Below that are previous (3.0, 2.0 and 1.0) versions.

[This page explains the difference between the licenses.](#)

[CC0 4.0](#)

[CC BY 4.0](#)

[CC BY-NC 4.0](#)

[CC BY-SA 4.0](#)

[CC BY-ND 4.0](#)

[CC BY-NC-SA 4.0](#)

[CC BY-NC-ND 4.0](#)

[CC0 3.0](#)

[CC BY 3.0](#)

[CC BY-NC 3.0](#)

[CC BY-SA 3.0](#)

[CC BY-ND 3.0](#)

[CC BY-NC-SA 3.0](#)

[CC BY-NC-ND 3.0](#)

[CC0 2.0](#)

[CC BY 2.0](#)

[CC BY-NC 2.0](#)

[CC BY-SA 2.0](#)

[CC BY-ND 2.0](#)

[CC BY-NC-SA 2.0](#)

[CC BY-NC-ND 2.0](#)

[CC0 1.0](#)

[CC BY 1.0](#)

[CC BY-NC 1.0](#)

[CC BY-SA 1.0](#)

[CC BY-ND 1.0](#)

[CC BY-NC-SA 1.0](#)

[CC BY-NC-ND 1.0](#)

[Here's an excellent example of how to attribute images.](#)

[CC0 Public Domain](#): Free for personal and commercial use; no attribution required.

[Wikipedia page on Public Domain](#)

Appendix D: Adding a Google Form for Adopting / Adapting

Adoption and Adaption

Creating a textbook gives an author the opportunity to not only secure their approach to teaching a subject which will last throughout the years, but also to influence others, which occurs when the book is read. The book can also influence other teachers who may decide to use it in their class. This can occur in different ways. They could use the entire book as the text for their class, which is adopting the book; or they could use part of the book, which is adapting. In the OER world, adapting usually means an author will use portions of your text for a book they are creating. Both of these actions add to your book's credibility similar to a paper being cited by an author. Keeping track of these adoptions and adaptations helps build your book's reputation, which is why we provide a way for this.

Adoption and adaption are covered thoroughly in [The Rebus Guide to Publishing Open Textbooks \(So Far\)](#).

- [Adoption](#)
- [Adaption](#)

The University of Wisconsin created [a great tutorial on adding a Google Form to your Pressbook](#) like the example below which is based on [a Rebus adoption/adaption form](#). [This link takes you to an alternate Rebus example](#).



One or more interactive elements has been excluded
from this version of the text. You can view them online
here: <https://psu.pb.unizin.org/quickstartguide/?p=268>

Appendix E: BCcampus' Video Tutorials

Below you will find excellent 2-4 minute “how to” video tutorials from BCcampus for many of Pressbooks’ operations.

- [Understanding the Pressbooks Dashboard](#)
- [How to Add, Organize, and Delete Parts and Chapters](#)
- [How to Copy and Paste Content into Pressbooks](#)
- [How to Search and Import Pressbooks Content](#)
- [How to Import a Web Page](#)
- [How to Import a Word Document](#)
- [How to Add ODT Files to Your Book](#)
- [How to Add EPUB Files to Your Book](#)
- [How to Add and Format Images](#)
- [How to Add Media Attributions](#)
- [How to Provide Attribution](#)
- [How to Make Images Accessible](#)
- [How to Insert External Links](#)
- [How to Insert Internal Links](#)
- [How to Insert Internal Links with Anchors](#)
- [How to Create Tables](#)
- [How to Clone a Book](#)
- [How to Import a Pressbooks XML File](#)
- [How to Hide Chapters from the Webbook and/or Export Files](#)
- [How to Create a Glossary](#)
- [How to Change Privacy Settings of the Webbook](#)
- [How to Export Files](#)
- [Select a Theme](#)
- [Manage Theme Options](#)
- [Use Custom Styles](#)
- [Fill Out the Book Info Page](#)
- [Automatic Pages and Content Generated by Pressbooks](#)

For a deeper look at Pressbooks, here are links to the Pressbooks YouTube channel and a 1+ hour tour of the Pressbooks interface by Steel Wagstaff, Educational Product Manager for Pressbooks.

- [Pressbooks YouTube channel](#)
- [Pressbooks/Steel Wagstaff](#)

Appendix F: Open Libraries

Various open collections from maps and images to 3D objects and weather. Search and explore these free resources.

[Penn State Media Commons Free Media Library](#)

[Openverse](#) (Formerly Creative Commons Search: images & audio)

[Getty Royalty Free Images](#)

[Smithsonian Open Access](#)

[Smithsonian Learning Lab site](#)

[David Rumsey Map Collection](#)

[Library of Congress](#) Early presidential collections.

[The \(Amsterdam\) Rijksmuseum](#) 709,000 works of art available online.

[National Weather Service imagery](#) From floods and hurricanes to tornados and snow.

[Thingiverse](#) 3D objects.

[Tinkercad](#) Create 3D objects.

[Wikimedia](#)

[Unsplash](#) Photos

[Pexels](#) Photos

[Pixabay](#) Photos

[Flickr Commons](#) Photos

[Nappy](#) Beautiful photos of Black and Brown people, for free.

[Broadly Gender Spectrum Collection](#) Stock photos beyond the binary.

[Disability Inclusive Stock Photography](#)

[Piqsels](#) Stunning photos released under public domain license

[The Noun Project](#) Icons and Photos For Everything

[JING.FM](#) Free stock cliparts & silhouettes shared by users for free download

[Public Domain Pictures](#)

[Storyset/Freepik](#) Animated vector files

[Emojis](#)

[Open Peeps](#) A hand-drawn illustration library of people.

[Bio Icons](#)

[Weather Icons](#)

[Health Icons](#)

Textbooks

[Penn State Pressbooks](#)

[Open UMN Textbooks](#)

[OpenStax Subjects](#)

[Open SUNY Textbooks](#)

[LibreTexts](#)

[BC campus OpenEd](#)

[Flat World Knowledge Catalog](#)

Appendix G: AI for OER Accessibility and Higher Education

ChatGPT for Higher Education

[ChatGPT for Higher Education](#) by Rob Rose, University of North Florida.

“ChatGPT in Higher Education explores the positive integration of AI in academia and the ways that it might enhance pedagogy, research, and professional development.”

AI for HTML Accessibility

Tables

In the [Accessibility chapter](#), we discussed how to edit HTML to make a table accessible. This editing gets more time consuming as tables get larger, but AI like ChatGPT can automatically make these edits.

```
Prompt:  Make      the      following      html      table
```

accessible by using scope="col" and scope="row" where appropriate:

```
<table class=" alignncenter" style="border-collapse: collapse; width: 48.4219%; height: 45px;" border="0">
  <caption>Make me accessible</caption>
  <tbody>
    <tr style="height: 15px;">
      <td style="width: 25%; height: 15px;">Category A</td>
      <td style="width: 25%; height: 15px;">Category B</td>
      <td style="width: 25%; height: 15px;">Category C</td>
      <td style="width: 25%; height: 15px;">Category D</td>
    </tr>
    <tr style="height: 15px;">
      <td style="width: 25%; height: 15px;">1</td>
      <td style="width: 25%; height: 15px;">2</td>
      <td style="width: 25%; height: 15px;">3</td>
      <td style="width: 25%; height: 15px;">4</td>
    </tr>
    <tr style="height: 15px;">
      <td style="width: 25%; height: 15px;">5</td>
      <td style="width: 25%; height: 15px;">6</td>
      <td style="width: 25%; height: 15px;">7</td>
      <td style="width: 25%; height: 15px;">8</td>
    </tr>
  </tbody>
```

```
</table>
```

This yields the HTML below which is accessible because of the <th> tags and scope="col"/"row".

```
<table class="aligncenter" style="border-collapse: collapse; width: 60%; height: 45px; border="0">
  <caption>Make Me Accessible</caption>
  <tbody>
    <tr style="height: 15px;">
      <th style="width: 25%; height: 15px;" scope="col">Category A</th>
      <th style="width: 25%; height: 15px;" scope="col">Category B</th>
      <th style="width: 25%; height: 15px;" scope="col">Category C</th>
      <th style="width: 25%; height: 15px;" scope="col">Category D</th>
    </tr>
    <tr style="height: 15px;">
      <th style="width: 25%; height: 15px;" scope="row">1</th>
      <td style="width: 25%; height: 15px;">2</td>
      <td style="width: 25%; height: 15px;">3</td>
      <td style="width: 25%; height: 15px;">4</td>
    </tr>
    <tr style="height: 15px;">
```



```
<th style="width: 25%; height: 15px;"
scope="row">5</th>
<td style="width: 25%; height: 15px;">6</td>
<td style="width: 25%; height: 15px;">7</td>
<td style="width: 25%; height: 15px;">8</td>
</tr>
<tr style="height: 15px;">
<th style="width: 25%; height: 15px;"
scope="row">9</th>
<td style="width: 25%; height: 15px;">10</td>
<td style="width: 25%; height: 15px;">11</td>
<td style="width: 25%; height: 15px;">12</td>
</tr>
</tbody>
</table>
```

We now have this accessible table:

As opposed to this table which is not accessible:

Accessible				Not A11y			
Category A	Category B	Category C	Category D	Category A	Category B	Category C	Category D
1	2	3	4	1	2	3	4
5	6	7	8	5	6	7	8
9	10	11	12	9	10	11	12

Lists

Lists are much easier. Basically you just tell the AI to create an HTML list and you provide the list.

Prompt: Create html for the following list:
peaches
apples
bananas
pears
grapes
strawberries
kiwi

And you get this HTML:

```
<ul>  
<li>peaches</li>  
<li>apples</li>  
<li>bananas</li>  
<li>pears</li>  
<li>grapes</li>  
<li>strawberries</li>  
<li>kiwi</li>  
</ul>
```

...for this list.

- peaches
- apples
- bananas
- pears
- grapes
- strawberries
- kiwi

Nested Lists

Nested lists are a little trickier. Note the prompt difference and the second prompt to get a solution.

Prompt: Create html code for the following list. Nest San Francisco under Los Angeles and nest Washington and Milwaukee under the Braves.

Los Angeles Dodgers
San Francisco Giants
St. Louis Cardinals
Chicago Cubs
New York Mets
Atlanta Braves
Washington Nationals
Milwaukee Brewers
Philadelphia Phillies
Cincinnati Reds

This generated an HTML ordered list that had unordered nested content, so I asked nicely: “please change the nested unordered lists to ordered lists” which gave me the HTML for the following list. (To get the lower case letters, I added a Pressbooks class to the ordered list: `<ol class="legal">`)

HTML

```
<ol class="legal">  
<li>  
Los Angeles Dodgers  
</li>  
<li>San Francisco Giants</li>  
</ol>
```

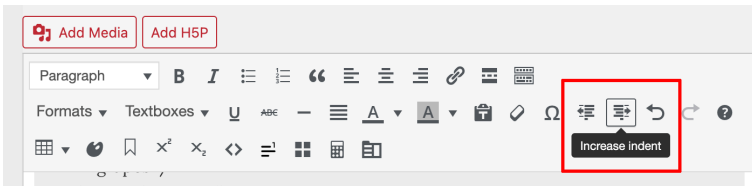
```
</li>
<li>St. Louis Cardinals</li>
<li>Chicago Cubs</li>
<li>New York Mets</li>
<li>
Atlanta Braves
<ol>
<li>Washington Nationals</li>
<li>Milwaukee Brewers</li>
</ol>
</li>
<li>Philadelphia Phillies</li>
<li>Cincinnati Reds</li>
</ol>
```

Final nested list

1. Los Angeles Dodgers
 - a. San Francisco Giants
2. St. Louis Cardinals
3. Chicago Cubs
4. New York Mets
5. Atlanta Braves
 - a. Washington Nationals
 - b. Milwaukee Brewers
6. Philadelphia Phillies

7. Cincinnati Reds

I haven't yet had consistent luck with nesting lists via AI/ChatGPT, so remember you can use the Visual Editor's Increase Indent button to nest lines of a list.



Use the *Increase Indent* button to nest Lists.

Links

We all know using url's for link text is not accessible basically because the screen reader will read the entire link. So:

<https://ghr.nlm.nih.gov/primer/basics/dna>

becomes:

“h-t-t-p-s colon backslash backslash g-h-r dot n-l-m dot g-o-v backslash...” and so on, basically reading individual letters and dots and backslashes etc.

The following prompt will turn a url into an HTML anchor/href link.

Prompt: Create accessible html links from the following url's. For the links' text, use the site name and then add the webpage name:

<https://ghr.nlm.nih.gov/primer/basics/dna>
<https://medlineplus.gov/genetics/understanding/basics/gene/>

which yields us:

- [Genetics Home Reference: Basics of DNA](https://ghr.nlm.nih.gov/primer/basics/dna)
- [MedlinePlus: Understanding Gene Basics](https://medlineplus.gov/genetics/understanding/basics/gene/)

This can be a REAL time saver, especially if you have a list of 10, 20 or more url's.

Note

Often the AI generates extra code needed for an entire webpage.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width,
initial-scale=1.0">
<title>Accessible Links</title>
</head>
<body>
```

```

<nav>
<ul>
<li><a href="https://ghr.nlm.nih.gov/primer/basics/
dna">Genetics Home Reference – DNA Basics</a></li>
<li><a href="https://medlineplus.gov/genetics/
understanding/basics/gene/">MedlinePlus – Gene
Basics</a></li>
</ul>
</nav>
</body>
</html>

```

You can request that the AI delete all the non-essential HTML:

Prompt: please delete everything but the 2 anchor html text

Yields:

```

<a href="https://ghr.nlm.nih.gov/primer/basics/
dna">Genetics Home Reference – DNA Basics</a>
<a href="https://medlineplus.gov/genetics/
understanding/basics/gene/">MedlinePlus – Gene
Basics</a>

```

Glossary

A11y

A11y is a common abbreviation for the word “accessibility”. The 11 stands for the number of letters it saves when typing.

OER

Open Educational Resources

Pressbooks

WordPress-based authoring platform, often used to create OER textbooks.