How to Make Accessible PDFs

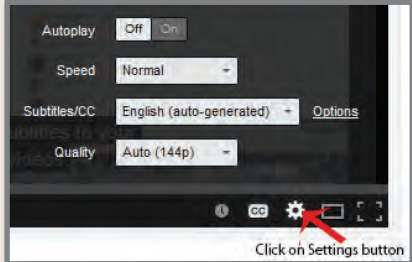| Method	Software / Hardware	How to Make It Accessible
Convert MS Office to an Accessible PDF document	▪ Microsoft Office 2010, 2013 Pro	1. Start with a well-structured Word document or presentation. 2. Click the **File** tab and select **Save as**. In the **Save as type** field, select **PDF (*.pdf)**. 3. Enter a file name in the **File name** field. 4. Click on the **Options** button and make sure the **Document structure tags for accessibility** and **Create bookmarks using Headings** checkboxes are checked. 5. Click **OK** and **Save**. This will tag all of the text formatting, so page headings and lists are correctly interpreted by a screen reader.
Save your original files (PPT, Word)	▪ MS Office 2011 (for Mac)	▪ Microsoft Word & PowerPoint 2011 for the Mac cannot produce a fully accessible PDF. ▪ Go to *http://www.pcc.edu/resources/instructional-support/access/pdfs-from-mac.html* for options on how to create an accessible PDF.
Run Optical Character Recognition (OCR) on scanned document	▪ Adobe Acrobat Professional (Version XI Pro)	1. Open the scanned PDF file. 2. Open the **Tools** panel (click **Tools** in top right) and click **Text Recognition**. 3. Click **In This File** and the **Recognize Text** window will open. 4. Click the **Edit button** to adjust OCR settings. Select **English (US)** for **Primary OCR Language**, **Searchable Image** for **PDF Output Style** and **600 dpi** for **Downsample To**. 5. Click **OK** when done.

Run Adobe Acrobat Built-in Accessibility Checker	▪ Adobe Acrobat Professional (Version XI Pro)
	
	All versions. No matter what you are converting to PDF, it is important to save your original files in case a student needs an alternate format.
		1. Click the **Tools** tab to open the **Accessibility** panel on the right hand side.
		  ▪ If you don't see it, click the **View** menu and select **Tools** > **Accessibility**.
		2. Under **Accessibility**, select the **Full Check** button.
		3. The **Accessibility Checker** window will open.
		  ▪ Under **Report Options**, select **Create Accessibility Report**.
		  ▪ Under **Checking Options**, select Category: **Document** and check all the items.
		4. Click the **Start Checking** button.
		5. The **Accessibility Checker Report** will display on the left pane.

6 **Save your original files.** You may need them if you have a student who needs alternative formats.

How to Find and Create
Accessible Video & Audio

Component	Best Practices	How to Make It Accessible
Media Player Buttons must be properly labeled so a screen reader user can use the player.	**Keyboard navigation** Students must be able to operate a media player with the keyboard alone (without using a mouse).	▪ To test for keyboard accessibility, press the **Tab** key to navigate to the player, and use the **Tab, Arrow keys, Enter, and Spacebar** to interact with the media player buttons.
Captioned Media Search for or create captioned media. A transcript can be used if visual elements such as props and synchronization are not necessary to understand content.	**Search for captioned media** The HCC Library has a wide selection of captioned media in Films on Demand.	How do I find **human transcribed captioned videos** on **YouTube**? (Search from YouTube site) 1. Enter your search keyword in the **YouTube Search field**. 2. Add a: **, CC** (a comma, CC) 3. Press **Enter** or click the magnifying glass icon How do I find **human transcribed captioned videos from Google**? 1. Fill out the **Advanced Video Search** fields *(http://www.google.com/advanced_video_search)* that you need. 2. Choose the "**Subtitles: Closed captioned only**" option. 3. Press **Enter** or click the **Advanced Video search button**.
	Create captioned media	When making a video: • Work with a transcript or outline. • Use Snagit or Camtasia to add captions more easily. For Snagit and Camtasia support, contact Learning Technology (learntech@hagerstowncc.edu).
	Make sure the YouTube video you use **IS NOT auto-generated** .	**How do I know?** ▪ Click the **Settings** button and check the **Subtitles** field. Avoid auto-generated subtitles and the **Translate** feature which are not usually accurate. Click on Settings button

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Keep track of your uncaptioned media. You may need this list if a student has an accommodation need.

How to Make
Accessible Complex Images

Complex Images include graphs, charts, diagrams, maps, and illustrations. Below are three ways to provide alternative (alt) text-based description for complex images, when a simple alt text attribute is insufficient. Choose the best Alt text method for your image types.
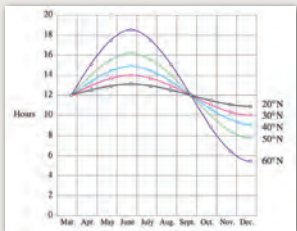
A Use a caption

For Web Pages: Your caption must be associated with the image, so make sure to properly add a caption using the '**figcaption**' html tag (requires HTML editing). *Note:* For MS Word and PowerPoint: Right click on the image and select **Add Caption**.

Example code:
YÑáÖìêÉ[YáãÖ=ëêÅZ?áã~ÖÉëLÑáÖV≤=~äíZ??=ïáÇíÜZ?NSM?=ÜÉáÖÜíZ?NOM?=L[=YÑáÖÅ~éíáçå[YÉã[**Caption goes here, Fig.9-Graph..**YLÉã[YLÑáÖÅ~éíáçå[YLÑáÖìêÉ[=

Fig.9 - Graph of the length of daylight from March through December at various latitudes. For example, at 40 degree latitude there are 12 hours of daylight in March. In October, there are 10.8 hours of daylight at 40 degree.
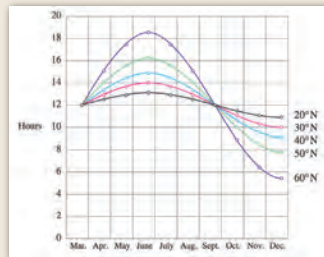
B Describe in surrounding text

If the image is adequately described in surrounding text (including text-based data tables), so that the image is just reinforcing the text, no further description is needed necessary.

Example:

Modeling amount of daylight as a function of time of year, Figure 9 and the table beside it, show the number of hours of daylight as functions of the time of the year at several latitudes, from March through December.

Fig.9

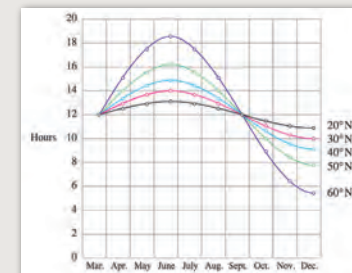| Month	Hours in varied latitudes				
	20°	30°	40°	50°	60°
Mar.	12	12	12	12	12
Apr.	12.3	13.2	13.5	14	17.5
May	12.9	13.7	14.3	15.5	17.7
Jun.	13	14	14.9	16.1	18.2
Jul.	12.8	13.8	14.2	15.7	17.8
Aug.	12.5	12.8	13.2	14	15
Sep.	12	12	12	12	12
Oct.	11.6	11.2	10.8	10	9
Nov.	11	10.2	9.7	8.3	6.5
Dec.	10.9	10	9.1	7.9	5.7

Example of Data Table for Figure 9

C Link out to a web page with a longer description

If the image cannot be described using methods A or B, use the 'longdesc' attribute (Requires HTML editing).

Example code:
YáãÖ=ëêÅZ ?áã~ÖÉëLÑáÖÖVKàéÖ?=~äíZ?cáÖKVJdê~éÜ=çÑ=íÜÉ=äÉåÖíÜ=çÑ~óäãÖÜí=Ñêçã=j~êêÅÅÜ=ON=íÜêçìÖÜ=aÉÅÉãÄÉê=ON=~í=î~êáçìë=ä~íááíiÇÉëK?=ïáÇíiÜZ≤QMM≤=ÜÉáÖÜíZ≤OVM≤=
longdesc="fig9-longdesc.html?=L[=

Fig. 9

<html>
<p>Modeling amount of daylight as a function of time of year Figure 9 shows graphs of the number of hours of daylight...</p>
</html>

fig9-longdesc.html

The graph image is from Lucia C. Harrison, Daylight, Twilight, Darkness and Time (New York: Silver, Burdett, 1935) page 40.

How to Make
Accessible Complex Images

Resources for Image Description

- **Guidelines for Describing STEM (Science Technology Engineering and Math) images**
  http://goo.gl/TBT01Z

- **How Do We Access Meaning in Art? (Describing art images in alt text)**
  http://goo.gl/dAXZOx

- **Video: How to Describe Complex Images for Accessibility (From Diagram Center's Webinars)**
  http://goo.gl/QgsS5G

- **Diagram Center's Accessible Image Sample Book**
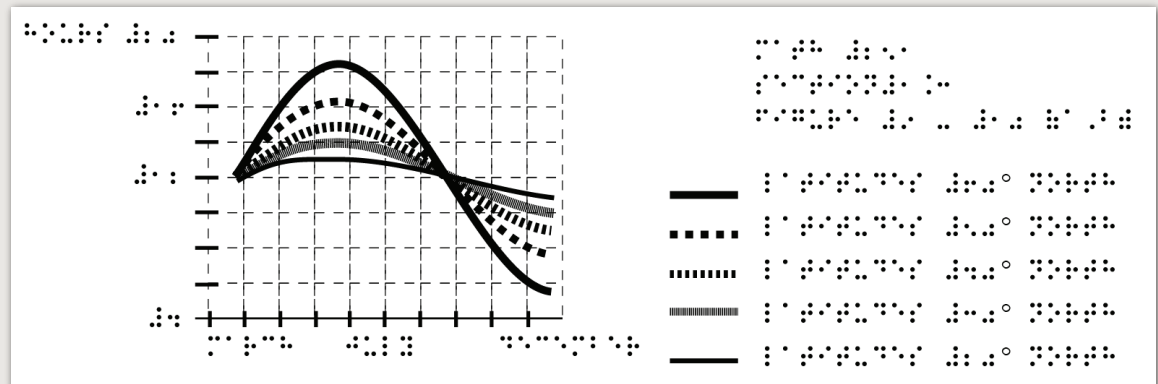 *http://goo.gl/N0arvW*

Tactile Representations

Sometimes touching a model or a tactile graphic is the best way to describe something.

Tactile graphics

Tactile graphics have different sized raised dots to show variation in graphs, charts and maps.
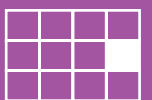
Example:

Indicate if a model is available

A 3D model of chest anatomy

If you know where a 3D model of the image is available, indicate that in your image caption or on the same page as the image.

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How to Make
Accessible Math & Science Content

Component	Math Tools	Best Practices
Math & Science equations, formulas, and notation	▪ MathML	MathML stands for 'Math Markup Language' which is the web standard for accessible online math and science notation/equations/formulas. Typically, a user does not create MathML, but instead uses a conversion process to output MathML.
	▪ Moodle ▪ MyLab	In Moodle, use the Atto editor, or create your content in SoftChalk Cloud. SoftChalk stores content as Math ML. MyMathLab (and other Pearson MyLab products) stores content as MathML.
	▪ Word documents	MathType is an equation editor created by Design Science that is compatible with MS Word for Windows and Mac. MS Word with MathType can be exported as MathML or it can be converted to braille. (Save your original files.) **DO NOT** use Microsoft's equation editor. MathType: *http://www.dessci.com/en/products/mathtype/*.
	▪ PDFs	Math **IS NOT** accessible in PDF. Save the original file with the original MathType or LaTeX equations. Disability Support Services will ask for your original files when there is an accommodation need.
	▪ PowerPoints	For MS PowerPoint 2013, use the MathType 6.9 plugin or later to create math and science equations, formulas and notations. **DO NOT** use Microsoft's equation editor. If you convert to a PDF or export to a webpage, save your original MS PowerPoint files. Disability Support Services may need these.
	▪ Graphs	To make graphs accessible, do your best to describe them using alternative text, long descriptions, or captions.
	▪ LaTeX	LaTeX is a mark-up language. Converting LaTeX documents into an accessible format is usually straightforward. Keep LaTeX original files if you convert to other formats.
	▪ WeBWorK	WeBWorK is an accessible and free online homework platform for math and sciences courses.
	▪ LibreOffice	LibreOffice (with its native equation editor) exports easily to web pages that contain MathML.

9 Save your original files. You may need them if you have a student who needs alternative formats.

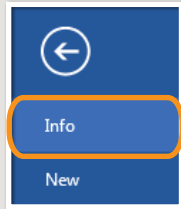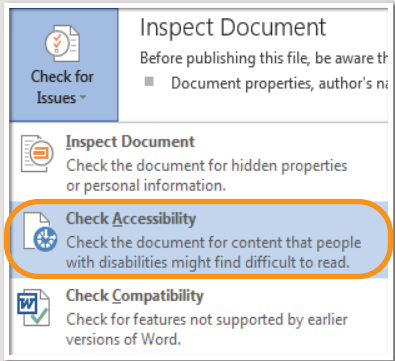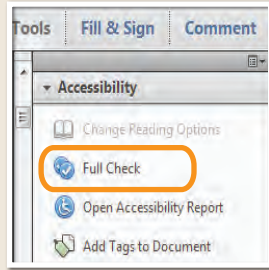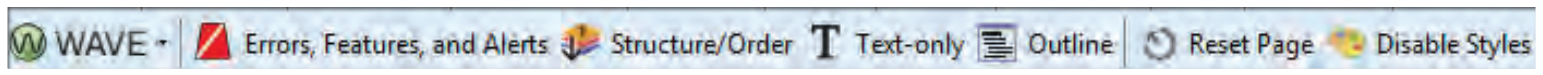| Ask About	Questions and Considerations
How accessible are their digital materials?	■ **Are videos captioned and audio recordings transcribed?** Transcripts for audio recordings, and captions or subtitles for video, should be available. If these are not available, ask the publishing representative when they plan to have them. If they have no plans, ask them to give HCC written permission to transcribe or caption the media when there is an accommodation need. ■ **Are images described in alternative text?** PowerPoint slides from publishers often have images without any alt text. Ask your publishers if their images have alt text. ■ **Can all of the text that is displayed on the screen be read aloud by text-to-speech software?** Screen readers (assistive technology used by people who are blind) read real text. They cannot read images of text or text embedded in Flash animations/movies/simulations. ■ **How accessible are the E-books?** Are images described? Are embedded objects like videos keyboard accessible and captioned? Is the E-reader keyboard and screen reader accessible? ■ **Can all interactivity (media players, quizzes, flashcards, etc.) function using only the keyboard (no mouse)?** People who are blind or have upper mobility disabilities cannot use a mouse. They use the keyboard to navigate and interact on the Web. It is required that any interactive elements on a publisher's website (or on a DVD included with the book) be operable by keyboard alone if they are used in your course. ■ **Is documentation available (VPAT or White Paper for example) that confirms accessibility or usability testing results?** A VPAT (Voluntary Product Accessibility Template) is used by many organizations to report the level of accessibility of software products. ■ **Is your multimedia (Adobe) Flash or (Oracle) Java-based? Can your materials be watched on mobile devices?** Content created in Flash or Java can be inaccessible and may not run on mobile devices and tablets.
Use Open Educational Resources (OER)	■ **OERs** have the same accessibility requirements as all other digital materials. If they are not accessible, they can sometimes be retrofitted to be accessible. That is not possible if the materials reside on a publisher's server.

✅ Automated Accessibility Checkers

Software	Tools	How to Check
MS Offices through 2016 Windows (Word, PowerPoint)	■ A built-in accessibility checker (**Note:** The accessibility checker **checks only** .docx and .pptx files)	1. Go to the **File** tab. 2. Select **Info** from the sidebar menu. 3. Click on the **Check for Issues** button. 4. Select **Check Accessibility** from the drop-down list. The **Accessibility Checker** panel will open to the right of the document. The accessibility checker provides you with **a list of errors, warnings & tips**. When you click on an error or warning, instructions on how to fix it appear below in "Additional Information."

PDF (Adobe Acrobat Pro)	■ A built-in accessibility checker
	(**View > Tools > Accessibility**)
		1. Click the **Tools** tab to open the **Accessibility Tool** panel on the right.
		(If you don't see it, click the **View** menu and select **Tools > Accessibility**).
		2. Select the **Full Check** button & the **Accessibility Checker Options** will open.
		  ■ On the **Report Options** section, check on **Create Accessibility Report** .
		  ■ On the **Checking Options** section: select **Document** under **Category** field, and check all items.
		3. Click on the **Start Checking** button and the **Accessibility Report** will display.

Moodle & Web Pages	■ A browser-based checker, WebAIM WAVE accessibility add-on to your browser	WAVE ▾ | Errors, Features, and Alerts 🖍 Structure/Order T Text-only ▤ Outline 🔄 Reset Page 🎨 Disable Styles 1. Download & install the WAVE toolbar *(http://wave.webaim.org/toolbar/)*. 2. Open the Moodle page in its own window by clicking on the **Open** in a new window icon. 3. **Right-click** on the page in the new window, and select **WAVE**, then choose "**Errors, Features, and Alerts**" to see what accessibility errors you have on the page. 4. Error icons in green, red, yellow and blue will appear on the page. If you hover over an error icon, more information on the error will appear. 5. Return to the original webpage, and make edits as necessary to repair the problems.

11

Training & Support

Online Training & Resources

www.pcc.edu/access

Fletcher Faculty Development Center

Linda Cornwell, Coordinator
Phone: 240-500-2230
Email: ljcornwell@hagerstowncc.edu

Moodle Help

Brenda Huffman, Learning Technology System Specialist
Phone: 240-500-2378
Email: bkhuffman@hagerstowncc.edu

Disability Support Services

Jaime Bachtell, Coordinator
Phone: 240-500-2273
Email: jlbachtell@hagerstowncc.edu

Testing Tools

- **Chrome & Firefox: WAVE Toolbar**
  http://wave.webaim.org/extension/

- **Internet Explorer: WAT Tool**
  https://developer.paciellogroup.com/resources/wat/

- **MS Word:** Built-in 2010, 2013, 2016 (PC)

- **MS PPT:** Built-in 2010, 2013, 2016 (PC)

- **PDF:** Built-in Adobe Acrobat Pro

- **Color Contrast Analyzer**
  http://www.paciellogroup.com/resources/contrastAnalyser

This resource was adapted from a guide
developed by Portland Community College:
pcc.edu/access

*The production of this guide was supported by a grant from
the Alice Virginia and David W. Fletcher Foundation*

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COMMUNITY
COLLEGE