<table>
<thead>
<tr>
<th>1</th>
<th>Web Accessibility at DMACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Accessibility Guidelines</td>
</tr>
<tr>
<td>3</td>
<td>Accessible Blackboard Webpages</td>
</tr>
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<td>Accessible PowerPoint &amp; Google Slides</td>
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<td>Accessible Word Documents &amp; Google Docs</td>
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<tr>
<td>Component</td>
<td>Guideline</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>HEADINGS</strong></td>
<td>Use properly formatted headings to structure a page.</td>
</tr>
<tr>
<td><strong>LISTS</strong></td>
<td>Format lists as proper lists.</td>
</tr>
<tr>
<td><strong>LINKS</strong></td>
<td>Write meaningful link text.</td>
</tr>
</tbody>
</table>
| **TABLES** | Create tables with column and/or row headers, and ensure a proper reading order. | • **Why Column Headers in a Data Table are Important** Using table headers is important to conveying tabular data accurately.  
• **Why the Reading Order in a Table is Important** Screen readers read tables from left to right, top to bottom, one cell at a time (and only once). If cells are split or merged, it could throw the reading order off which may make the table difficult to comprehend by users who are blind and using a screen reader to navigate. |
| **COLORS** | • Use sufficient color contrast.  
• Don’t use color alone to convey meaning. | Without sufficient color contrast between font and background, people who are color blind and low vision will not benefit from the information. And using color alone to convey meaning will leave those who are color blind or blind unable to interpret the meaning. |
<p>| <strong>KEYBOARD</strong> | Ensure that any action that uses a mouse can also be completed using only the keyboard. | Mobility and visual disabilities often make using a mouse impossible or ineffective. If content is not keyboard accessible, it will limit who can learn from the content. |
| <strong>IMAGES</strong> | Provide alternative (Alt) text descriptions for images. | Alt text is read by a screen reader. It should adequately describe what is being displayed and why it’s important. This allows screen reader users to benefit from the information being conveyed by the image, even if they cannot see it. |</p>
<table>
<thead>
<tr>
<th>Component</th>
<th>Guideline</th>
<th>Why is this Important?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAVIGATION</td>
<td>Design clear and consistent navigation.</td>
<td>Clear and consistent navigation in your course will allow students to focus on your content rather than on how to find it.</td>
</tr>
<tr>
<td>BLINKINGS</td>
<td>Eliminate or limit blinking / flashing content to 3 seconds.</td>
<td>Blinking content is distracting, and it can cause seizures to occur in people with a photosensitive disorder.</td>
</tr>
<tr>
<td>FORMS</td>
<td>• Label form fields and buttons clearly. • Ensure a proper logical reading order in a form.</td>
<td>• <strong>Why the reading order of a form is important</strong> Using the tab key, your cursor should follow through the form in the same order it is intended to be completed. This benefits users who cannot use a mouse. • <strong>Why labeling buttons and form fields is important</strong> A screen reader will identify the button or form field by reading the label. The label should adequately describe the button’s action, and the form field label should indicate what information should be filled in to the form field.</td>
</tr>
<tr>
<td>VIDEO</td>
<td>Keep a list of video/audio recordings that are not captioned/subtitled or transcribed. Disability Services will ask you for that list when you have a student with a captioning accommodation.</td>
<td>Video captions benefit many viewers. Captions are essential for those who are deaf and hard of hearing, but they also aid in comprehension for non-native English speakers, those who are unfamiliar with vocabulary, and viewers with some learning disabilities or in a noisy environment.</td>
</tr>
<tr>
<td>AUDIO</td>
<td>Require only accessible software &amp; applications.</td>
<td>Audio transcripts benefit many students. They are essential for those who are deaf or hard of hearing, but they also assist anyone who would like to read or search the transcript.</td>
</tr>
<tr>
<td>SOFTWARE</td>
<td></td>
<td>Inaccessible software and applications will shut students with disabilities out.</td>
</tr>
<tr>
<td>MATH &amp; SCIENCE</td>
<td>Write math and science equations accessibly.</td>
<td>For web pages, use an equation editor that outputs MathML. For MS Word and PPT documents, use the MathType plugin conveyed by the image, even if they cannot see it.</td>
</tr>
</tbody>
</table>
## HOW TO MAKE Accessible Blackboard Pages

<table>
<thead>
<tr>
<th>Component</th>
<th>Guideline</th>
<th>How to Make it Accessible?</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE MENU</td>
<td>■ Use the default course menu in Blackboard.</td>
<td>Clear and consistent navigation in your course will allow students to focus on your content rather than on how to find it.</td>
</tr>
</tbody>
</table>
| IMAGES        | ■ Add alternative (Alt) text to images.                                   | 1. Place the cursor where you want to insert an image, and click the **Insert/Edit image** icon from the toolbar. The **Insert/Edit image** window will open.  
2. In the **Image Description** box, describe the purpose and subject of the image. (This description is called an “alt tag”)  
3. Click the **Insert** button. |
| LISTS         | ■ Format a list as a list using Bullet List or Number List.               | 1. Select the content you want to make into a list.  
2. From the toolbar, click the **Bullet** or **Number** list icon. |
| LINKS         | ■ Write meaningful link text that indicates the link’s destination.       | 1. Write meaningful text for the link (ex. Des Moines Area Community College).  
2. From the toolbar, click on the **Insert/Edit Link** icon.  
3. In the **Link Path** box, type or paste in the URL ([https://www.dmacc.edu](https://www.dmacc.edu)).  
4. Select **Open in New Window** from the **Target** drop down menu.  
5. Click the **Insert** button. |
<table>
<thead>
<tr>
<th>Component</th>
<th>Guideline</th>
<th>How to Make it Accessible?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TABLES</td>
<td>■ Indicate row headers in data tables.</td>
<td>1. Select the cells to be marked up as a row header.</td>
</tr>
<tr>
<td></td>
<td>■ Add table caption.</td>
<td>2. Click on the <strong>Table Row Properties</strong> icon in the toolbar.</td>
</tr>
<tr>
<td></td>
<td>■ Check the reading order.</td>
<td>3. In the <strong>Row Type</strong> menu, choose Header.</td>
</tr>
<tr>
<td></td>
<td>■ Use sufficient color contrast.</td>
<td>4. Click <strong>Update</strong> button.</td>
</tr>
<tr>
<td>COLOR</td>
<td>■ Don't use color alone to convey meaning.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Write math and science equations using the Math Editor in Blackboard.</td>
<td>Use the Math Editor in Blackboard.</td>
</tr>
<tr>
<td>MULTIMEDIA</td>
<td>■ Eliminate or limit blinking/flashin...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Make sure all mouse actions can also be completed with a keyboard alone...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ Use an accessible media player like YouTube or the Blackboard Kaltura player.</td>
<td></td>
</tr>
</tbody>
</table>
# HOW TO MAKE Accessible PowerPoints & Google Slides

For more information [dc.dmacc.edu/access](http://dc.dmacc.edu/access)

<table>
<thead>
<tr>
<th>Component</th>
<th>PowerPoint (2011/2013/2016)</th>
<th>Google Slides</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUTLINE VIEW</td>
<td>1. Click <strong>View</strong> tab (Mac: <strong>View &gt; Outline View</strong> icon - PPT 2016.)</td>
<td>• There is no <strong>Outline View</strong> in Google Slides.</td>
</tr>
<tr>
<td></td>
<td>2. In the <strong>Presentation Views</strong> group, click <strong>Outline View</strong>.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. In the <strong>Outline</strong> panel, make sure all text from the slides appears in the <strong>Outline View</strong>.</td>
<td></td>
</tr>
<tr>
<td>SLIDE LAYOUT</td>
<td>• From <strong>Home</strong> tab, choose the <strong>New Slide</strong> drop down menu and select a slide template. (Don’t use the Blank slide template.)</td>
<td>1. Create a new slide (<strong>Slide &gt; New Slide</strong>).</td>
</tr>
<tr>
<td></td>
<td>• Use the PPT provided slide layouts when building slides to help your slide’s reading order remain intact.</td>
<td>2. Go to <strong>Slide</strong> menu, click on <strong>Apply Layout</strong> and choose one of slide template (not the Blank one).</td>
</tr>
<tr>
<td>READING ORDER</td>
<td>1. On the <strong>Home</strong> tab, click on <strong>Arrange</strong> and choose <strong>Selection Pane</strong> (<strong>Reorder Objects</strong> for Mac - PPT 2011 &amp; 2016.)</td>
<td>1. Tab through the slide and the corresponding element will highlight.</td>
</tr>
<tr>
<td></td>
<td>2. To see the reading order of the slide, tab through the slide and the corresponding element will highlight.</td>
<td>2. In the slide area, click on the element that you want to change.</td>
</tr>
<tr>
<td></td>
<td>3. To re-arrange the reading order, click arrow up/down button on the <strong>Selection Pane</strong> (Mac: drag layers. Highest number is read first.)</td>
<td>3. To change the reading order, click on <strong>Arrange menu &gt; Order.</strong> <strong>Send backward</strong> will raise the element to a higher reading order. <strong>Bring forward</strong> will make the element lower in the reading order.</td>
</tr>
<tr>
<td></td>
<td>4. Test reading order with the <strong>Tab</strong> key again.</td>
<td>4. Test reading order with the <strong>Tab</strong> key again.</td>
</tr>
<tr>
<td>IMAGES</td>
<td>1. Right click on the image and select <strong>Format Picture</strong>.</td>
<td>1. To insert an image, choose <strong>Image</strong> from the <strong>Insert</strong> menu and follow the instructions.</td>
</tr>
<tr>
<td></td>
<td>2. Click the ![ ] icon to open <strong>Alt Text</strong> field.</td>
<td>2. To add Alt text, click on the image. Then in the <strong>format</strong> menu, select <strong>Alt text</strong> (at the very bottom of the menu).</td>
</tr>
<tr>
<td></td>
<td>3. Enter appropriate alt text in the <strong>Description</strong> field (not the <strong>Title</strong> field.)</td>
<td>3. Enter alt text in the <strong>Description</strong> field (not the <strong>Title</strong> field).</td>
</tr>
<tr>
<td>LISTS</td>
<td>1. Select the text to make into a list and click on the <strong>Home</strong> tab.</td>
<td>Go to <strong>Format</strong> menu &gt; <strong>Lists</strong> and select one of list styles.</td>
</tr>
<tr>
<td></td>
<td>2. In the <strong>Paragraph</strong> group, select the <strong>Numbering</strong> or <strong>Bullets</strong> icon.</td>
<td>• Use <strong>Numbered lists</strong> if a sequential order is important to the list.</td>
</tr>
<tr>
<td></td>
<td>• Use <strong>Numbering lists</strong> if a sequential order is important.</td>
<td>• Use <strong>Bulleted lists</strong> if all items are of equal value.</td>
</tr>
<tr>
<td></td>
<td>• Use <strong>Bulleted lists</strong> if all items are of equal value.</td>
<td></td>
</tr>
</tbody>
</table>

Save your original files. You may need them if you have a student who needs alternative formats.
## HOW TO MAKE Accessible PowerPoints & Google Slides

For more information [dc.dmacc.edu/access](http://dc.dmacc.edu/access)

### Component | PowerPoint (2011/2013/2016) | Google Slides
---|---|---
**LINKS** | 1. Type out text that describes the destination of the link (i.e. Dmacc Homepage). 2. Select the text, right click & choose **Hyperlink** from the menu. 3. The **Insert Hyperlink** window will open. Enter a URL address in the **Address** field (i.e. http://www.dmacc.edu) (Mac - PPT 2011: **Link to** field.) 4. Click the **OK** button to save the link. | 1. Type out text that describes the destination of the link. 2. Select the text, right click and choose **Link** from the menu. 3. Paste or type in a hyperlink. 4. Click **Apply** button to save the link.  
- Create a meaningful link that describes its destination.  
- A screen reader reads a table from left to right, & top to bottom (never repeating a cell.)  
- Merged, nested, and split cells may change the reading order of a table.  
- Construct your table in a way that accommodates a good reading order.  
- Indicate column headers for data tables.  
  **Note:** A table in Slide Show view is not accessible. Use Alt text!  
- Use enough color contrast between the text (i.e. black color) and the background color (i.e. white color).  
  | Use sufficient color contrast.  
  | Don't use color alone to convey meaning.  
  | Math and Science equations and formulas cannot be written to be accessible in Google Slides.  
  | MathType plugin [http://www.dessci.com/en/](http://www.dessci.com/en/) for MS Word to create math and science equations, formulas and notations. (DO NOT use MS equation editor, which is an older product.)  
  | Don’t embed the video, instead, link out to videos.  

### TABLES
- Check the reading order.  
- Indicate column headers for data tables.
- **Note:** A table in Slide Show view is not accessible. Use Alt text!
- You cannot create table column/row headers in Google Slides.
- Don’t use color alone to make a distinction. If you categorize something by color alone, those who are color blind or blind won’t benefit from the information.

### COLOR
- Use sufficient color contrast.
- Without sufficient color contrast, people who are low-vision and color blind will not benefit from the information.
- Go to [https://dc.dmacc.edu/access/resources/SitePages/Office%20365.aspx](https://dc.dmacc.edu/access/resources/SitePages/Office%20365.aspx) for How to Check Color Contrast.

### MATH & SCIENCE
- Use MathType plugin [http://www.dessci.com/en/](http://www.dessci.com/en/) for MS Word to create math and science equations, formulas and notations. (DO NOT use MS equation editor, which is an older product.)
- Math and Science equations and formulas cannot be written to be accessible in Google Slides.

### VIDEO & AUDIO
- Don’t embed the video, instead, link out to videos.

**Save your original files.** You may need them if you have a student who needs alternative formats.
# How to Make Accessible Word Documents & Google Docs

For more information [dc.dmacc.edu/access](http://dc.dmacc.edu/access)

## Headings

- **Properly format headings.**
  1. Select the text that you want to make into a heading.
  2. Go to the **Home** tab.
  3. Choose the appropriate heading level from the **Styles** group.

- **Use headings in the correct order**
  - Heading 1 should only be used **ONCE** per page. Heading 2, 3, etc. can be used multiple times. (DO NOT skip heading levels!)

## Images

- **Add alternative (Alt) text to images**
  1. Right click on the image, and select **Format Picture**.
  2. The **Format Picture** window will open.
  3. Select the icon & click on the **ALT TEXT** to open Alt text field.
  4. Enter image description in the **Description** field (Not the **Title** field).

## Lists

- **Format a list as a list**
  1. Select the text that you want to make into a list.
  2. On the **Home** tab, in the **Paragraph** group, select the **Bullets** or **Numbering list**.

## Links

- **Create a link that describes its destination.**
  1. Type out text that describes the destination of the link (i.e. DMACC).
  2. Select the text, right click and choose **Hyperlink** from the menu.
  3. The **Insert Hyperlink** window will open. Enter a URL address in the **Address** field (Mac - **Word 2011: Link to field**).
  4. Click the **OK** button to save the link.

## Math & Science

- Use the MathType plugin [http://www.dessci.com/en/](http://www.dessci.com/en/) for MS Word to create math and science equations, formulas and notations. **DO NOT** use Microsoft’s equation editor, which is an older product.

- Math and Science equations and formulas cannot be written accessibly in Google Docs.

Save your original files. You may need them if you have a student who needs alternative formats.
# How to Make Accessible Word Documents & Google Docs

For more information, visit [dc.dmacc.edu/access](http://dc.dmacc.edu/access).

## Check Word Document (2011/2013/2016)

### Tables

- Indicate column headers for data tables.
  1. Place the cursor in the top row of your data table.
  2. Click on the **Design tab** under **Table Tools** (Table tab on Mac - Word 2011/Table Design tab - Word 2016).
  3. In the **Table Style Options** group, select the **Header Row** check box.
  4. Under **Table Tools**, click the **Layout** tab (Table Layout tab - Word 2011).
  5. In the **Data** group (Word 2016 - Table Design > Layout tab), click the **Repeat Header Row** button. This will indicate the top row as the table’s header.

- Google Docs doesn’t allow you to designate column or row headers, so keep your tables small so they are understandable without headers.

### Check the reading order.

- Screen reader reads a table from **left to right/top to bottom** (never repeating a cell.)
- **Merged, nested, and split cells** may change the reading order of a table.
- **Construct your table** in a way that accommodates a good reading order.
- To test the reading order, place your cursor in the first cell of the table. On the keyboard, press the **Tab** key repeatedly to navigate through the table. This will be the reading order that assistive technologies will use.

## Color

- Use sufficient color contrast.
  - Use enough color contrast between the font and its background colors.
  - Without sufficient color contrast, people who have low-vision or are color blind will not benefit from the information.
  - Go to [https://dc.dmacc.edu/access/resources/SitePages/Office%20365.aspx](https://dc.dmacc.edu/access/resources/SitePages/Office%20365.aspx) to access **Color Checker**.

- Don’t use color alone to convey meaning.
  - Don’t use color alone to make a distinction. If you categorize something by color alone, those who are color blind or blind will not be able to benefit from the information.

## Forms

- Label form fields & buttons.
  - Use a form template to create a form.
  - Use real text labels for form fields and alternative text for buttons.

- Check the reading order of forms.
  - Press the **Tab** key repeatedly to check the order a screen reader would navigate through the form. If it doesn’t land on the form fields in the correct order, you will need to edit the form.
  - The **tab order** (or reading order) is important to those who are blind or physically disabled and rely on keyboard access.

- Use Google Forms, NOT Google Docs

## Save your original files.

You may need them if you have a student who needs alternative formats.
# HOW TO MAKE Accessible PDFs

For more information  
dc.dmacc.edu/access

<table>
<thead>
<tr>
<th>Method</th>
<th>Software / Hardware</th>
<th>How to Make it Accessible</th>
</tr>
</thead>
</table>
| **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 **dc.dmacc.edu/access** 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) | 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 the **Report Options**, check on the **Create Accessibility Report**.  
• Under the **Checking Options** section:  
  • Category: **Document** and check all the items.  
4. Click the **Start Checking** button.  
5. The **Accessibility Checker Report** will display on the left pane. |

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**Save your original files.** You may need them if you have a student who needs alternative formats.
## HOW TO MAKE Accessible Video & Audio

### For more information

dc.dmacc.edu/access

<table>
<thead>
<tr>
<th>Component</th>
<th>Best Practices</th>
<th>How to Make it Accessible</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIA PLAYER</td>
<td>The buttons need to be properly labeled so a screen reader user can operate the player.</td>
<td>• To test for keyboard accessibility, press the <code>Tab</code> key to navigate to the player, and use the <code>Tab</code>, <code>Arrow keys</code>, <code>Enter</code>, and <code>Spacebar</code> to interact with the media player buttons.</td>
</tr>
</tbody>
</table>

### CAPTIONED MEDIA

We recommend you search for and use captioned media.

Use the best media for your lesson. Uncaptioned media will need to be accommodated at the time of need.

<table>
<thead>
<tr>
<th>Search for captioned media</th>
<th>How do I find human transcribed captioned videos on YouTube? (Search from YouTube site)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Dmacc Library has a wide selection of captioned media. Check with your Subject Area Librarian.</td>
<td>1. Enter your search keyword in the <strong>YouTube Search field</strong>.</td>
</tr>
<tr>
<td></td>
<td>2. Add a: , CC (a comma, CC)</td>
</tr>
<tr>
<td></td>
<td>3. Press <strong>Enter</strong> or click the magnifying glass icon</td>
</tr>
</tbody>
</table>

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](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**.

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.

---

### Save your original files.
You may need them if you have a student who needs alternative formats.
**Complex Images** include graphs, charts, diagrams, maps, and illustrations. Below are 3 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:**
```html
<figure><img src="images/fig9.jpg" alt="" width="160" height="120" />
<figcaption><em>Caption goes here, Fig.9-Graph..</em></figcaption></figure>
```

**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.

### 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:**
```html
<img src="images/fig9.jpg" alt="Fig.9-Graph of the length of daylight from March 21 through December 21 at various latitudes." width="400" height="290" longdesc="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

- **NCAM: Guidelines for Describing STEM (Science Technology Engineering and Math) images**  
  [http://ncam.wgbh.org/experience_learn/educational_media/stemdx/guidelines](http://ncam.wgbh.org/experience_learn/educational_media/stemdx/guidelines)

- **Art Beyond Sight: How Do We Access Meaning in Art? (Describing art images in alt text)**  

- **Video: How to Describe Complex Images for Accessibility (From Diagram Center’s Webinars)**  
  [https://www.w3.org/WAI/tutorials/images/complex/](https://www.w3.org/WAI/tutorials/images/complex/)

- **Diagram Center: Accessible Image Sample Book**  

### 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. Disability Services and Distance Learning also can create tactile graphics for your courses needed. Please contact Haris Gunadi or Supada Amornchat for more information.

**Example:**

![Tactile Graph](https://example.com/tactile-graph.png)

**Indicate if a model is available**

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.

*A 3D model of chest anatomy*
## HOW TO MAKE Accessible Math & Science

For more information dc.dmacc.edu/access

<table>
<thead>
<tr>
<th>Component</th>
<th>Math Tools</th>
<th>Best Practice</th>
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</thead>
<tbody>
<tr>
<td>Math &amp; Science equations, formulas, and notation</td>
<td>• MathML</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>• Blackboard</td>
<td>We recommend that as much of the online class as possible be conducted within Blackboard. All output from Blackboard’s equation editor is stored as MathML, which is screen reader-accessible.</td>
</tr>
<tr>
<td></td>
<td>• Word documents</td>
<td>MathType is an equation editor created by Design Science that is compatible with MS Word for Windows and Mac. Together, MS Word with MathType can be exported as MathML or it can be converted to braille. (Save your original files.) <strong>DO NOT</strong> use Microsoft's equation editor.</td>
</tr>
<tr>
<td></td>
<td>• PDFs</td>
<td>Math IS NOT accessible in PDF. Save the original file with the original MathType.</td>
</tr>
<tr>
<td></td>
<td>• PowerPoints</td>
<td>For MS PowerPoint 2013, use the MathType 5 plugin or later to create math and science equations, formulas and notations. <strong>DO NOT</strong> use Microsoft's equation editor, as it is an older product.</td>
</tr>
<tr>
<td></td>
<td>• Graphs</td>
<td>To make graphs accessible, do your best to describe them using alternative text, long descriptions, or captions. We can supplement with tactile graphics if necessary.</td>
</tr>
</tbody>
</table>

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

<table>
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<tr>
<th>How accessible are their digital materials?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Practice</strong></td>
</tr>
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</table>
| • Are the videos captioned and audio recordings transcribed?  
  There should be transcripts for audio recordings and captions or subtitles for video. If they aren’t available, ask the publishing representative when they plan to have them. If they have no plans, ask them to give DMACC written permission to transcribe or caption the media when there’s an accommodation need, or consider using different materials.  
  | • 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 the images described? Are embedded objects like videos keyboard accessible and captioned? Is the E-reader keyboard and screen reader accessible? Have it tested by DL or DS.  
  | • 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 there any 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.  
  | • What are the computer requirements for using their materials? Will the materials work on mobile devices?  
  Distance Learning informs online students about the computer requirements for taking an online course in the Distance Education Orientation for students. If your course requirements are different, make them known in the course syllabus.  |

Contact DL or DS to have third party online material accessibility tested.
<table>
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<tr>
<th>Software</th>
<th>Tools</th>
<th>How to Check</th>
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| **MS Office 2010, 2013, 2016 Windows (Word, PowerPoint)** | • A built-in accessibility checker (Note: The accessibility checker only checks .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”. |
| **Blackboard** | • Ally | Blackboard Ally provides indicators to alert instructors to documents within their courses that may have accessibility issues  
1. Click on the red or orange Blackboard Ally indicator to improve its accessibility score.  
2. The Blackboard Ally window that appears will describe what needs to be fixed in the document. Changes to the document must be made outside of Blackboard, but can be easily re-uploaded using the Ally tool. |
Training & Support

**dc.dmacc.edu/access**
Check the accessibility website for how-to instructions and video tutorials.

**Accessibility Training**
Contact Distance Learning.

**Contact one of our Instructional Designers:**
Sean Frommelt ..... sjfrommelt@dmacc.edu ..... (515) 964-6478
Kayleen Grage ..... kmgrage@dmacc.edu ..........(515) 965-7194
Sara Kelly .............. sekelly@dmacc.edu ............(515) 964-6494

Websites

- **DISABILITY SERVICES:**
  [www.dmacc.edu/disabilities](http://www.dmacc.edu/disabilities)
- **WEB ACCESSIBILITY STATEMENT:**
  [www.dmacc.edu/disabilities/Pages/accessibility.aspx](http://www.dmacc.edu/disabilities/Pages/accessibility.aspx)
- **ACCESSIBILITY PROCEDURE (ES4085):**
  [www.dmacc.edu/student_services/int/Procedures/ES4085%20Final.docx](http://www.dmacc.edu/student_services/int/Procedures/ES4085%20Final.docx)