

# ACCESSIBILITY FOR DIGITAL DOCUMENTS

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## Introduction

Creating documents that can be accessed and read by people of all abilities is just as important as creating accessible<sup>1</sup> web content.

As a widely used format to communicate information online, PDFs and other common file types should be able to be accessed by all, including peoples with disabilities<sup>2</sup> and those with challenges in consuming digital content. You can learn more about the laws pertaining to accessibility<sup>3</sup> of digital content, the standards used and answers to frequently asked questions in the [Accessibility is a Civil Right](#) document.

Making your content inclusive<sup>4</sup> for all helps enrich your communities' experiences and gives them the potential to access the content you are providing.

When creating documents, there are a few basic steps that should be followed in order to assure your content is accessible. The core steps needed for accessibility are:

- < Use of styles<sup>5</sup> – headings, lists, etc.
- < Addition of alternate text<sup>6</sup> to images
- < Use of tables in an organized and simplified fashion
- < Use of descriptive links

The following best practices are provided to help you maximize the accessibility of your Microsoft Office products; including but not limited to Word, Excel and PowerPoint.

Most of the instructions included below apply to all of the Microsoft Office products, and by default the focus is on Microsoft Word. If instructions differ by product, a special section for the product will be included. Instructions for both Windows and Mac users are included in the training.

Microsoft Office 2016 or Microsoft Office 365 (installed apps, not the online version) is recommended for Windows users. Microsoft Office 365 (installed apps, not the online version) is recommended for Mac users. Images and instructions may vary slightly if you are using a different version.

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<sup>1</sup> “Accessible” means a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use.

<sup>2</sup> Disabilities can include impairments such as visual (blind, low vision, aging, color deficient), aural (deaf, low hearing, aging, discrimination, tinnitus, vertigo), mobility (absence of limbs or digits, paralysis, MS, CP, Parkinson’s, aging), cognitive (memory, abstraction, ADHD, DRD, agnosia, acalculia)

<sup>3</sup> Accessibility refers to the design of products, devices, services or environments for people who experience disabilities. Digital Accessibility is the ability of a website, mobile application or electronic document to be easily navigated and understood by a wide range of users, including those users who have visual, auditory, motor or cognitive disabilities.

<sup>4</sup> The design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible...without the need for further special adaptation or specialized design.

<sup>5</sup> Not to be confused with just visual type styling, a type or paragraph style is a predefined visual styling that also includes a structural tag. When these are applied to type, screen readers will be able to recognize the different tag and change in content hierarchy.

<sup>6</sup> Alt text provides a textual alternative to non-text content, such as images. Alt text is read by a screen reader in the place of images.

You may notice that some configuration/layout options available to you are not covered in these instructions, such as text boxes and headers and footers.

Text boxes are not accessible in Word. If a box of text is desirable for layout or design purposes, use a table with a single row, single column. Do not use a text box to insert an image or graphic.

Assistive Technology<sup>7</sup> does not read content located in the header and footer, therefore no vital information should be placed there.

Please note, this curriculum is a reduced promotional version. For the full curriculum, please visit the [Iowa State University Extension and Outreach eAccessibility website](#).

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<sup>7</sup> Any item, piece of equipment or product system that is used to increase, maintain or improve the functional capabilities of those with disabilities. Examples of assistive technology include screen readers, magnifiers (screen or physical), high-contrast display, captions and many more.



Step 4: Select Import/Export in the lower right-hand corner.

Step 5: Select Import Customization File from the dropdown menu.

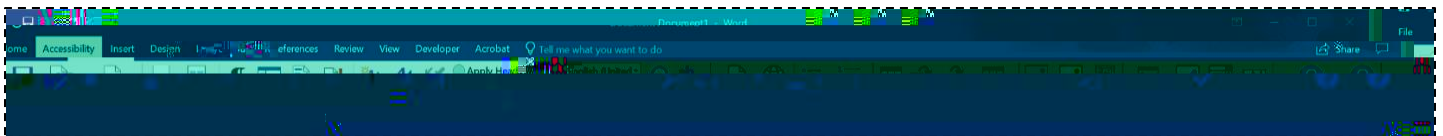
Step 6: Select the ribbon file you downloaded from Cybox. Then select Open.

Step 7: Respond Yes to the warning dialog that appears asking to “Replace all existing ribbon and quick access toolbar customizations for this program.”

**NOTE:** If you have made previous customizations to your Ribbons, this will overwrite those changes. If you find you are missing a ribbon after adding the Accessibility ribbon, follow instructions 2-3 above and click the checkbox next to the ribbon that you are missing.

Step 8: Back in the Customize Ribbon screen, make sure that the checkbox next to the Accessibility (Custom) is checked.

Step 9: Click OK. The Accessibility ribbon should now be visible.

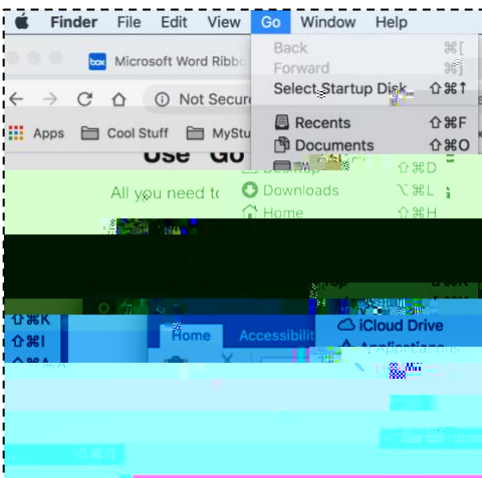


## Mac Users

Step 1: Download the ribbon from Cybox. You will not be able to open the file, save it in a location that is easy to find.

- < [Microsoft Word Ribbon](#)
- < [Microsoft PowerPoint Ribbon](#)
- < [Microsoft Excel](#)

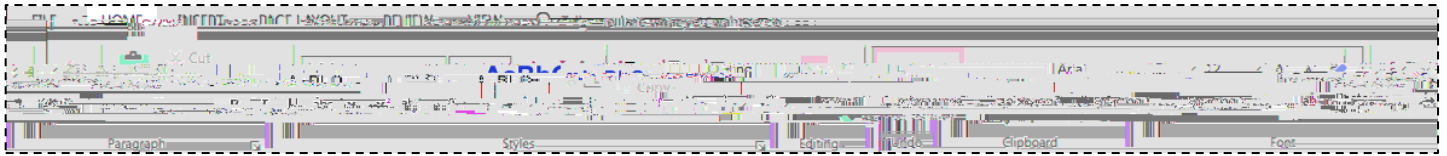
Step 2: Hit Command + Shift + G or on the Finder menu click Go -> Go to Folder...





## Styles

It is a common practice to create a type style by changing the text directly in the document. A user will highlight the text and apply a different font styling: a larger font size, bold formatting, additional spacing (with returns or spaces) etc. While these changes made to the font styling will provide *visual* structure for some of your users, the document structure needed for navigation by assistive technology *users* is missing.



In order for your document to be accessible, you will need to use pre-defined styles. These aren't just a good idea – they're *required* for accessibility. Microsoft Office Products provide default styles.



## Modifying Pre-Defined Styles

To modify a pre-defined style, you need to modify the original style.



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*Mac Users*

After selecting the Navigation Pane in the Vie

## Microsoft Excel

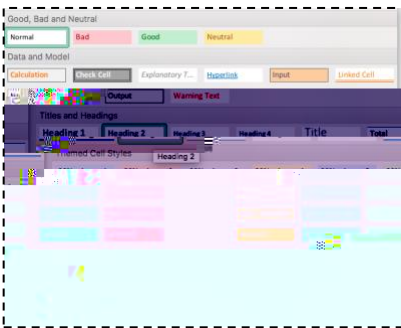
Step 1: Select the cell that you want to apply the heading style to.

Step 2: In the Accessibility ribbon, select the Cell Styles drop down.



Step 3: In the Cell Styles drop-down, select the appropriate heading style from the Titles & Headings section.

**NOTE:** If you adjust colors, please remember that you need to think about color contrast as an accessibility requirement. A color contrast checker (such as [WebAIM: Color Contrast Checker](#) or [Contrast Checker](#)) can help you determine if the colors you would like to use pass the WCAG AA criteria<sup>9</sup>.



**NOTE:** You can modify cell styles by right-clicking on the cell style and selecting Modify...

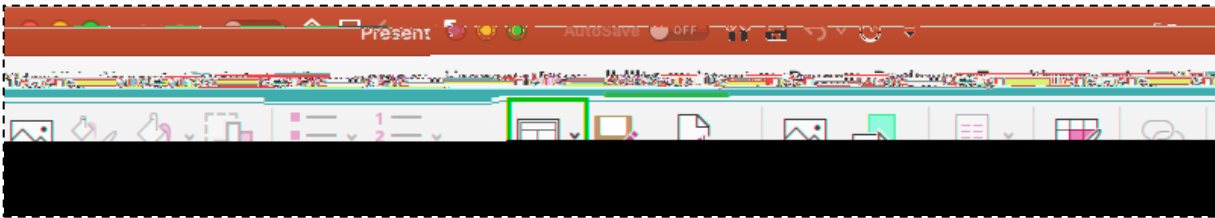
<sup>9</sup> WCAG guidelines are categorized into three levels of compliance: A (must support), AA (should support) and AAA (may support). As an educational institution, we must comply with the AA standard.

## Microsoft PowerPoint

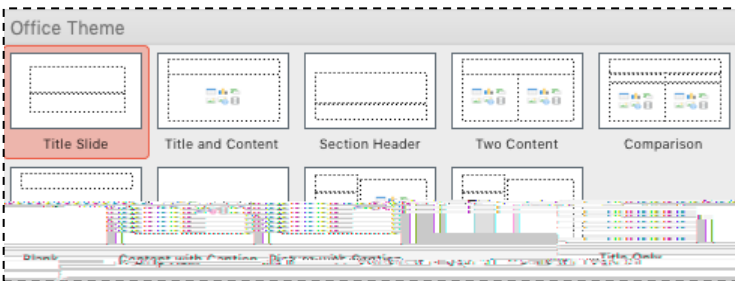
The PowerPoint version of headings is using the layouts.

It is very important to use layout options in PowerPoint for assistive technology functionality. Make sure the text on your slide is large enough for someone at the back of the room to easily read and that every slide has a unique title. Titles on slides are required for accessibility.

Step 1: To access layout options, go to the Accessibility ribbon and click on the Layout icon.



Step 2: Then select the layout option from the drop-down that you need for your slide.



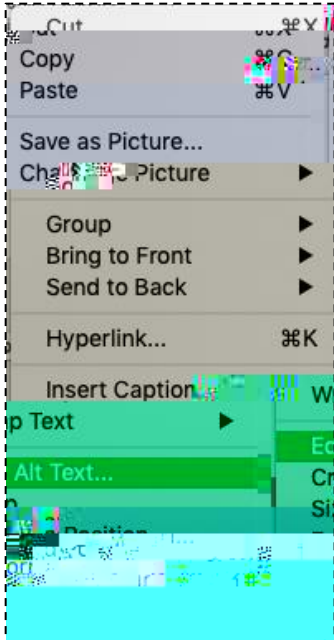
## Images

### Alternate Text

Alternate text provides a textual alternative to non-text content, such as images. Alternate text serves several functions:

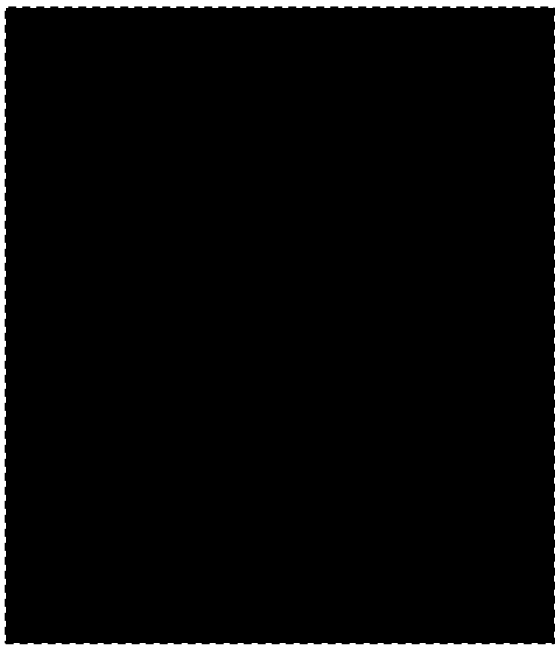
## Add Alternate Text to an Image

Step 1: Select the image and click Alt Text in the Accessibility ribbon or right click on the image and select Edit Alt Text...



Step 2: The Alt Text window will open on the right-hand side of your document.

Step 3: Add the alternate text. Remember to use proper capitalization and punctuation.





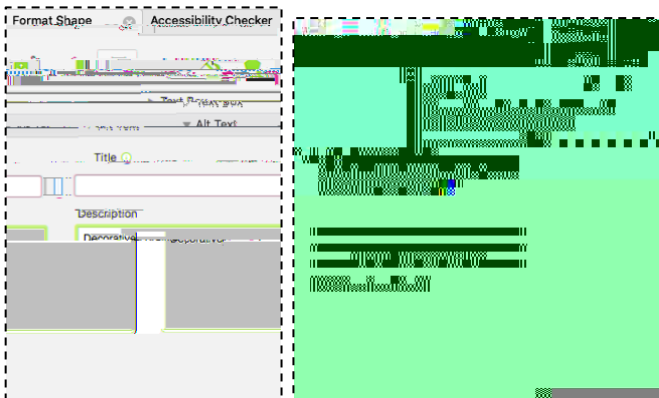
## Decorative Images

Some images are not critical to the understanding of the document. If removing the image doesn't change the understanding of the document, mark it as decorative. The Iowa State Extension and Outreach Red Bar is a perfect example of something that should be marked as decorative, especially in longer documents where it appears on most every page. As always, avoid using decorative images when possible.

**NOTE:** Use your best judgement on whether or not a visual element is adding value to the understanding of a document. A good rule of thumb would be to have at least two good reasons as to why the visual is critical to the understanding of a document. If you cannot come up with two reasons, consider making the graphic decorative.

Follow Steps 1 & 2 in the [Add Alt Text to an Image](#) section.

Step 3: In the Description field, add the word Decorative. In Office 365, instead of adding the word Decorative, simply check the Mark as decorative checkbox.



**TIP:** You can highlight multiple images/objects and apply the same Description to them all at once.

## Image Layouts

When combining images with text, it's important to make sure that assistive technologies reads them in the order that is intended. This is why it is important to use the Layout Options that Microsoft Office provides instead of using extra spacing or returns.

Step 1: Images need to be In Line with Text in order to be accessible. On the Accessibility ribbon, choose Layout and In Line with Text (Windows users) or In Line with Text in the Accessibility ribbon (Mac users).





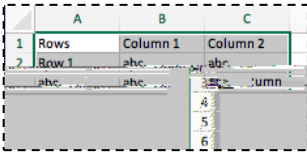
## Tables

The purpose of tables is to present information in a grid, or matrix, and to demonstrate relationships between variables in an easy-to-understand fashion. Sighted users scan a table to make associations between data in the table and their appropriate row and/or column headers. Assistive

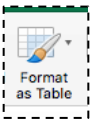
Step 3: In the Table Layout ribbon, click repeat header rows in the right-hand corner if your table spans multiple pages.

## Microsoft Excel

Step 1: Select the cells that you want to form your table.



Step 2: In the Accessibility ribbon select the Format as Table icon.



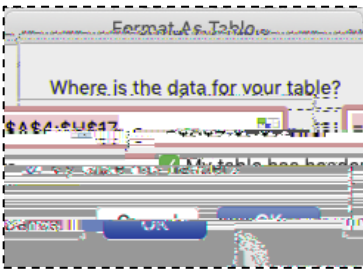
Step 3: Select a style from the drop-down.

**NOTE:** If you adjust colors, please remember that you need to think about color contrast as an accessibility requirement. A color contrast checker (such as [WebAIM: Color Contrast Checker](#) or [Contrast Checker](#)) can help you determine if the colors you would like to use pass the WCAG AA criteria<sup>11</sup>.

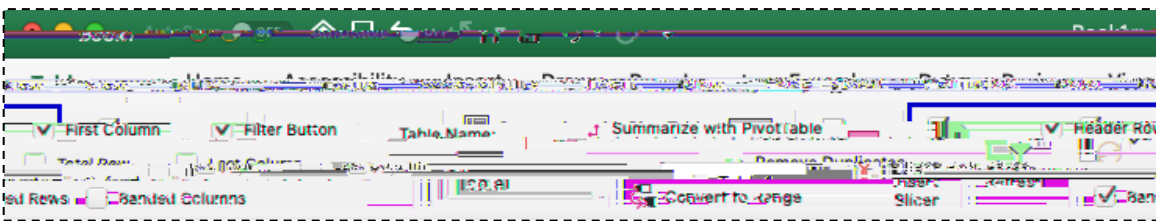


<sup>11</sup> WCAG guidelines are categorized into three levels of compliance: A (must support), AA (should support) and AAA (may support). As an educational institution, we must comply with the AA standard.

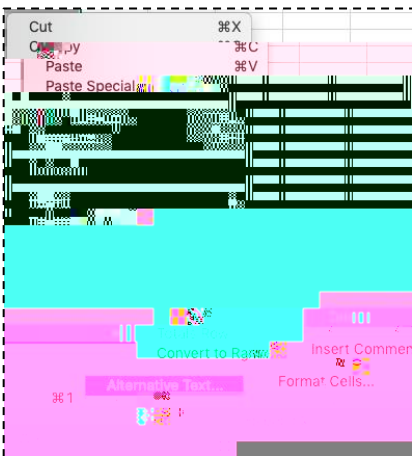
Step 4: In the Format As Table pop-up box, make sure to check “My table has headers” before selecting OK.



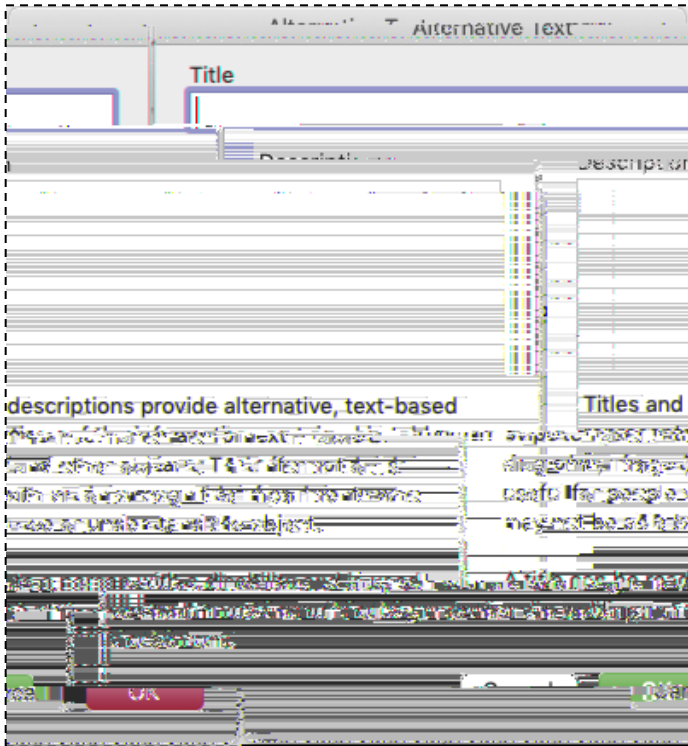
Step 5: In the Table ribbon, make sure that Header Row and First Column is checked.



Step 6: Right click on the table and go to Table -> Alternative Text...



Step 7: Add a short descriptive Title (if you have a Title field). Rather than trying to describe the whole table in the Description field, the best thing for you to do is to add alternate text on what's important about this table. For example, you might say, "Row one is a higher value than any other values."



Step 8: Click OK.



## Links

Hyperlinks in documents allow users to visit web pages, navigate to headings and bookmarks within the document and open email links. Assistive technology users may skim a document by navigating from link to link. Avoid ambiguous link text that is difficult to understand out of context (e.g., “click here”).

Follow these principles to create accessible links:

- ◁ Use descriptive link text that does not rely on context from the surrounding text.
- ◁ Keep the amount of text in the link to a minimum.
- ◁ Avoid using the actual link within the text of the document. You should hyperlink text within the document. If you want to include the full URL for documents that may be printed, include them on a Resources page at the end of the document (as done in this curriculum), in a footnote or an unlinked URL in parenthesis directly after the linked text.

### Examples of Incorrect Use of Links:

[Click Here](#) to order your new computer today!

\*The example above does not use descriptive link text and relies on context from the surrounding content.

Visit <https://www.extension.iastate.edu/it/ordering-new-computers/> to order your new computer today!

\*The example above uses the actual link within the text of the document

### Examples of Correct Use of Links:

[Order your new computer today!](#)

\*The example above uses descriptive link text that does not rely on context from the surrounding content.

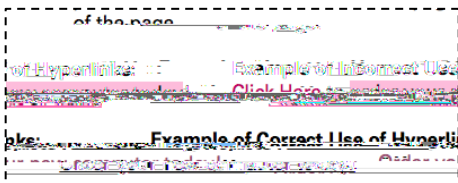
[Order your new computer today!](#) (<https://www.extension.iastate.edu/it/ordering-new-computers>)

\*The example above provides hyperlinked text as well as the unlinked full URL in the document.

[Order your new computer today!](#)<sup>12</sup>

\*The example above provides hyperlinked text as well as the full URL in the footnote.

Step 1: Highlight the text that you want to link.



Step 2: Select Hyperlink or Link from the Accessibility ribbon.

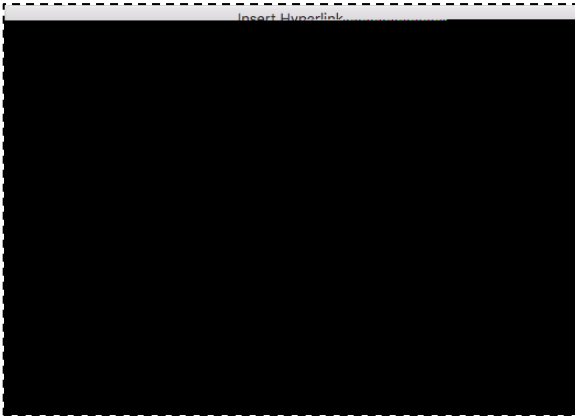
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<sup>12</sup> <https://www.extension.iastate.edu/it/ordering-new-computers>



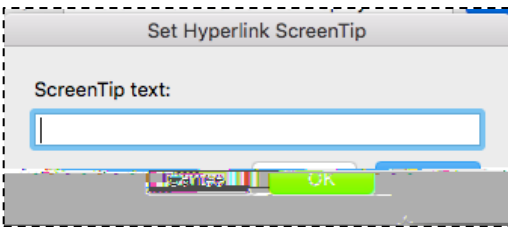
Step 6: To enter a link to an email address, make sure you are on the Email Address section of the Insert Hyperlink pop-up. Enter the email address preceded by mailto: and if you wish a subject line for the email.

Example: <mailto:example@email.com>



Step 7: Click OK when you are done inserting your hyperlink.

Step 8: If you are using the full URL of a link instead of hyperlinking text (for printing purposes) you will need to add a ScreenTip. Click ScreenTip in the Hyperlink dialog window and enter descriptive text in the pop-up box.



You can use these same instructions to add a link to an image. Select your image and follow the instructions. Don't forget to add alternate text to the image as well.

When you remove a link, the link styles will still be applied to the text. To remove styles on text, highlight the text and apply a different style or select the normal style.

### Microsoft Excel

Instead of highlighting the text, click within the cell that the text is in, then follow the instructions above to add a link.

## Lists

Lists add important hierarchical structure to a document. Using the Tab button to indent content provides visual structure for sighted users, but it does not provide the document structure needed for assistive technology users.

When possible, use the list options provided by MS Office. This ensures that lists are read appropriately by assistive technologies. Don't create lists manually by simply inserting numbers, characters, images or other symbols before list items. You can define new bullet or number formats for custom bullets or numbers.

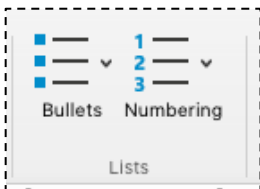
### List Types

There are two types of lists used in Microsoft Office: ordered and unordered.

- < Ordered (numbered) lists are used to present a group of items that follow a sequence.
- < Unordered (bullet) lists are used for a group of items without a sequence.

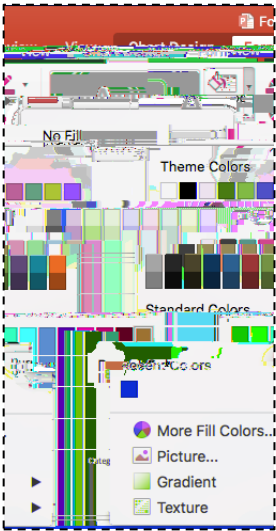
Step 1: To create a bulleted list, click the button in the Accessibility ribbon either before typing your first list item or highlight the text you want as a list and click the bulleted list button.

Step 2: To create a numbered list, click the button on the Accessibility ribbon either before typing your first list item or highlight the text you want as a list and click the numbered list button.

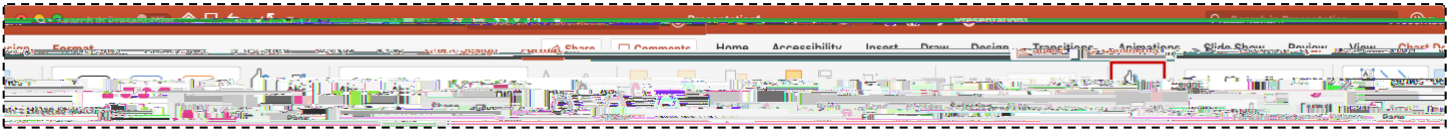




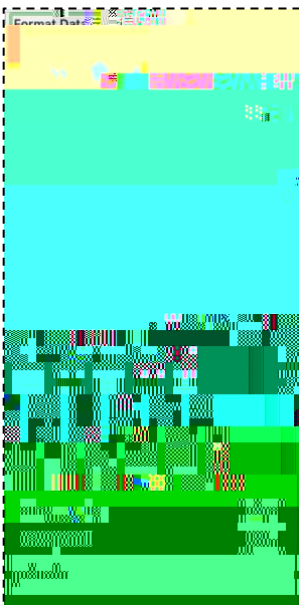
Step 4: In the Accessibility ribbon, select Shape Fill and change the color of the line.



Step 5: To change the pattern, click on the Format ribbon and click the Format Pane icon.



Step 6: This will open a window in the left-hand side of your document. Click on the paint button icon.



Step 7: Click Pattern fill in the fill section and choose a pattern from the options presented.

## How Color Impacts Accessibility

Color can have a big impact on the understanding of a document and the information it portrays. This is not only true for low vision users, but also users with color blindness. The two primary types of color blindness, red



## Accessibility Checker

Microsoft Office provides an Accessibility Checker for identifying and repairing accessibility issues. The checker classifies accessibility issues into three categories:

- ◀ **Errors:** content that makes a document very difficult or impossible for people with disabilities to access.
- ◀ **Warnings:** content that in most – but not all – cases make the document difficult for people with disabilities to access.
- ◀ **Tips:** content that people with disabilities can access, but that might be better organized or presented.

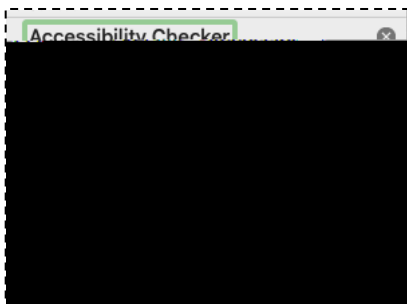
Step 1: To run the Accessibility Checker, click on the Accessibility ribbon and select the Accessibility Checker icon.



Step 2: This will open a right-hand sidebar in your document that shows the results of the checker.



Step 3: The Inspection Results show the type of Error, Warning or Tip (Missing alternative text in the screenshot below). When clicking on the specific error, warning or tip (like Picture 175 in the example), you will be rerouted to that specific place within the document.



Step 4:

## Saving the Document

### Add a Title to Your Document

Step 1: Click on the Accessibility ribbon and Properties or Go to File -> Info.

Step 2: In Properties (on the right-hand side), enter the title of your document. You can also enter the subject, author and company information. Adding categories and tags will help search engines more easily find your file online. You may need to click on “Advanced Properties” to see all available options.

**NOTE:** The Author is005C000>-6 0A(n 594.95 Tdm(t)-13 (l)14 (e)-6 7 ((o)-6 (n)-6 ( )7 (t)7 (h)- ( )7 (f)-13 (i)14

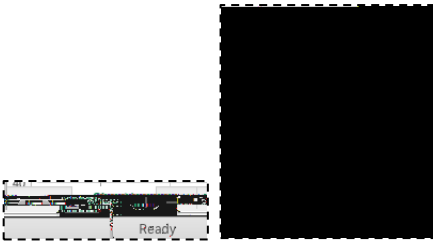
Step 2: In the properties dialog box, click on the Summary tab and enter the title of your document. You can also enter the subject, author and company information as shown below. Adding categories and keywords will help search engines more easily find your file online.

Step 3: Click OK when done.

## Microsoft Excel

Naming the sheets within your Excel document is very important for accessibility. Make sure that you name your sheets (even if there is just one) with a name that will let users know immediately what information can be found within the tab.

Step 1: Right click on the sheet name and select rename.



Step 2: Type in the new name of your sheet. When you are done renaming the sheet, you can click outside of the sheet name area and the name will be saved.

## **Saving for PDF**

To save your document as an accessible PDF, follow the instructions below.

Step 1: Click on the Save As icon in the Accessibility ribbon, or go to File

## Resources

Word Accessibility Ribbon (Windows) - <https://iastate.box.com/s/tkqm5j1qkb0xcd0ynpbc9fi2zs5r0qj2>





