Seven Steps to Creating Accessible Documents

DOR DEPARTMENT of REHABILITATION
Employment, Independence & Equality

Disability Access Services

Disability Access Services
Department of Rehabilitation

About Disability Access Services

Disability Access Services (DAS) is a unit within the California Department of Rehabilitation (DOR). We provide technical assistance and informational guidance to promote the civil rights and equality for individuals with disabilities involving:

- Employment
- Reasonable Accommodation
- Physical access of built environments
- Access to private sector goods and services
- Digital access of electronic and information technology
- Access to government programs, services, and activities

DAS Website
(https://www.dor.ca.gov/Home/DAS)

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Introduction

It is a best practice to create accessible documents. Accessible documents allow anyone to read and navigate content, with or without assistive technology. According to the World Health Organization, over 2.5 billion people need one or more assistive technology products (https://www.who.int/news-room/fact-sheets/detail/assistive-technology).

In this document, we outline seven steps to create accessible documents. If you have any challenges navigating this document, please contact us.

Alternative Formats

This document can be made available in braille and large font as a reasonable accommodation. To request an alternative format, contact Disability Access Services.

Hyperlinks in This Document

Links are created with meaningful text. The Uniform Resource Locators (URLs) are included for print purposes and are not active.

Disclaimer

This document provides guidance and awareness on how to create accessible documents. It is not meant as a determination of your organization's legal rights and responsibilities.

Step One: Use Appropriate Font Style and Size

Font Style

Not all fonts are created equal. Screens with low resolution can make certain fonts more difficult to see. Generally, sans serif fonts work best. The font styles listed below are recommended.

- Arial
- Verdana

Font Size

General Correspondence

The minimum font size is 12 points for general correspondence. The minimum size can still be too small for some readers. Therefore, be prepared to provide content in large print or allow readers to adjust the font size.

PowerPoint

The minimum font size is 24 points for PowerPoint. Depending on room configuration and size, a larger font size may be better for readability.

Step 2: Appropriate Use of Color

Never Use Color Alone to Convey Information

Color should not be the only way to communicate information. When using colors, provide an alternative method so readers understand the information.

For example, a table indicates the status of three projects. The first project has a green ‘X’ to indicate complete. The last two have a red ‘X’ to indicate not complete.

Project	Due Date	Completed
Web comparisons report	September 15	X
Webinar materials	September 20	X
Survey questionnaire	September 23	X

This use of color may be considered a sufficient way of relaying information because most people assume green indicates positive and red negative. However, individuals who are colorblind and/or have low vision may have a hard time differentiating the colors. Persons from other cultural experiences may not identify the implied meaning of these colors.

An alternative is to include another non-color dependent visual and/or symbol. For example, adding a letter. In the new table, the ‘X’ is replaced. A green ‘Y’ represents yes and red ‘N’ represents no.

Project	Due Date	Completed
Web comparisons report	September 15	Y
Webinar materials	September 20	N
Survey questionnaire	September 23	N

The same information is relayed—this time using both color and symbols. As a result, there is far less ambiguity about the project status.

Good Color Contrast

Documents with low color contrast can be difficult or impossible for users to read. For this reason, text, images of text, and non-text content need to have a minimum color contrast. The required ratios are:

- Regular size text: 4.5:1
  (Text under 17 points is regular.)

- Large size text: 3:1
  (Text 14 point bold or at least 18 point is large.)

- Non-text content: 3:1
  (Visual information and icons.)

Step Three: Alternative Texts and Wrapping Style

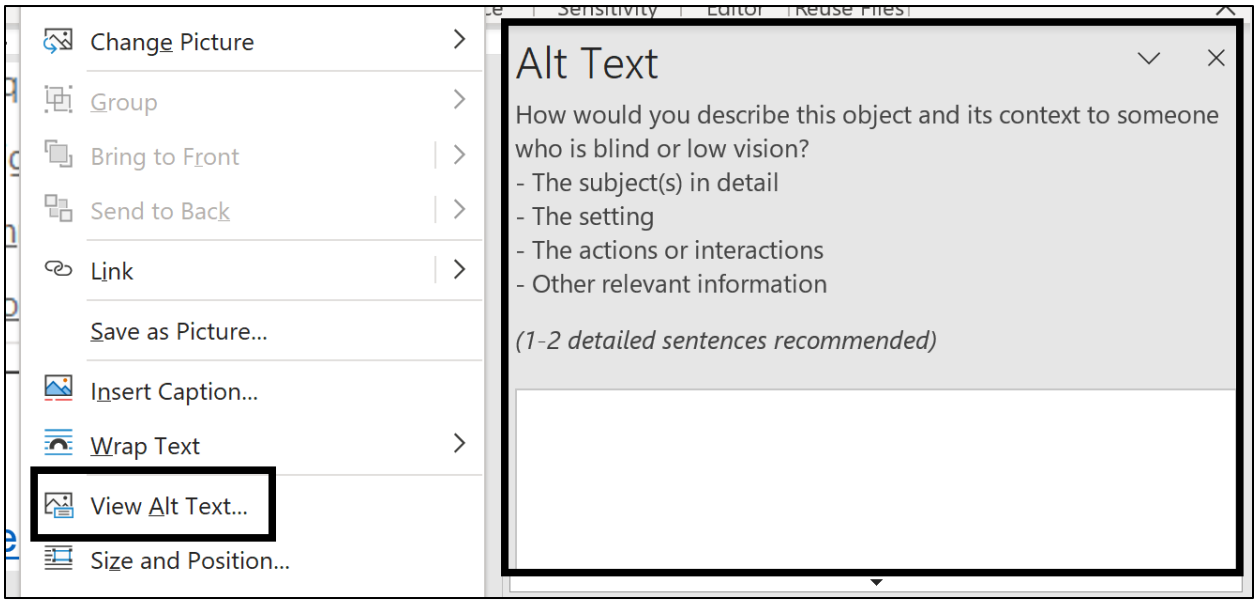
Alternative Text for Images

Images that sighted users can see should also be described to non-sighted users. Alternative text, or alt text, is an effective way to communicate this information. Alt text provides the text equivalent description and allows readers to perceive the information without vision.

To add alt text in Microsoft Office:

1. Right click image.
2. Go to View Alt Text.
3. Type alt text in the field.

Via Keyboard: Shift+Right Arrow, Shift+F10, A, type alternative text.



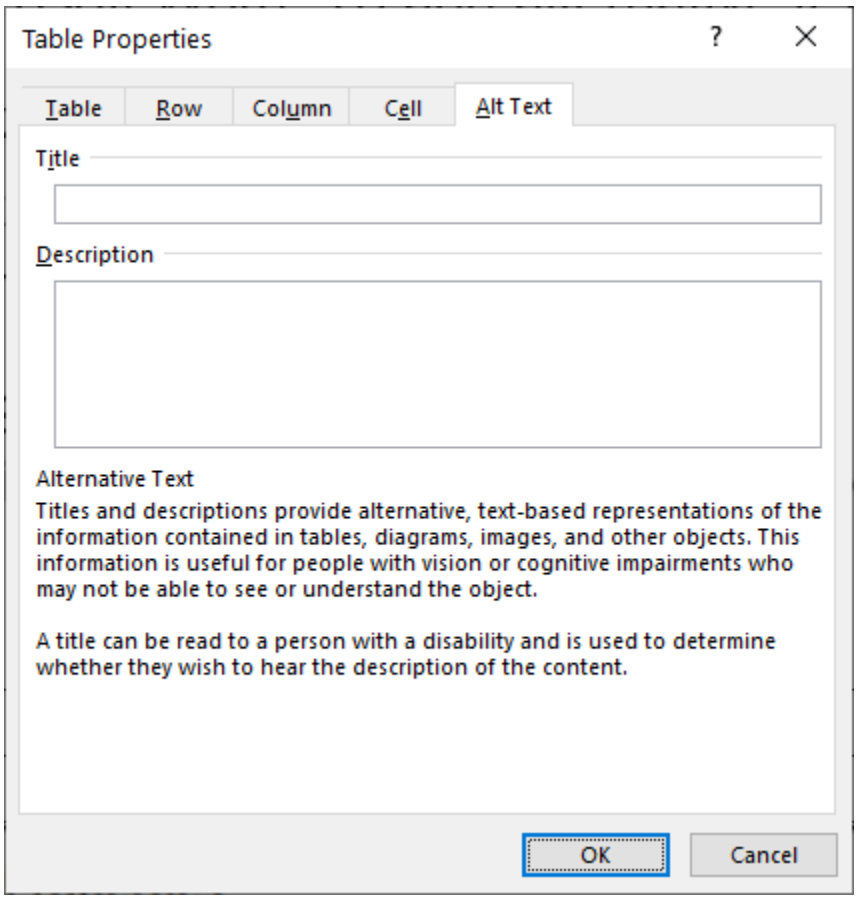
It is acceptable to not add alternative text to decorative images. These images do not add value and can be Marked as Decorative in the Alt Text pane.

Alternative Text for Tables

Alternative text can also be added to tables to detail additional content that would be useful for a user to know. This feature is optional and is available in Microsoft Word. To add alternative text:

1. Right click table, select Table Properties.
2. Navigate to Alt Text tab.
3. Type in a Title and Description.

Via Keyboard: Shift+F10, R until you get to Table Properties, press Enter, Alt+A, Tab to cycle through the Title, Description, and OK options.

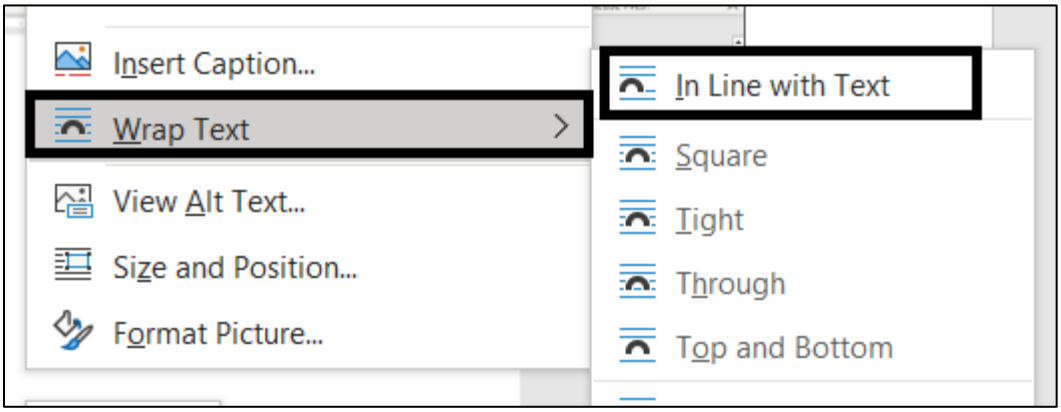


Wrap Text

Text wrapped around an image or graphic will confuse a screen reader. Always set the wrapping style of images to **In Line with Text.** This ensures the image is read in the correct order.

1. Right click image.
2. Select Wrap Text.
3. Select In Line with Text.

Via Keyboard: Shift+Right Arrow, Shift+F10, W, I.



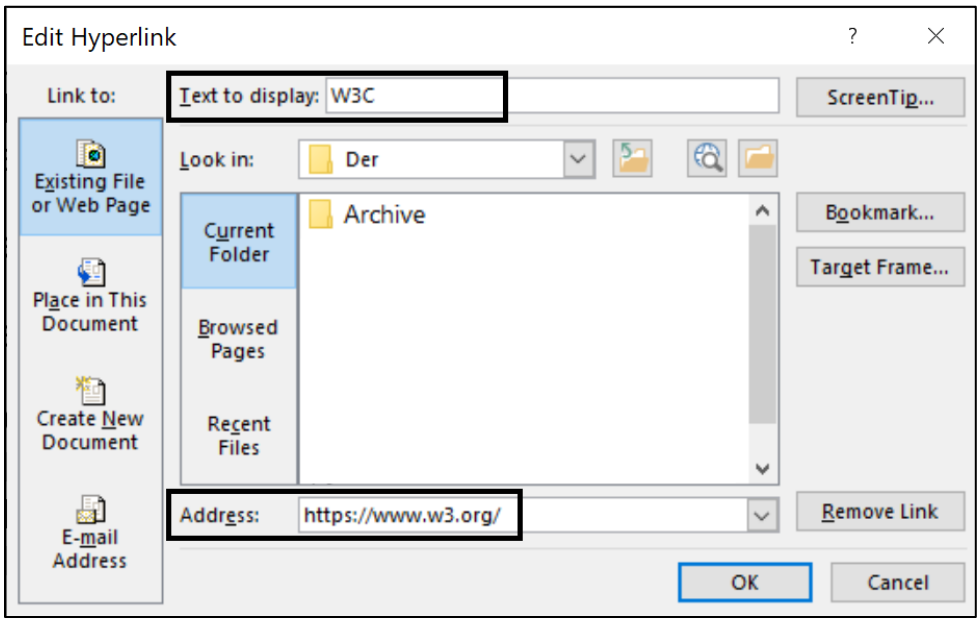
Step Four: Meaningful Hyperlink Text

Although phrases like, Click Here, or Visit, are commonly used as text for hyperlinks, they are not sufficient. Hyperlink text should clearly define the link destination.

To create a meaningful hyperlink:

1. Copy the URL.
2. Identify the text you want to use for the link.
3. Highlight the text, right click, and select Link.
4. In the Insert Hyperlink dialogue box, notice:
    a. Text to Display: This is the text you highlighted.
    b. Address: Your focus will be on here already. Type or paste the link destination.
5. Select Ok.

Via Keyboard: Control+C to copy link, Control+Shift+Right Arrow to highlight text, Control+K, Control+V, Enter.



Step Five: Header Rows in Tables

Table data cells have a relationship with their row and/or column headers. To ensure all individuals can perceive this information, assign a header row.

Table Header in Word

To assign a table header in Microsoft Word:

1. Insert a table in the location desired.
2. Highlight the top row.
3. Right click, select Table Properties
4. In the pop-up dialogue box, navigate to the Row tab.
5. Check the box Repeat as Header Row at the top of each page.
6. Select Ok.

Via Keyboard: Alt+N, T, I, enter number of columns, Tab, then enter number of rows, press Enter.

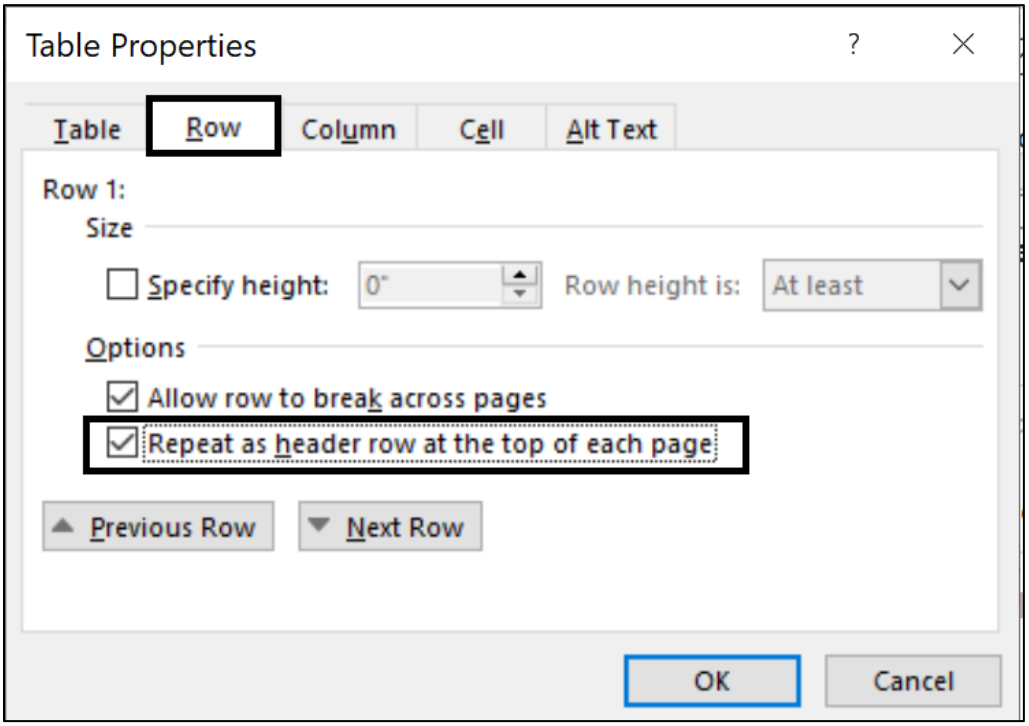


Table Header in Excel

To assign a table header in Microsoft Excel:

1. Select all data cells.
2. Go to Insert tab, in the Tables group, click Table.
3. In the Create Table dialogue box, check My Table has Headers.

Next, create a name range for the header cells. This step is important to help screen readers identify and navigate cells.

1. Place focus on header row and/or column.
2. In the Formulas tab, Defined Names group, select Define Name.
3. In the New Name dialogue box, under Name, enter a formula containing the following (include periods).

   HeaderRegionTableNumber.FirstCellCoordinate.
   LastCellCoordinate.SheetNumber

   a. HeaderRegion: This will either be “ColumnTitle”, “RowTitle”, or “TitleRegion”. Enter:

      ColumnTitle – if the table contains column headers only.

      RowTitle – if the table contains row headers only.

      TitleRegion – if the table contains both column and row headers.

   b. TableNumber – Every table is assigned a table number by default. For example, the first table created is 1, second is 2, etc. Input that number here.

   c. FirstCellCoordinate – This is the coordinate of the first cell in the table.

   d. LastCellCoordinate – This is the coordinate of the last cell in the table.

   e. SheetNumber – Each sheet is assigned a number, starting with 1. Enter that number here.

4. Click Ok.

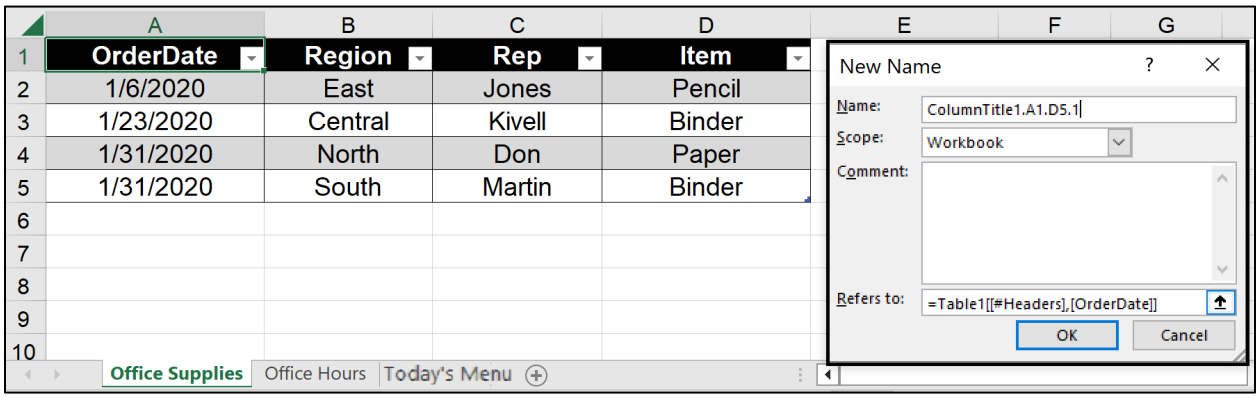
Via Keyboard:

1. Create a table: Navigate to a data cell, Control+A, Control+T, press Enter.
2. Create name range: Control+G, Tab, Down Arrow (until you get to the desired table), Enter, Up Arrow, Alt, M, M, D, type formula, press Enter.

The following are examples of correct name range implementation.

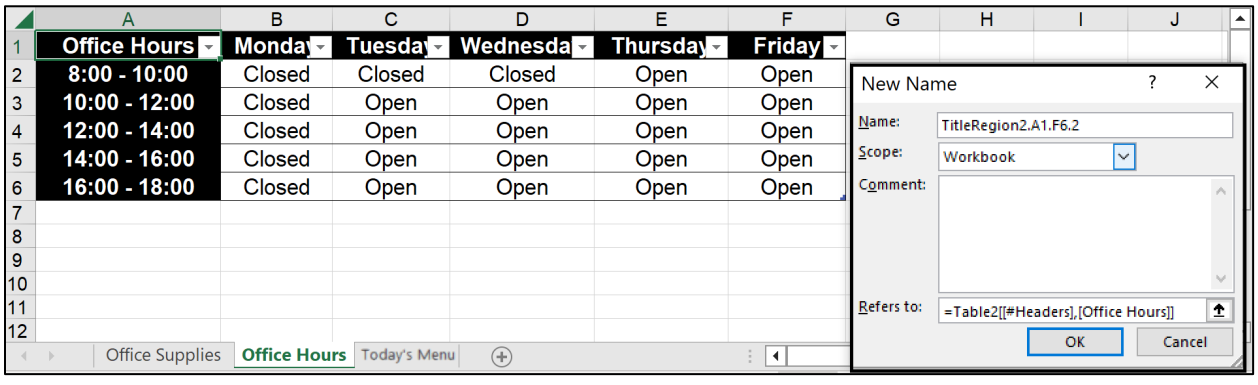
Example 1: Table with Column Headers

The first sheet in an Excel file has a table displaying office supply orders. The table contains four columns five rows (A1:D5). In the New Name dialogue box, the Name field has the formula: ColumnTitle1.A1.D5.1



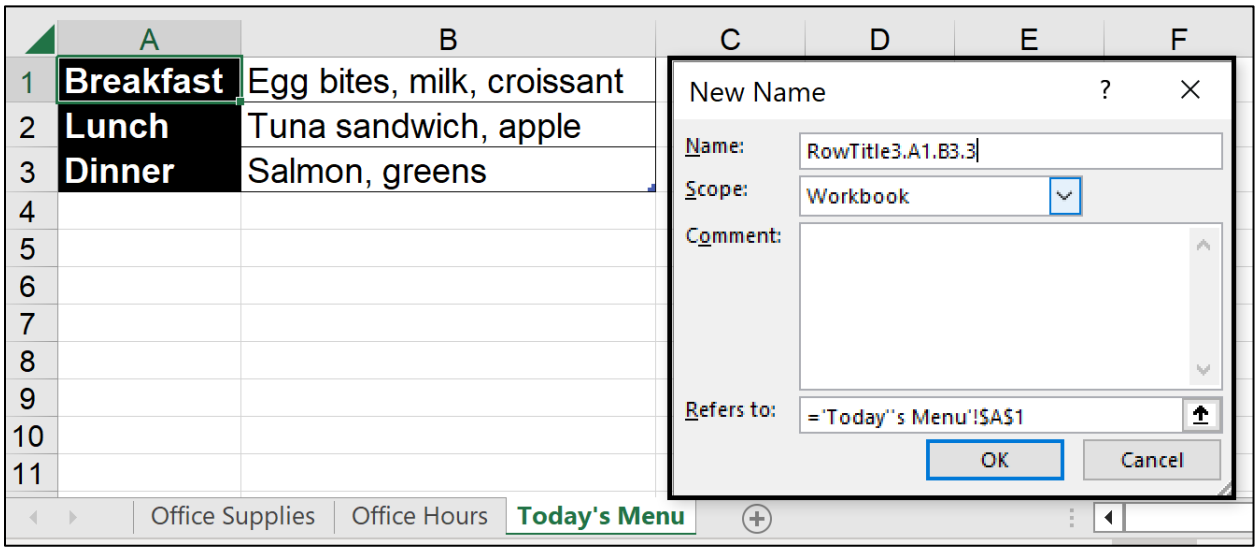
Example 2: Table with both Row and Column Headers

The second sheet in the Excel file has a table displaying Office Hours. This table has six columns, six rows (A1:F6). In the New Name dialogue box, the Name field has the formula: TitleRegion2.A1.F6.2



Example 3: Table with Row Headers

The last sheet in the Excel file has a table displaying Today's Menu. The table has two columns three rows (A1:B3). In the New Name dialogue box, the Name field has the formula: RowTitle3.A1.B3.3



Additional Table Tips

- Always construct simple tables.
- Use one row for the Header.
- Never merge or split cells.
- Avoid blank cells, rows, and/or columns.

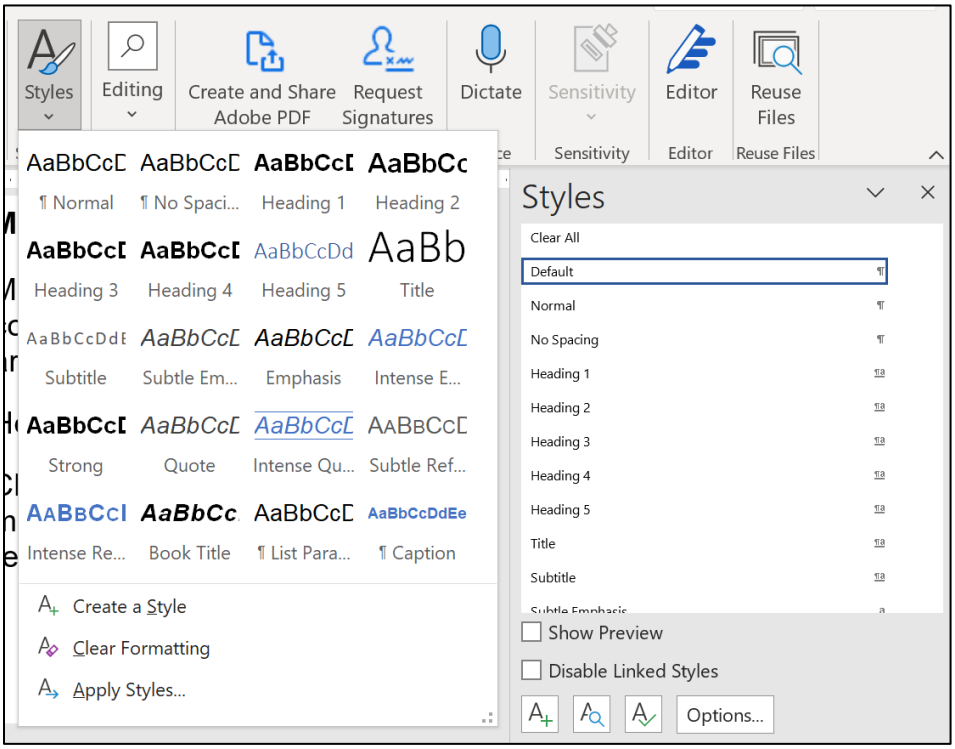
Excel Only

- Use unique sheet names.
- Place focus on the cell A1 or first cell with content.
- Provide descriptive Table Names.

Step Six: Built-in Styles & Designs

Microsoft Word

Microsoft Word has built in styles to format and organize content. These styles can be applied to Headings, Lists, etc. The Styles are in the Home tab or via Alt+Control+Shift+S.



Heading Style

Changing text appearance, such as applying bold or using all caps, does not make text into a heading. You need to assign heading styles. To apply a Heading Style:

1. Select your text.
2. Go to the Styles Pane.
3. Select the desired heading level.

Via Keyboard: Control+Shift+Right Arrow, Alt+Control+Shift+S.

Heading Order

Microsoft Word goes up to nine heading levels and Adobe Acrobat six. You are not required to use all heading levels, but they do have to follow a sequential order. This means the heading introducing the big idea will be a Heading 1. Major subsections of the big idea will be a Heading 2. Major subsections of the 2 will be 3. You cannot start with a Heading 1 then jump to a 3 or start a document with a Heading 6.

Table of Contents

Applying headings has another benefit. A Table of Contents can be added to the document using the headings. Think of this as an outline that makes it easy to locate content and navigate to the desired sections. To add a Table of Contents:

1. Place cursor in document.
2. Go to References tab.
3. Click Table of Contents.
4. Select a style.

Via Keyboard: Alt, S, T, Down Arrow to cycle through options.

List Formatting

Lists made with repeated use of the Tab key or Spacebar are not true lists. A correct list format allows users to navigate between items and move in and out of lists. To add a List:

1. Place cursor in document.
2. Navigate to the **Home** tab**, Paragraph Group**.
3. Select one of the list controls.

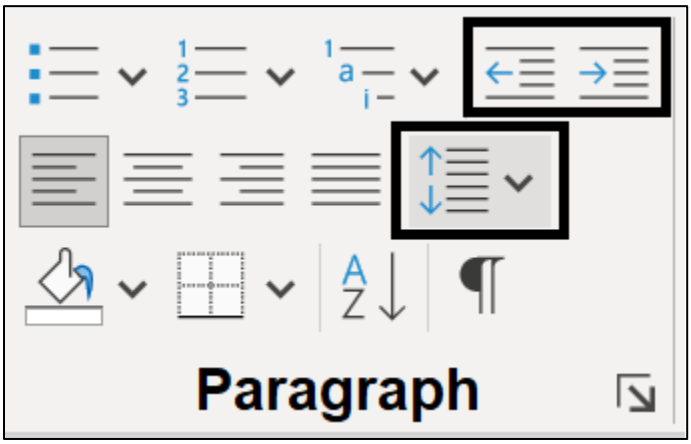
Via Keyboard: Alt, H, then either U for Unordered list (bulleted list), N for Numbered list, or M for more options for the list.

Indent & Line Spacing

When the Tab key or Spacebar are used to visually create space between content, the screen reader reads these as “blank” to a user. Having one or two blanks is not an issue but hearing one after every paragraph or consecutively can be distracting and confusing. For a better reading experience, use the Indent and Line Spacing features. To access:

1. In the Home tab, under Paragraph group, select:
    a. Decrease or Increase Indent
    b. Paragraph Spacing

Via Keyboard: Alt, H, then either AO to decrease or AI to increase indent. Alt, H, K, down arrow to navigate the spacing options, press Enter to select.



Text Boxes

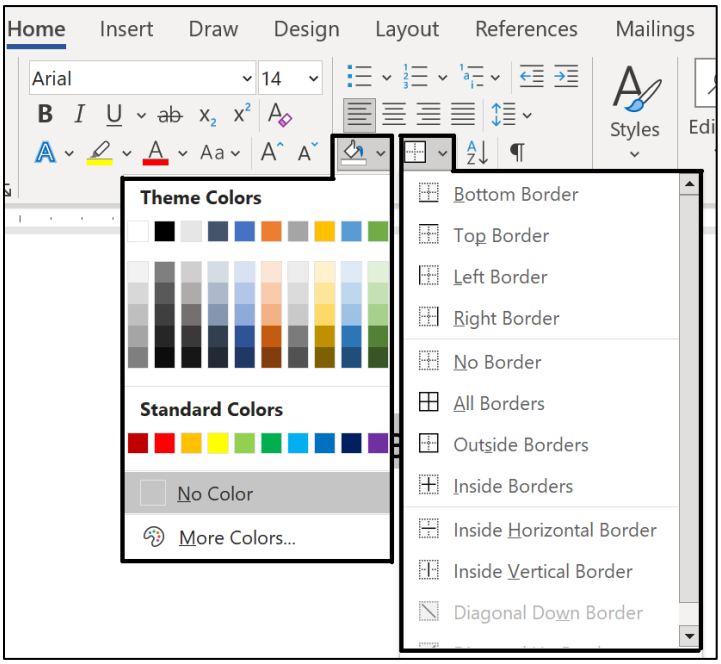
Do not use Text Boxes as they are inaccessible. A screen reader will not read the contents of Text Boxes until it reaches the end of the document.

To emphasize text, here is an alternative:

1. Select the text.
2. In the Home tab, Paragraph group, go to Borders.
3. Select Outside Borders.
4. Next, choose a fill color. In the Home tab, Paragraph group, go to Shading.
5. Select desired color. (Ensure colors are accessible.)

Via Keyboard:

1. To add the border: Control+Shift+Right Arrow, Alt, H, B, S.
2. To add shading: Alt, H, H, Arrow to desired color.



Since screen readers do not announce text color, include clues so users know what the text is for, and when it begins and ends. Words like Case Study at the beginning and End Case Study at the end are beneficial.

Microsoft PowerPoint

Slide Layout

PowerPoint contains a collection of pre-set slide layouts. To ensure the slideshow is accessible, use these pre-set templates. To apply:

1. In the Home tab, choose New Slide.
2. Pick a layout.

Design Themes

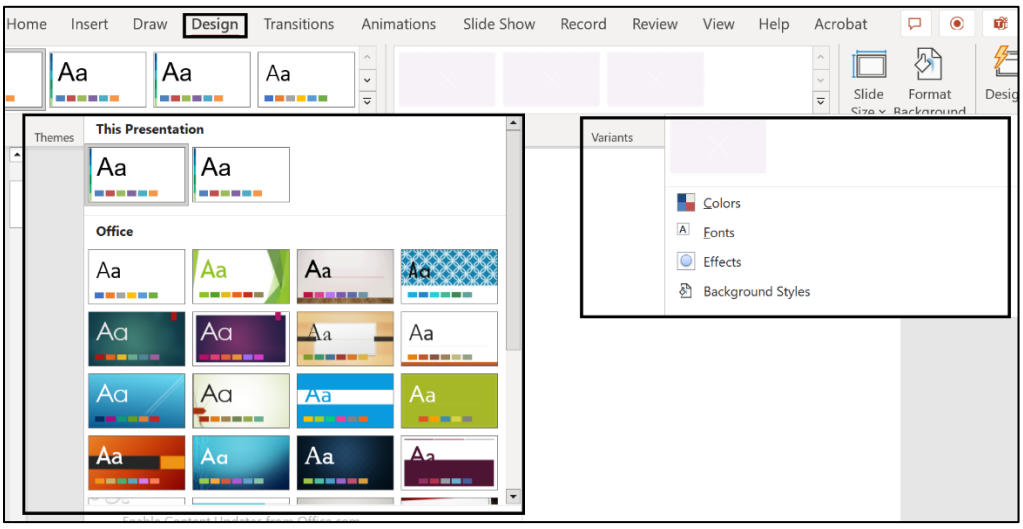
PowerPoint offers built-in designs, however, not all are accessible. When selecting a built-in design theme, ensure it meets accessible design considerations. To apply a design theme:

1. Go to the Design tab.
2. In the Themes group, expand the drop down menu.
3. Select design.

From **Design** tab, navigate to Variants to adjust color and font choices.

Via Keyboard:

1. To access Design Themes: Alt, G, H.
2. To access Variants: Alt, G, V, then either C for Color or F for font.



Additional PowerPoint Considerations

Usability of PowerPoint

PowerPoint can be an effective tool for presentations but is not the best file format when considering accessibility and usability. A more accessible way of distributing PowerPoint slideshows is by exporting them into either Portable Document Format (PDF) or HyperText Markup Language (HTML). These formats can be made accessible, and they are smaller file sizes for downloading.

Animations and Transitions

Avoid animation and automatic slide transitions since they:

- Can be distracting
- Can cause screen readers to re-read slides
- Can read parts of the slide out of order
- May not give users enough time to read slide content

Data Tables

Tables can be added to PowerPoint but are not accessible. If data will be presented in tables, provide text descriptions, or consider saving the presentation as a PDF then adding accessibility information in Adobe Acrobat Pro.

Embedded Multimedia

Ensure embedded videos are captioned and that the player controls are accessible. If an audio file is embedded, ensure a transcript is included.

Text Boxes

We recommend never adding Text Boxes. If you use Text Boxes, check the reading order. Text Boxes are always read by a screen reader after all Content Placeholders. Content Placeholders are the containers that display slide content. Slides with more than one Text Box complicate the reading order. Additionally, text placed in Text Boxes will not appear in the Outline view. This complicates the conversion from PowerPoint to HTML.

Step Seven: Accessibility Testing

Both Microsoft Office and Adobe Acrobat have built in accessibility checkers. These can be used to check your document's accessibility. However, do not rely on machine testing alone.

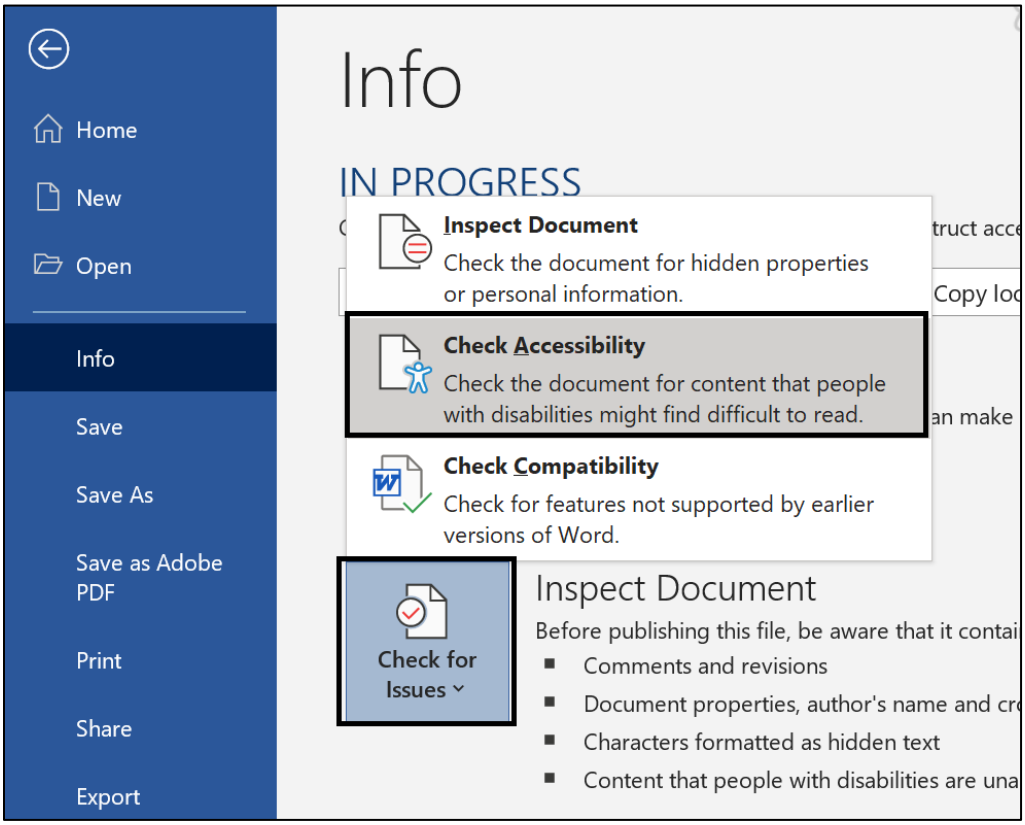
In addition, incorporate human testing. Use a screen reader to listen to the document. Preferably, develop an accessibility testing team of individuals experienced at using Assistive Technology.

Microsoft Office

To access the Accessibility Checker in Microsoft Word:

1. Go to File, Info.
2. Check for Issues.
3. Check Accessibility.

Via Keyboard: Alt, F, I, I, A



Adobe Acrobat Pro

To access the Accessibility Checker in Adobe Acrobat Pro, first add the Accessibility Tool.

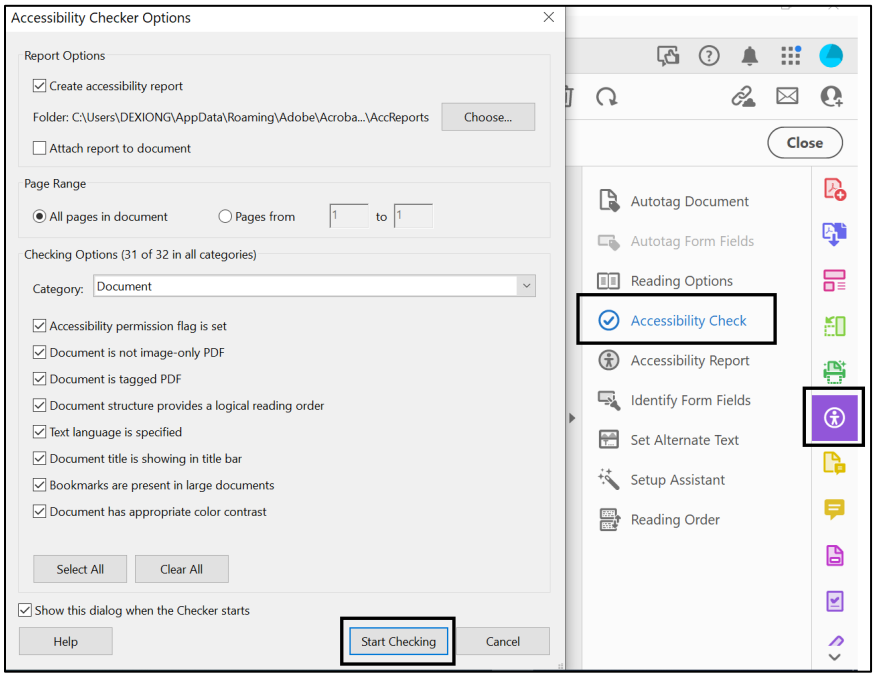
1. Go to View.
2. Select Tools.
3. Click Accessibility.
4. Select Open.

Next:

1. Select Accessibility Check.
2. In the Accessibility Checker Options dialogue box, select Start Checking.

Via Keyboard:

1. To open the Accessibility Tool: Alt, V, T, arrow down to Accessibility, press Enter twice.
2. To run an Accessibility Check: F6, arrow down to Accessibility Check, press Enter twice, F6 until you hear “Document” along with the number of issues present for that category.



Resources

- Adobe Acrobat Accessibility Series (videos) (https://tinyurl.com/AcrobatAccessibilitySeries)
- California Department of Social Services Accessibility Videos (https://www.youtube.com/watch?v=1tgP82MvXzk&list=PLdcwkELts-sz8H1-6gijjfC8l8Br8w3sf)
- Color Checking Tools
    - Web Accessibility in Mind Contrast Checker (https://webaim.org/resources/contrastchecker/)
    - The Paciello Group Colour Contrast Analyser (https://www.tpgi.com/color-contrast-checker/)
- Department of General Services Management Memo 03-08 (https://tinyurl.com/DGS-ManagementMemo0308)
- Department of Rehabilitation Accessibility Standards (https://publicaccessstorage.blob.core.usgovcloudapi.net/publicsitefiles/DOR%20Documents/Disability%20Access%20Services/DOR%20Document%20Accessibility%20Standards%20June%202019.pdf)
- DOR Web Accessibility Toolkit (https://www.dor.ca.gov/Home/WebAccessibilityToolkit)
- Forms
    - Governor's Committee on People with Disabilities (video) (https://www.youtube.com/watch?v=dzpj5CwyYOU)
    - Creating Accessible Forms in Microsoft Word (http://www.freedomscientific.com/doccenter/archives/Training/accessible-forms-in-word.htm)
- Health and Human Services Accessibility Conformance Checklists (https://www.hhs.gov/web/section-508/accessibility-checklists/index.html)

- Microsoft:
  - Create Accessible Office Documents (https://support.microsoft.com/en-us/office/create-accessible-office-documents-868ecfcd-4f00-4224-b881-a65537a7c155)
  - Accessibility Training videos (https://tinyurl.com/MS-AccessibilityVideos)
  - Microsoft Disability Answer Desk (https://www.microsoft.com/en-us/Accessibility/disability-answer-desk?activetab=contact-pivot%3aprimaryr8)
  - Outlook Accessibility (https://tinyurl.com/OutlookAccessibility)
- Office of the Governor, State of Texas (http://gov.texas.gov/disabilities/accessibledocs)
- Section 508 Create Accessible Digital Content (https://www.section508.gov/create/)
- Web Content Accessibility Guidelines (WCAG) Quick Reference (https://www.w3.org/WAI/WCAG21/quickref/)
  - Specific success criteria referenced in this resource:
    - 1.1.1 Non-text Content (https://www.w3.org/WAI/WCAG21/Understanding/non-text-content.html)
    - 1.3.1 Information and Relationships (https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships.html)
    - 1.4.1 Use of Color (https://www.w3.org/WAI/WCAG21/Understanding/use-of-color.html)
    - 1.4.3 Contrast (Minimum) (https://www.w3.org/WAI/WCAG21/Understanding/contrast-minimum.html)
    - 1.4.11 Non-text Contrast (https://www.w3.org/WAI/WCAG21/Understanding/non-text-contrast.html)

- 2.4.4 Link Purpose (https://www.w3.org/WAI/WCAG21/Understanding/link-purpose-in-context.html)
- 2.4.6 Headings and Labels (https://www.w3.org/WAI/WCAG21/Understanding/headings-and-labels.html)

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