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Center for Inclusive Design and Innovation

Spreadsheet Accessibility Guide

MICROSOFT EXCEL

This full how-to-guide was created by the Center for Inclusive Design and Innovation (CIDI) and includes screenshots, examples and key strategies useful for creating accessible Microsoft Word Documents. While Microsoft Word is the most widely used word processing program, the strategies and concepts in this guide can also be applied to other programs such as Google Sheets.

This guide has been formatted for improved accessibility and contains helpful bookmarks for easy navigation. These bookmarks can be accessed via the Bookmark pane in your PDF viewer.

What Makes a Spreadsheet Accessible?

A spreadsheet is accessible when all users, including people who are blind, have low vision, limited mobility, color blindness, and cognitive disabilities, or who use assistive technologies, can understand, navigate, and interact with the data effectively. Accessible spreadsheets are designed so that information is not dependent on visual cues alone and can be accurately interpreted by screen readers and other assistive technologies.

Accessible spreadsheet design helps improve access in the following ways:

- **Screen reader users can access content** through clear table structures, descriptive headers, and meaningful worksheet names.
- **Navigation is improved** by organizing content logically and keeping spreadsheet layouts simple and predictable.
- **Individuals with limited motor accessibility are supported** by allowing content to be accessed via a keyboard alone.
- **Individuals with visual barriers are supported** by providing sufficient color contrast and avoiding the use of color alone to communicate meaning.
- **Individuals with cognitive barriers are assisted** by use of clear labels, consistent formatting, and plain language.

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Key Accessibility Strategies

To learn about each of the key strategies for creating accessible Excel spreadsheets, please navigate through the following topics:

- Descriptive Labels and Titles
- Logical Reading Order
- Formatted Data Tables
- Column Headers
- Table Names
- Adequate Color Contrast
- Easy to Read Fonts
- Symbols that assistive technology will recognize
- For Charts/Graphs: Alternative Text and Access to Source Data

Descriptive Labels and Titles

Labels help to clearly identify information. In Excel tables and worksheets, labels include worksheet names, as well as column and row headers. Other labels include titles of data sets and table names. To help users navigate worksheets in a spreadsheet, add unique descriptive names to each worksheet tab, rather than using the default label Sheet 1, Sheet 2, etc. It should be noted that there is a limit of 31 characters for worksheet names. The screenshot example below includes **descriptive worksheet names**.

Labeled Sheet Name example:



See an example of data set title shown in Examples 2 and 3 below: “Children with Disabilities by Educational Environment (School-Age).”

Logical Reading Order

Worksheets with a logical and predictable reading order that are read from left to right, and top to bottom, are easier for everyone to navigate, including people using screen readers. Logical and predictable reading order includes entering data in consecutive cells in a grid without leaving blank cells or splitting or merging cells.

To improve reading order, use the following guidelines:

1. Make sure you include information in cell A1. (Do not leave cell A1 blank). Screen readers will begin reading the worksheet at cell A1. Including a title or description of the data in cell A1 is helpful for everyone. The example image below includes a title in cell A1.

	A
1	CUMULATIVE NUMBER OF INFANTS AND TODDLERS WHO RECEIVED EARLY INTERVENTION SERVICES

2. Enter data in consecutive cells in a grid. Consecutive cells should have a logical reading order which can be accessed from left to right, then top to bottom. For examples, see the Formatted Data Tables section, below.
3. Avoid blank cells which can give the impression that data is missing.
4. Do not merge or split cells. This can present incorrect reading order, or the appearance that data is missing. Example shown in the Formatted Data Table section.

Formatted Data Tables

A range of data entered into cells in a grid can be made accessible once structured table formatting is applied. While visual formatting can improve appearance, applying structured table formatting is essential to making a table accessible. See the examples below to compare an unformatted range of data and a formatted Excel table.

The following example, Example 1, shows data inserted into a spreadsheet before formatting as a table. Descriptive header labels are included but will not be recognized by screen readers as headers until formatted as table headers.

Example 1 – Range of data not formatted as an Excel table.

	A	B	C
1	**Children with Disabilities by Educational Environment (School-Age)**		
2	**Educational Environment**	**Student Count**	**Percentage**
3	Inside regular class 80% or more of the day	23,355	65%
4	Inside regular class 40% through 79% of the day	8,749	24%
5	Inside regular class less than 40% of the day	3,426	9%
6	Separate School	260	1%
7	Residential Facility	84	0%
8	Homebound/Hospital	26	0%
9	Correctional Facilities	86	0%
10	Parentally Placed In Private Schools	101	0%
11	**Calculated Subtotal**	**36,087**	100%

The following example, Example 2, shows data formatted as a table with identified headers and color banded rows, along with high contrast colors.

Example 2 – Data formatted as an Excel table with banded rows and column headers.

Children with Disabilities by Educational Environment (School-Age)		
Educational Environment	**Student Count**	**Percentage**
Inside regular class 80% or more of the day	23355	65%
Inside regular class 40% through 79% of the day	8749	24%
Inside regular class less than 40% of the day	3426	9%
Separate School	260	1%
Residential Facility	84	0%
Homebound/Hospital	26	0%
Correctional Facilities	86	0%
Parentally Placed In Private Schools	101	0%
Calculated Subtotal	**36087**	100%

To format data as a table, as shown above in Example 3:

1. Highlight the data to include in the table
2. Select Format as Table on the Accessibility ribbon.



The table should begin with the column headers on the first row. Do NOT include the title of the data set in the formatted table itself. Titles should be placed in the cell above the table.

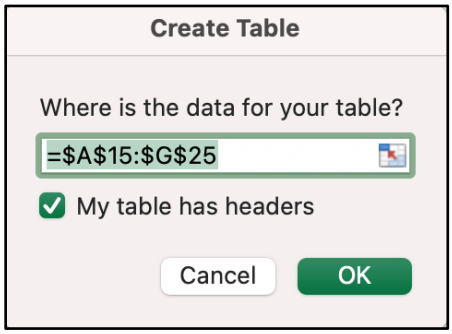
The title can be **centered across the range of cells**, but cells should NOT be merged. To center the title:

1. Highlight the cells to center across.
2. Right click and choose Format Cells.
3. Go to Alignment tab.
4. Select “Center Across Selection.”

Column Headers

Create descriptive column headers and/or row header labels that clearly identify the table data. The data in the top row of the table is considered the column header by default and will be read by a screen reader before the data in the adjacent cells within the column.

When creating a table, select the “My table has headers” option.

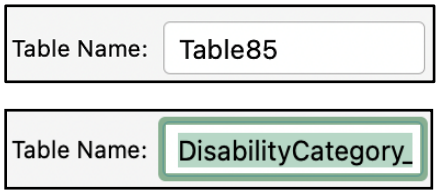


When inserting a table, choose a table style with colors that provide good contrast. Table Styles on the Accessibility Ribbon provides options with good contrast such as alternating black and white rows or dark blue and white. An example of this is shown in the Accessibility Ribbon section.

Table Names

Provide meaningful names for tables. Tables created in Excel will be labeled by default with generic names that include a number such as Table 1. Renaming tables will help a person using a screen reader to better navigate tables within a spreadsheet.

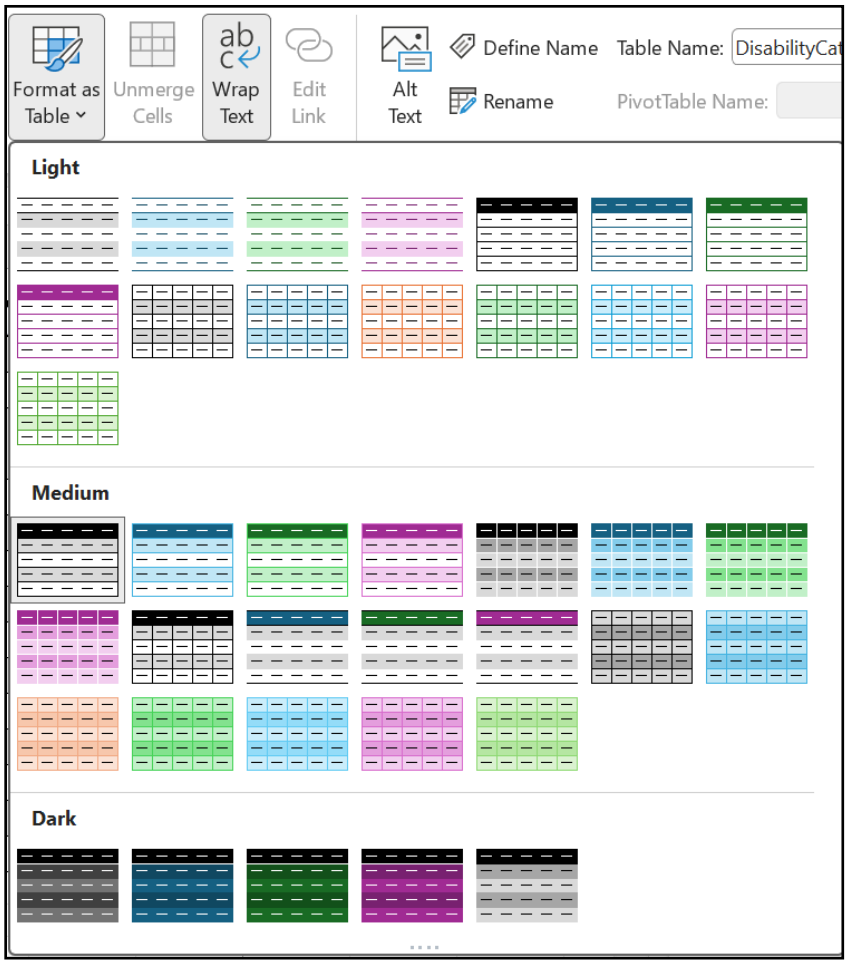
To rename a table, select or click within the table to access the Table Design ribbon or the Table Name tool on the Accessibility ribbon. Then enter a new name in the **Table Name:** entry field, following Excel naming requirements. The example below shows the generic table name (Table 85) and the new descriptive table name following Excel naming requirements, (DisabilityCategory).



Use Excel table name requirements to rename generic names. Valid characters must be used, and spaces cannot be used to separate words. See Microsoft’s guide on renaming an Excel Table for additional naming requirements.

Color Contrast

Always use high contrast between font colors and background colors, including the use of banded row table styles, as shown earlier in Example 2. When choosing a table style from the Format as Table option, select a style from the Medium and Dark options to ensure higher contrast.



Additionally, when choosing colors:

- Do not rely on color coding **alone** to convey meaning. If color is used to convey meaning, add text description or alt text description.
- Do not use red and green color combinations, which are difficult to distinguish for people who have red-green color blindness.

Font Selection and Formatting

Use the following guidelines to choose accessible fonts:

1. **Choose sans serif fonts** that are easy to read such as Calibri, Aptos, Arial, and Tahoma.
2. **Use a font size** of at least **12 pt.**
3. **Apply bold font to important rows,** such as the header row or total row(s).
4. **Use Title or Proper case for text**. Do NOT use all caps or all uppercase.
   To easily change from all caps to Title case:
   a. Use the Excel function PROPER to change the case from all caps to Title or Proper Name case.
   b. Enter "=PROPER(A1)" and then fill down.
   For full instructions, visit Microsoft Change the Case of Text for Excel.

The following example, Example 3, of a table in all caps is more difficult to read. Additionally, when written in all caps, screen readers will change the pitch or may read out letters individually.

Example 3 – Table with text in all caps.

RACE/ETHNICITY
HISPANIC/LATINO
AMERICAN INDIAN OR ALASKA NATIVE
ASIAN
BLACK OR AFRICAN AMERICAN
NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
WHITE
TWO OR MORE RACES

The following example, Example 4, shows a table in title case. Title case is easier to read for most users and is preferred for screen readers.

Example 4 – Table with text in Title case.

Race/Ethnicity
Hispanic/Latino
American Indian or Alaska Native
Asian
Black or African American
Native Hawaiian or Other Pacific Islander
White
Two or More Races

Symbols

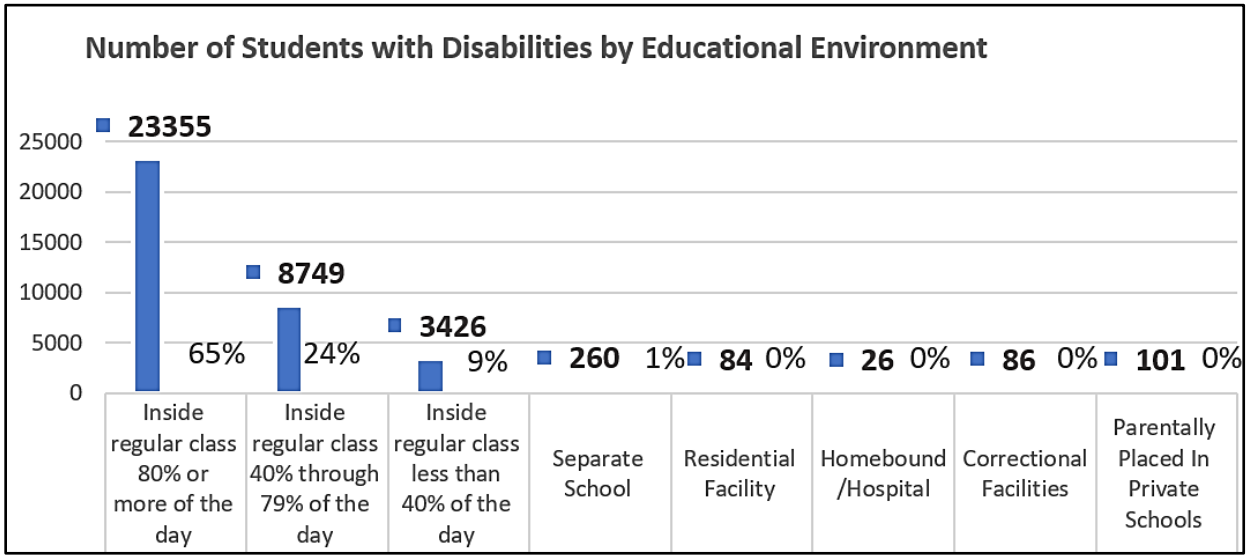
When using a symbol to indicate redacted information, use a symbol that a screen reader will read aloud. For example, a screen reader will read some symbols such as an asterisk (*) aloud but will skip and not always read a period (.) aloud.

Alternative (Alt) Text and Access to Source Data

If the spreadsheet includes a chart or graph, always add an alt text description to it. When possible, provide an accessible table with the chart or graph. When a table of source data is included, this may lessen the detail needed in the alt text description.

This following example, Example 5, shows a chart created and displayed within an Excel spreadsheet. The chart is an image, meaning the information will not be accessible to a person using a screen reader without additional steps.

Example 5 – Chart of Children with Disabilities by Educational Environment (School-Age):

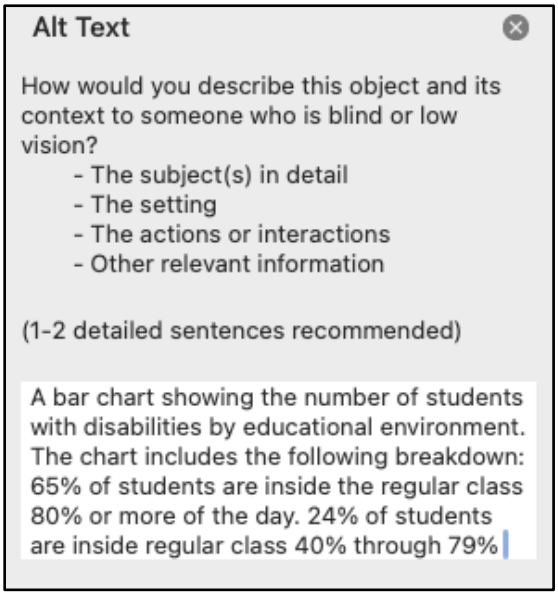


If the chart does not include access to a table with source data, the following example alt text description should be added:

> A bar chart showing the number of students with disabilities by educational environment. The chart includes the following breakdown: 65% of students are inside the regular class 80% or more of the day. 24% of students are inside regular class 40% through 79% of the day. 9% of students are inside regular class less than 40% of the day.1% of students attend a separate school. And fewer than 1% of students are in other environments outside of the school.

To add an alt text description to a chart or graph:

1. Right click on the chart or graph.
2. Select View Alt Text.
3. Enter description in the Alt Text description field.



The following example, Example 6, shows a table of the source data for the "Example 5" chart. This is an accessible option for a person using a screen reader.

Example 6 – Table of Children with Disabilities by Educational Environment (School-Age):

Educational Environment	Student Count	Percentage
Inside regular class 80% or more of the day	23355	65%
Inside regular class 40% through 79% of the day	8749	24%
Inside regular class less than 40% of the day	3426	9%
Separate School	260	1%
Residential Facility	84	0%
Homebound/Hospital	26	0%
Correctional Facilities	86	0%
Parentally Placed in Private Schools	101	0%
Calculated Subtotal	**36087**	**100%**

Since the accessible table provides source data for the chart, the following is an example of a shortened alt text description for the chart:

> A bar chart showing the number of students with disabilities by educational environment with data provided in Table below.

Fully Accessible Table Example

The following example, Example 7, shows an accessible table. This table includes almost all of the accessibility features described in this guide

Example 7 – Accessible Table of Children with Disabilities by Educational Environment (Early Childhood).

	A	B	C
1	This sheet contains six data tables with count and percentage of students by age and environment. The symbol • indicate a redacted field of information.		
2	**Children with Disabilities by Educational Environment (Early Childhood)**		
3	**Educational Environment**	**Student Count**	**Percentage**
4	A.1. Attending a regular early childhood program at least 10 hours per week AND receiving the majority of hours of special education in the regular early childhood program	129	**6%**
5	A.2. Attending a regular early childhood program at least 10 hours per week AND receiving the majority of hours of special education in some other location	135	**6%**
6	B.1. Attending a regular early childhood program less than 10 hours per week AND receiving the majority of hours of special education in the regular early childhood program	82	**4%**
7	B.2. Attending a regular early childhood program less than 10 hours per week AND receiving the majority of hours of special education in some other location	56	**3%**
8	C.1. Attending a special education program (NOT in any regular early childhood program),specifically, a separate special education class	1,447	**65%**
9	C.2. Attending a special education program (NOT in any regular early childhood program),specifically, a separate school	207	**9%**
10	C.3. Attending a special education program (NOT in any regular early childhood program),specifically, a residential facility	*	*
11	D.1. Attending neither a regular early childhood program nor a special education program and receiving the majority of hours of special education at home	*	*
12	D.2 Attending neither a regular early childhood program nor a special education program and receiving the majority of hours of special education at the service provider location or some other location not in any category	147	**7%**
13	**Calculated Subtotal**	**2,211**	**100%**

The table in Example 7 is accessible since it includes:

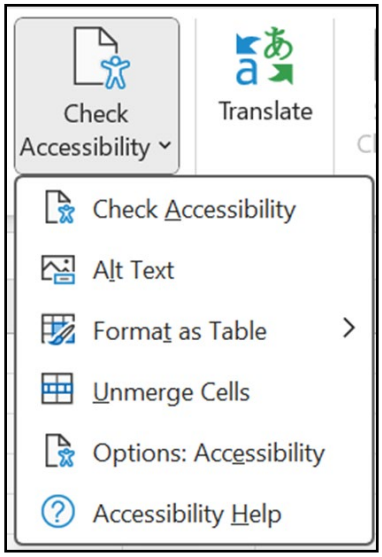
- Logical reading order from left to right, top to bottom.
- Information cell A1 describing the content of the worksheet.
- No merged, split, or blank cells.
- Clearly labeled and defined column headers (Row 3).
- Adequate color contrast between background color and text.
- Improved readability with banded rows with high contrast alternating colors such as black and white or dark blue and white.
- Sans serif font at 12-point size. In this example Calibri is used.
- Bold font in header row and totals (Rows 3 and 13).
- Redacted information indicated using an accessible symbol * and described (Row 1).
- A descriptive title for the table (Row 2).

Accessibility Assistant

Microsoft Excel includes the built-in Accessibility Assistant that will inspect your document and produce a report noting accessibility errors and warnings such as missing alt text and unclear hyperlinks.

To access the Accessibility Assistant, either select **Check Accessibility** under the Review tab or select the **Accessibility: Investigate** icon  at the bottom left corner of the workspace.

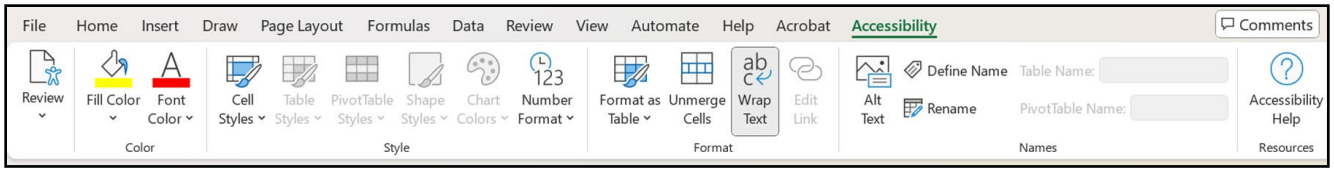
When you select **Check Accessibility** on the Review tab, a dropdown menu will open with choices to Check Accessibility, Alt Text, Format as Table, Unmerge Cells, Options: Accessibility, and Accessibility Help.



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Accessibility Ribbon

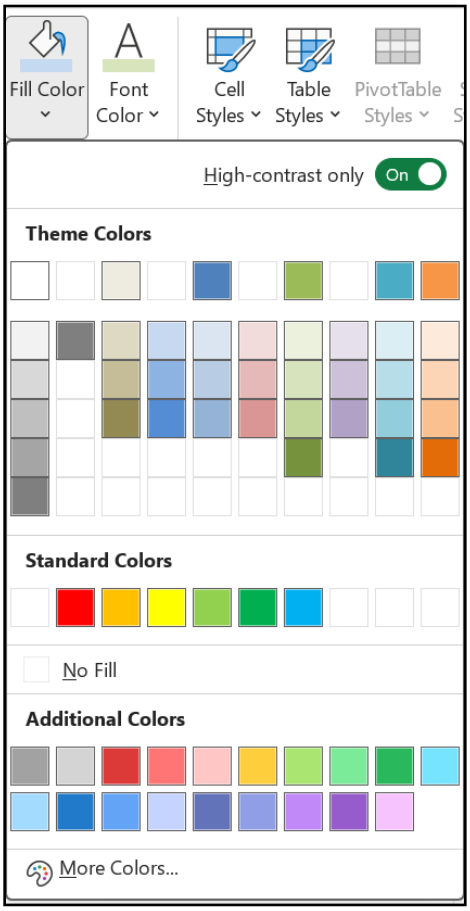
The Accessibility ribbon includes all of the accessibility tools we have been referring to throughout this guide all in one place. The tab is divided into several sections including **Review**, **Color**, **Style**, **Format**, **Names**, and **Accessibility Help**.



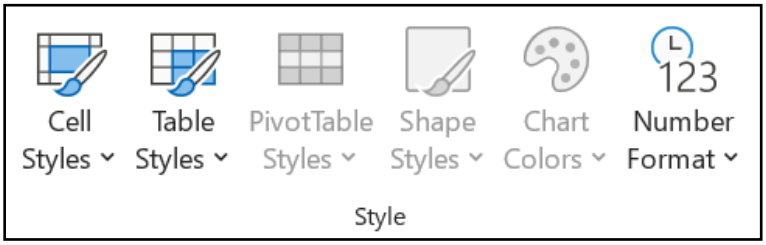
1. The **Review** tool provides access to the Accessibility Assistant and Spelling checker tools.
2. The **Color** tools help you identify whether your color choices are **Good contrast** or **Low contrast**. Always choose Good contrast colors.



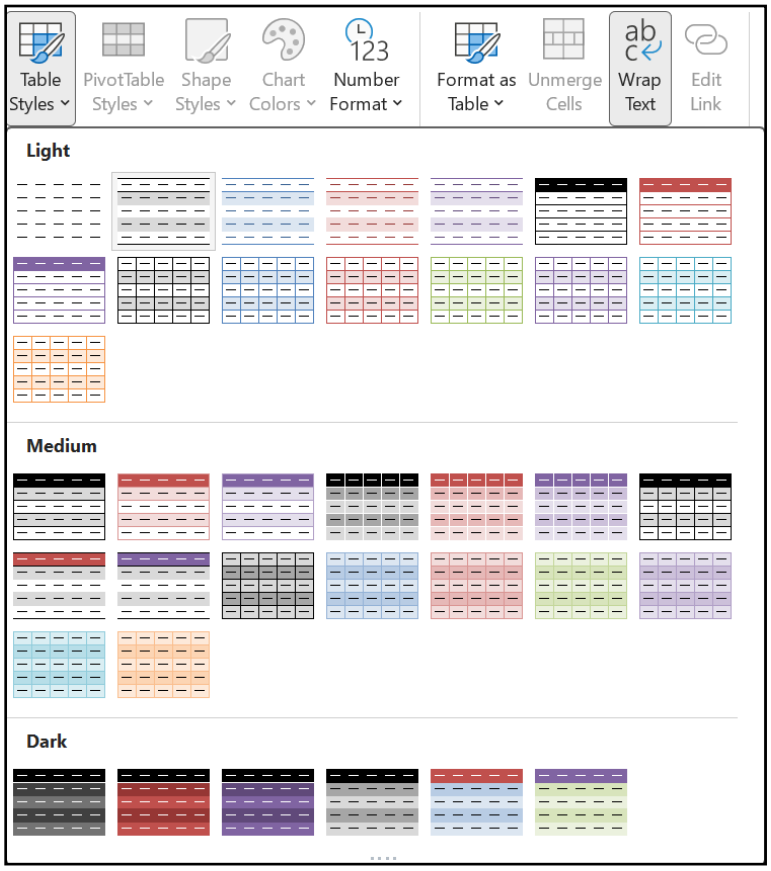
- You can also turn on “High-contrast only” color choices that work with the theme you are using.



3. The tools in the **Style** section give you pre-defined style options to change the visual formatting of data within cells and choose the appropriate number format for your purposes.

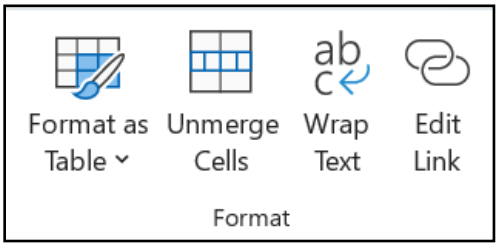


- Use **Table Styles** to select from a subset of accessible table color and contrast choices for formatted tables.



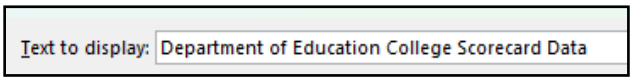
- Use the **Number Format** tool in the **Style** section to select formats such as percentage, currency, date and time.

4. The **Format** section includes the Format as Table tool discussed earlier in the guide, and other tools to unmerge cells, wrap text and edit links.

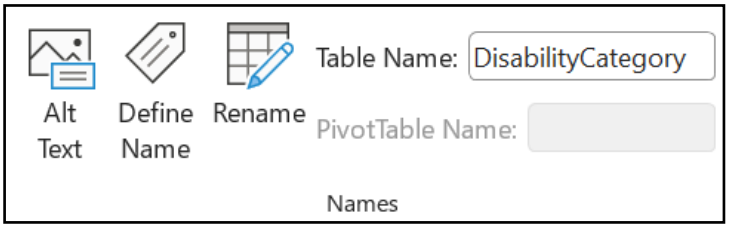


- **Unmerge Cells** makes it easy to fix this accessibility issue. Merged cells can make navigating tables confusing and complex. Use this tool to unmerge cells.
- The **Wrap Text** tool allows you to control the alignment of text within cells so that text is easier to see and read.

- The **Edit Link** tool allows you to update hyperlinks to provide descriptive link text in the Text to Display option, for example using Department of Education College Scorecard Data as the text to display for the URL: https://ed-public-download.scorecard.network/downloads/Most-Recent-Cohorts-Institution_06102026.zip



5. The tools in the **Names** section brings together in one place several of the important strategies and tools described earlier in this guide, including tools to add Alt Text descriptions, Define Names of data ranges, rename worksheets, provide a descriptive Table Name and provide names to Pivot Tables. It is very helpful to have these tools in one place on the Accessibility ribbon.



AI Considerations for Supporting Accessibility in Excel

Artificial intelligence (AI) can be a useful tool for creating more accessible Excel workbooks. It can be used when developing alternative text descriptions for charts, graphs, and other visual content. AI-generated descriptions can help identify chart elements, trends, and data relationships. They can provide a useful starting point for writing alt text. Microsoft 365 includes AI-assisted alt text features that can help generate initial descriptions for charts and images. These descriptions should always be treated as drafts needing human review, not the final content, to ensure they are accurate and complete.

Data managers should verify that descriptions do not solely describe the chart's appearance. Descriptions should correctly represent the underlying data, and clearly communicate important trends, comparisons, or findings.

Data privacy considerations are also a factor when using AI to generate alt text. Content that contains sensitive or personally identifiable information must be kept secure. Such charts or graphs should only be described manually by humans. For security purposes, make sure to use your institution's approved AI tools and recommended settings. Check to see if your workplace has a policy on AI for further guidance.

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Key AI Tips for Data Managers

- Use AI to draft alt text descriptions, not as the final product.
- Verify all numbers, trends, percentages, and comparisons against the source data.
- Ensure the description communicates the chart's purpose and key takeaway.
- Review AI-generated content for plain language, accuracy, and accessibility.
- Remove any sensitive or confidential information before using external AI tools.

Excel Data and PDFs

When sharing your data tables and charts, we recommend you add the accessibly formatted tables and charts to a Word document or PowerPoint presentation before saving the information as a PDF. For more information, check the instructions in our other Document Accessibility Guides for Microsoft Word and Microsoft PowerPoint.

For additional information on using Microsoft Excel, please check the following Microsoft guides for basic tasks in Excel and best practices for making Excel spreadsheets accessible.

Need additional assistance? Our team of accessibility experts is here to help. Whether you have questions, would like to schedule a training, or need guidance on the upcoming deadline for the new Title II regulations, please reach out to our Customer Support team at cidi-support@design.gatech.edu, call (404) 894-7756, or book a free consultation through CIDI's online form. Our team can help assess options and determine level of effort and resources required to meet your needs.

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