

# Microsoft Excel 365

## Basic Authoring and Testing Guide

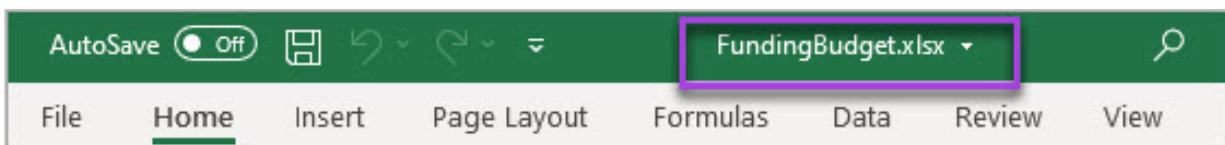
### Document Formatting

#### 1. Are the filename, workbook, and worksheet titles descriptive, and is the file in \*.xlsx format, and is the workbook NOT protected?

##### How to test 1A, 1B, 1C, 1D

**Instruction 1A and 1B:** Find the filename in File Explorer OR the **Title** bar in MS Excel. For example, *FundingBudget.xlsx* is a descriptive filename, while *Worksheet1.xlsx* is not. The file must be in the **\*.xlsx** format for accessibility testing to be possible.

**Figure 1:** Descriptive file name *FundingBudget.xlsx* displayed in the **Title** bar

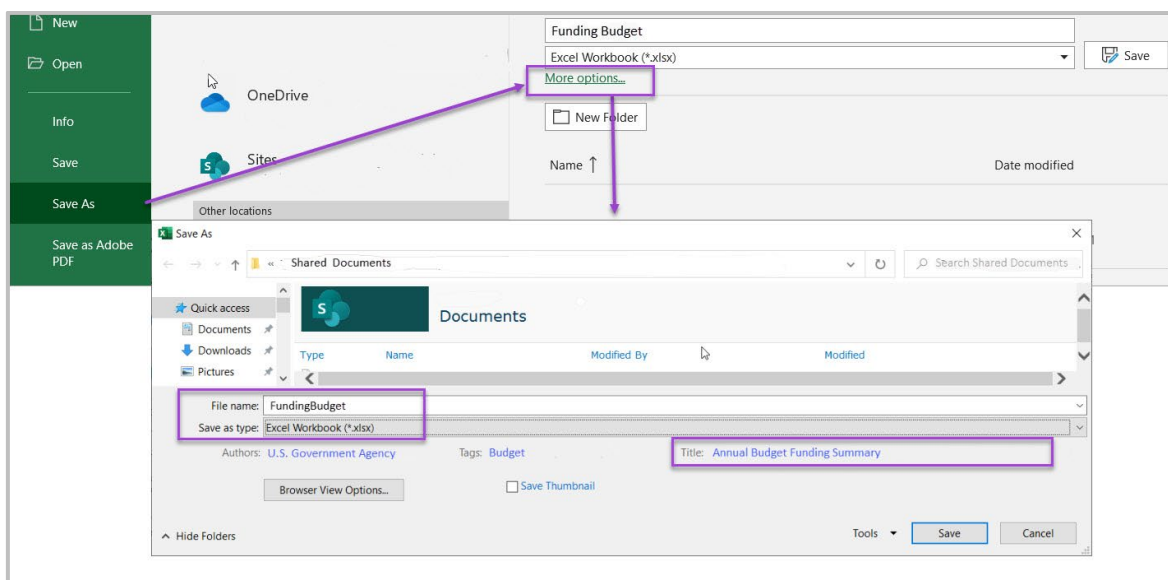


**Test 1A:** Is the file name descriptive and does it identify the workbook or its purpose? If not, the workbook fails this test.

**Test 1B:** Is the file in **Excel Workbook (\*.xlsx)** format? If not, the workbook fails this test.

**Instruction 1C:** Activate **File** tab>**Save As**>**More Options** to open the **Save As** options window and verify that the **Title** field displays the document's title.

**Figure 2:** **Save As** options window displaying a descriptive filename, **\*.xlsx** file type, and the document title in the **Title** field.

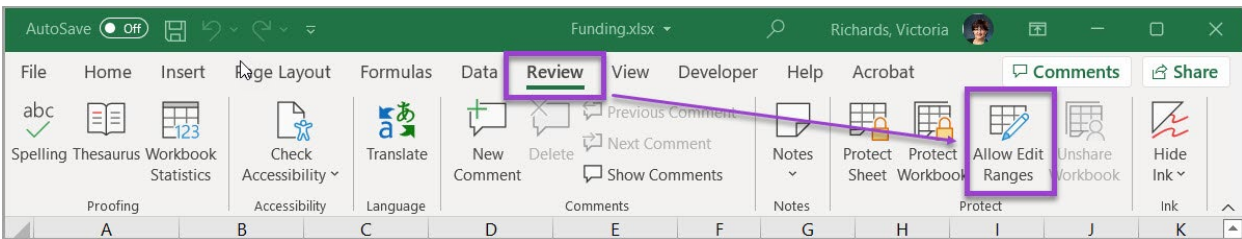


**Test 1C:** Does the **Title** property field display a document title? If not, the document fails this test.

**Instruction 1D:** Worksheet protections limit the ability to test for accessibility and can make portions or the entire document inaccessible. Activate the **Review** tab>**Protect group** option and

verify that **Allow Edit Ranges** button is selectable. If the **Allow Edit Ranges** button is selectable, then restricted editing is turned off.

**Figure 3: Protect** group in the **Ribbon** showing enabled **Allow Edit Ranges** option



**Test 1D:** Is the **Allow Edit Range** option enabled? If not, the worksheet fails this test.

### How to author for accessibility

A descriptive filename identifying the workbook, or its purpose helps everyone locate, open, and switch between documents. The workbook must be in a **\*.xlsx** format because these authoring and testing instructions will only work if the file is in the **\*.xlsx** file format.

- Activate **File** tab>**Save As**.  
**Note:** The **Save As** option is only available if **AutoSave** is set to **Off**.
- Verify **Save As** type is set to **Excel Workbook (\*.xlsx)**.
- Save the workbook with a descriptive file name.

## Text Formatting

### 2. Are built-in features used to organize content?

#### How to test 2A, 2B

**Test 2A:** Does each worksheet follow a logical reading order, left to right, then top to bottom? If not, it fails this test.

**Test 2B:** Can the worksheet be navigated using the up, down, right, or left arrow keys, and does it match the logical reading order? If not, it fails this test.

#### How to author for accessibility

To create a worksheet with content in a logical reading order:

- Start all worksheets in cell A1.
- Do not span content over multiple rows or columns.

**Figure 4:** Example of Excel Worksheet with logical reading order

Item	CFY Q1	CFY Q2	CFY Q3	CFY Q4
Training	\$125	\$200	\$0	\$200
Office Supplies	\$75	\$75	\$75	\$75
Print Supplies	\$50	\$50	\$50	\$50

### 3. Are link names descriptive?

#### How to test 3

**Instruction 3:** Find hyperlinks within a worksheet.

**Test 3:** Do links have meaningful names that describe their destination, function, and/or purpose OR that are determinable from context? If not, the document fails this test.

Uniquely Named Link:

[www.section508.gov](http://www.section508.gov)

Link Determinable from context:

[Get My Section 508 Questions Answered](#)

unclear links with no context:

[click here](#)

<https://site.44d76eb66f3943c395cd2d88207a7b57&aqs.docx>

#### How to author for accessibility

Assistive technology users rely on meaningful link names to determine the link destination, function, or purpose. For example, ambiguous *click here* links may hinder assistive technology users' access since the link names are all the same, while the destinations may be different.

Naming/creating links:

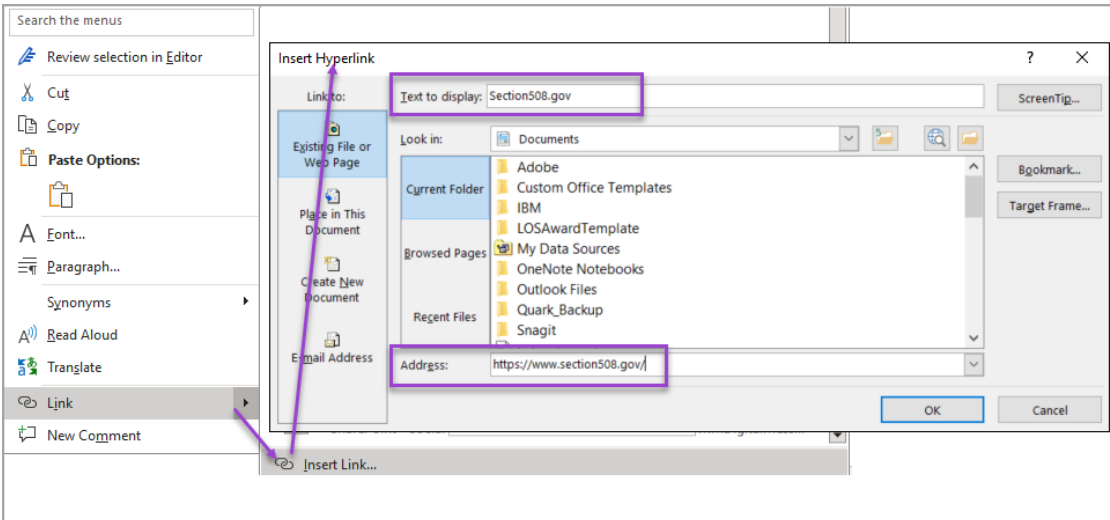
- Select the cell for the hyperlink, type the hyperlink (URL) text and press **Enter**
- Verify the hyperlink goes to the intended destination

To open the Insert Hyperlink configuration window:

- Press **Ctrl+K**, or **right-click (Shift+F10)** to open the context menus and select **Link>Insert Link**
- In the **Insert Hyperlink** options window specify/verify the accuracy for the **Text to display**, the **Address** for the link and its destination, then select **OK**

**Note:** Link destinations can be web pages, existing files (access restrictions apply), emails, and specified locations in a document.

**Figure 5: Insert Hyperlink** configuration window



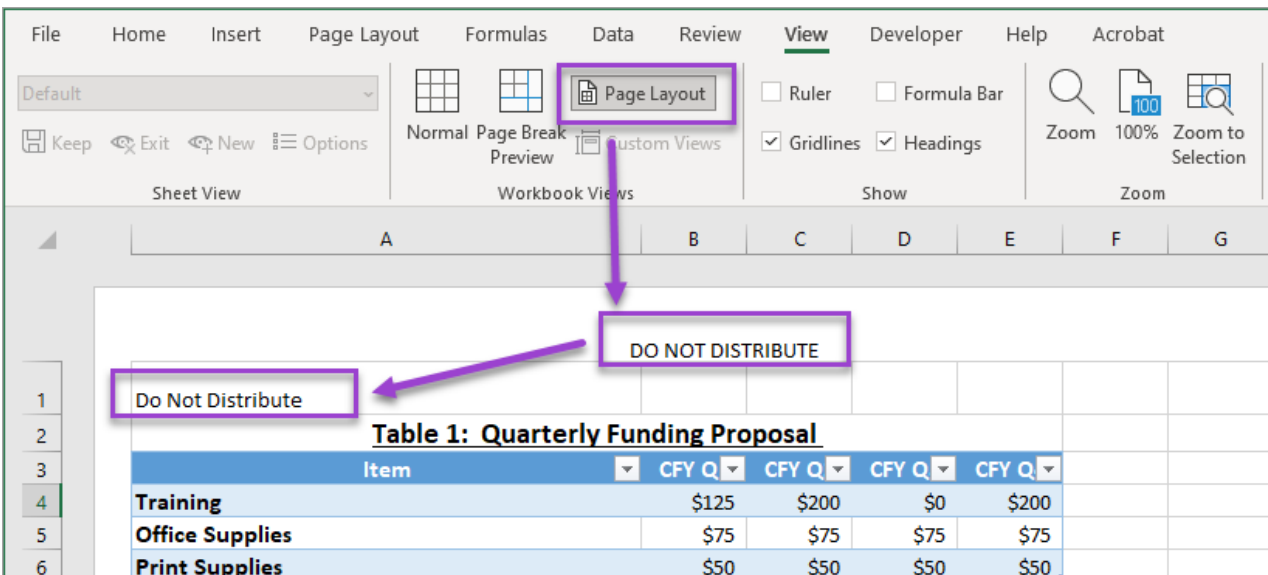
## Object Formatting

### 4. Is vital information in headers, footers, duplicated in the worksheet?

#### How to test 4

**Instruction 4:** Search for vital information in headers and footers (**View>Page Layout>Header**) (e.g., Respond by X date, CONFIDENTIAL, Do Not Distribute, DRAFT, Controlled Information, etc.).

**Figure 6:** Example of vital information repeated in cell A1 of the worksheet



**Test 4:** Is the vital information in the header duplicated in the first cell (A1) of the worksheet? If not, the worksheet fails this test.

## How to author for accessibility

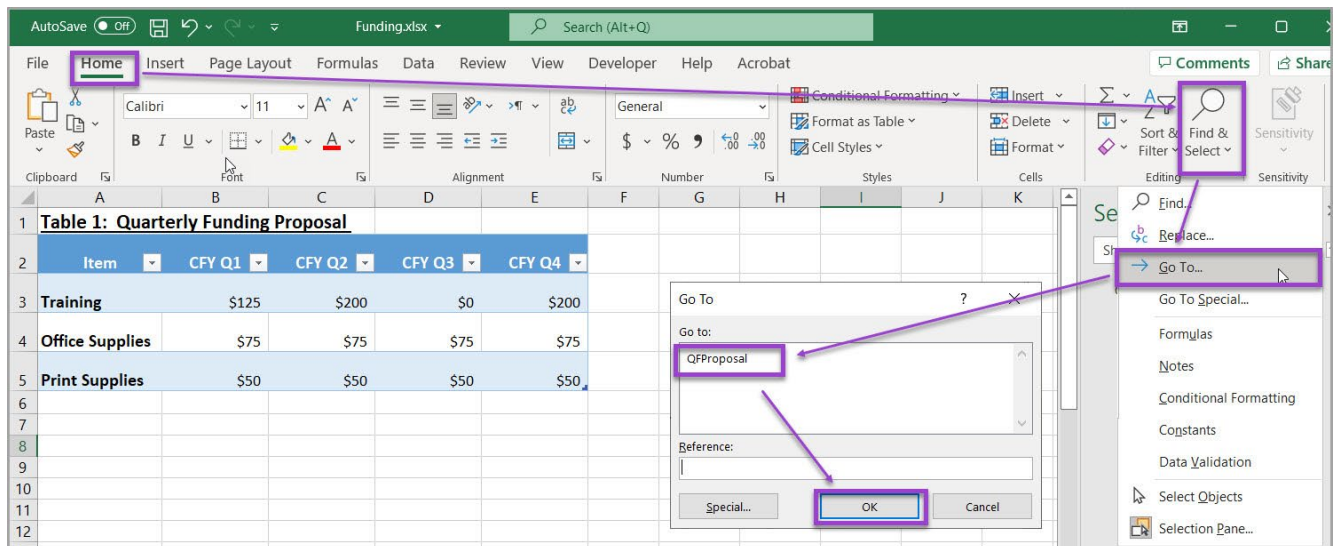
Assistive technology does not automatically access information in headers, footers, and watermarks, so it is necessary to duplicate any vital information in cell A1, or near the start of the related information.

### 5. Are data tables created using built-in table format styles?

#### How to test 5A, 5B

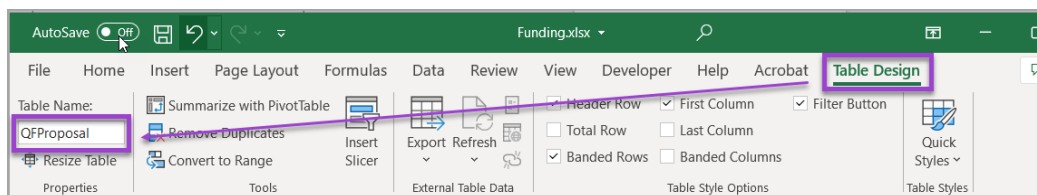
**Instruction 5A:** Find formatted tables in a workbook. Go to **Home>Editing group>Find & Select>Go To** or **Ctrl+G** to open the **Go To** options window. Select the table name in the **Go To** options window and activate **OK** to go to the table.

**Figure 7:** Long path to the **Go To** options window listing formatted table names



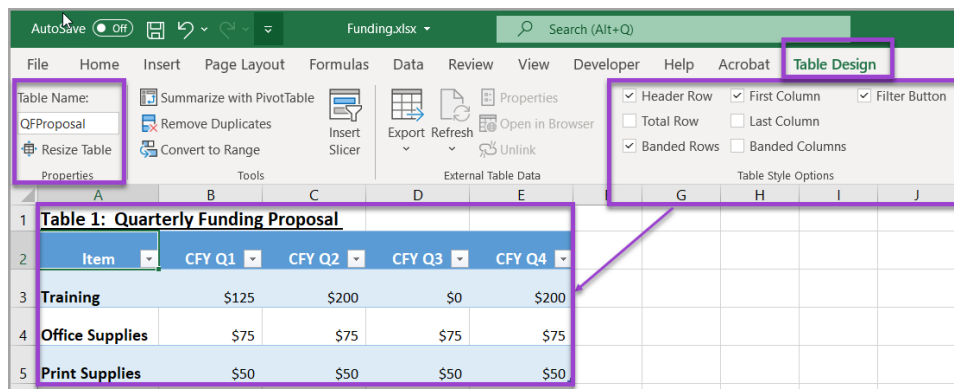
**Test 5A:** Does the **Table Design** tab>**Properties** show a uniquely identifiable contextual **Table Name**? If not, the worksheet fails this test.

**Figure 8:** **Table Design** tab> **Properties** showing a **Table Name**



**Instruction 5B:** Place the cursor in a table cell and verify **Header Row** and/or **First Column** under **Table Design** menu>**Table Style Options** group are checked.

**Figure 9:** Formatted data table with **Table Style Options** for **Header Row** and **First Column** selected



**Test 5B:** Are **Header Row** and/or **First Column** in the **Table Style Options** group checked? If not, the worksheet fails this test.

### How to author for accessibility

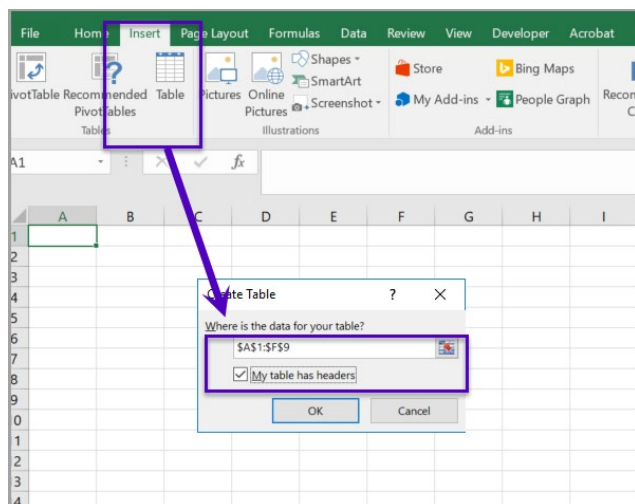
Assistive technology users need the ability to identify column and row headers in data tables to understand the association between table cells and their respective headers. Complex data tables cannot be made accessible in MS Excel. Workbooks with complex data tables (data tables with multiple header columns and rows and/or that contain merged/split cells) must be converted to an accessible format (i.e., a PDF document remediated for accessibility).

To create a non-complex accessible data table:

- Activate **Insert tab>Table>Create Table**
- Select the columns and rows for the table or enter the data range in the **Where is the data for your table?** field in the **Create Table** window
- Activate the **My table has headers** checkbox and select **OK**
- Enter the data in the cells

All tables must have a unique, contextually identifiable table name. With the table selected, choose **Table Design tab>Properties group>Table Name** field. Enter a unique table name (no spaces) in the field to identify the selected table.

**Figure 10:** Insert>Table>Create Table options window





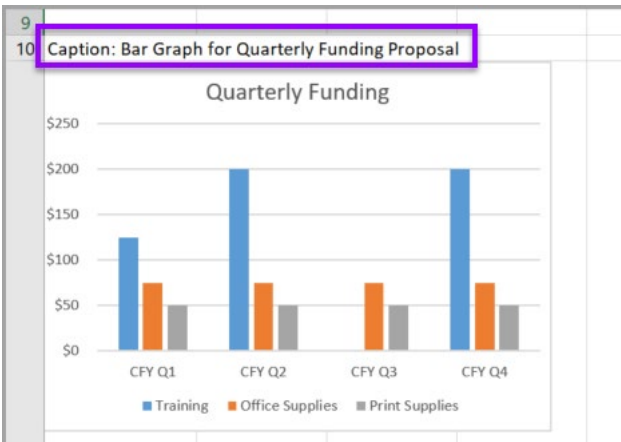
## 6. Do images and other objects have alternative text?

### How to test 6

**NOTE:** This test is not necessary if the worksheet contains only decorative or no images/objects/shapes/graphs, etc.

**Instruction 6:** Examine cells surrounding meaningful images/objects/shapes/graphs for a caption or text that describes the object. To locate an images/objects/shapes/graph, activate the **Home>Editing>Find & Select>Go To Special>Objects** and activate **OK**.

**Figure 11:** Bar graph with a descriptive caption in the preceding cell.



**Test 6:** Do meaningful images/objects/shapes in the worksheet have a caption or descriptive text in the surrounding cells? If not, the worksheet fails this test.

### How to author for accessibility

In Excel, images and other objects cannot be anchored. Assistive technology users can locate the objects but cannot access the embedded alternative text descriptions. Images and other objects include pictures, images of text, images of tables, graphs, shapes, icons with hyperlinks, etc.

To add captions or alternative text descriptions in Excel:

- In the **Ribbon** activate **Home>Editing>Find & Select>Go To Special>Objects** to locate any images, graphs, objects, etc.
- Expand the width of the row to fit the image, graph, object etc.
- Enter a caption or alternative text description in any of the cells immediately adjacent to the image, graph, object, etc.

To use the built-in alternative text description option:

- Select the image, object, or shape.
- **Right click (Shift+F10)** and activate **Edit Alt Text**.
- In the textbox enter information that states the purpose/contextual description of the image, object, etc., (in as few words as possible while remaining clear) OR activate **Mark as decorative** for decorative objects.
- Close the **Alt Text** options window.

# Color Formatting

## 7. Are colors and other visual characteristics that convey information also described in text?

### How to test 7

Using only color or other visual characteristics (size, shape, location, etc.) to convey meaning will not provide comparable access to people who are blind, have low vision, or are colorblind.

**Instruction 7:** Find where color and/or other visual characteristics, such as top green square, large yellow rectangle, bottom center, etc., are used to convey meaning.




**Test 7:** Is there text that conveys the meaning of the color or other visual characteristics? If not, the document fails this test.

### How to author for accessibility




The following layout tables describe the progress for three projects using only color to represent the current project status. Adding text in addition to the color provides comparable information to assistive technology users and people who are colorblind.

Use text descriptions or alternative text to emphasize the meaning of a color or other visual characteristics, such as size, shape, and location.

**Table 1:** Example of project status tables using only color, and color with text description

Project	Status
Project A	
Project B	
Project C	

Project	Status
Project A	<b>On Time</b> 
Project B	<b>At Risk</b> 
Project C	<b>Late</b> 

## 8. Is the contrast ratio between text and background sufficient?

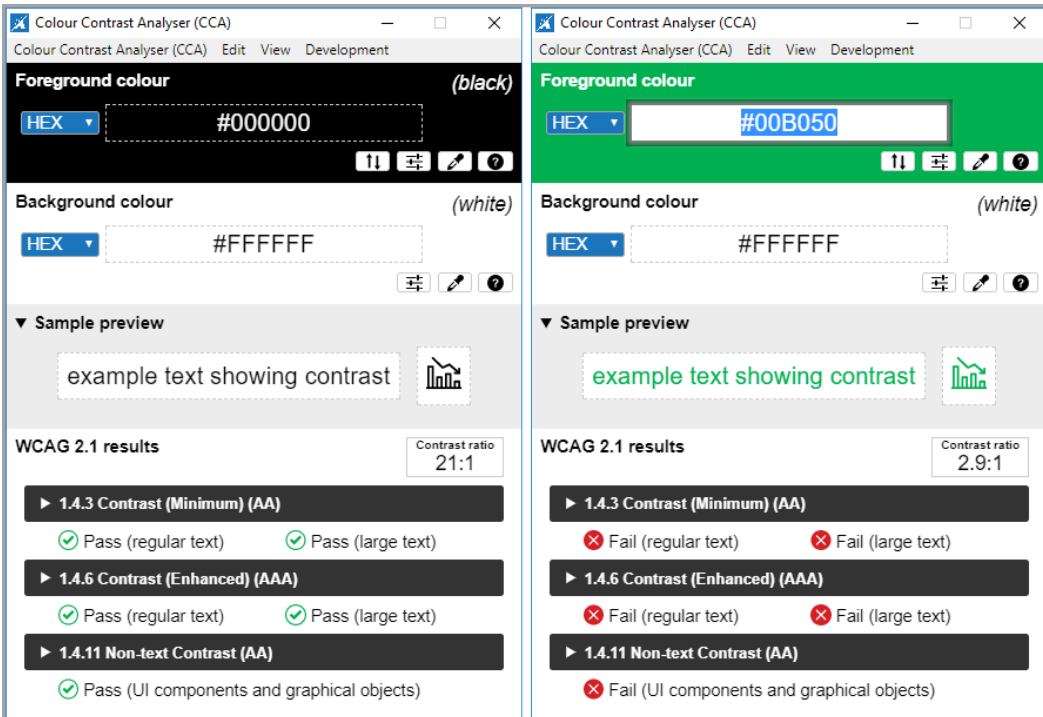
**NOTE:** This test is not necessary, if the worksheet text is black on white background (or close to it). This test requires the [Colour Contrast Analyser](#) (an external application).

### How to test 8

**Instruction 8:** Execute the *Colour Contrast Analyser*. Drag the **Foreground eyedropper** icon over a sample of the text or image of text. Drag the **Background eyedropper** icon over a sample of the background color.

**Figure 12:** Examples of pass and fail results with the *Colour Contrast Analyser*





**Test 8:** Does color contrast ratio of **Foreground** (text) and **Background** ratio meet the minimum contrast ratio (4.5:1)? If not, the document fails this test.

## How to author for accessibility

People who are colorblind or have low vision will only have comparable access if there is sufficient contrast between the text and the background. The contrast standards are:

**Table 2:** Table with contrast ratios for types and sizes of text

Type or Size of Text	Contrast Ratio
Standard text (12 pt regular)	4.5:1
<b>Large Text (14 pt bold or 18 pt regular)</b>	3:1
Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content	Excluded from requirement

Create content with text, or images of text that use color or shading, with sufficient color contrast. If the contrast ratio fails, then adjust the foreground or background until it passes.

**Table 3:** Examples of good and insufficient color contrast ratios

Good Color Contrast	Insufficient Color Contrast
<b>White text on black background</b>	<b>Dark gray text on black background</b>
<b>Dark green text on yellow background</b>	<b>Orange text on yellow background</b>
<b>Light blue text on blue background</b>	<b>Red text on blue background</b>
<b>white text on red background</b>	<b>Dark green text on red background</b>

# Miscellaneous

## 9. Are there accurate, corresponding descriptions of embedded files?

### How to test 9

**NOTE:** This test is not necessary, if the workbook does not contain audio, video, or multimedia files.

**Instruction 9:** Activate the audio-only, video-only, or multimedia file.

**Test 9:** Is there an accurate and complete text transcript for multimedia files, text description for audio files, and synchronized caption and/or audio description for video files? If not, the workbook fails this test.

### How to author for accessibility

MS Excel workbooks with embedded audio-only, video-only, or multimedia files that contain meaningful information must have additional documentation so that individuals with disabilities have comparable access to the embedded information.

- **Audio-only files:** Should have an accurate and complete transcript
- **Video-only files:** Should have an accurate and complete text description
- **Synchronized media (audio and video) files:** Should have accurate and complete synchronized captions and audio descriptions

## 10. Are forms within the workbook avoided?

### How to test 10

**Instruction 10:** Check for interactive form fields. Ignore blank table fields used to create fillable spaces; these are not interactive form fields. Search for the Excel built-in form features that are interactive and can collect data. Automated, interactive, fillable form fields cannot be made accessible in Excel.

**Test 10:** Is the workbook free of form fields? If not, the workbook fails this test.

### How to author for accessibility

Forms created in Excel cannot be made accessible for assistive technology users.

## 11. Are flashing objects excluded?

### How to test 11

**Test 11:** Is the workbook free of all flashing objects? If not, the workbook fails this test.

### How to author for accessibility

Create content without using flashing objects. Flashing objects can cause seizures and should never be used.