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Creating Accessible Word Files



U.S. Department
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**Federal Highway
Administration**

Office of Administration
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Creating Accessible Word Files

The content owner/author is responsible for correct formatting of the content. This document provides a step-by-step discussion on most aspects of making Word files accessible with the intent of creating a conformant PDF using Microsoft Office 365 ProPlus. It does not discuss every method of making an aspect of Word accessible nor using every version of Word. Accessible does not necessarily mean 508 conformant. The more accessible the source document, the easier it is to finalize the 508 conformant PDF.

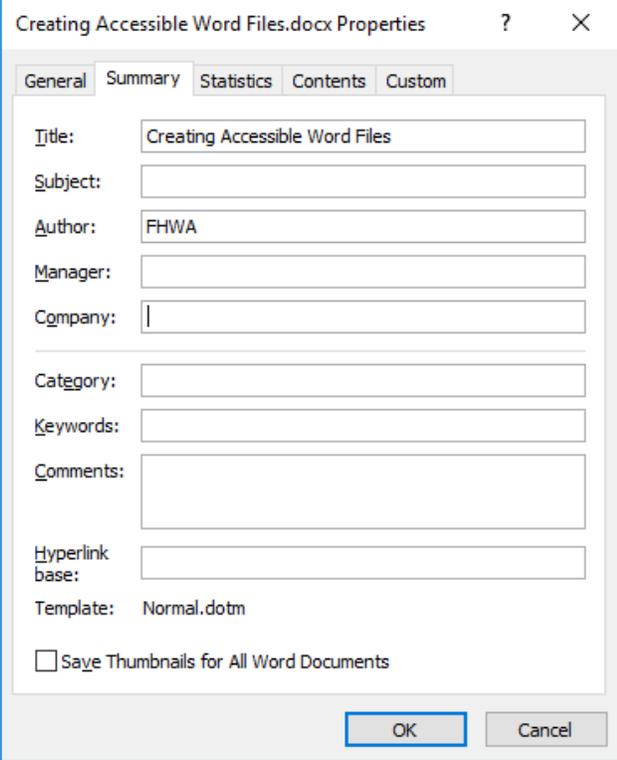
This is not a document on how to use Word. See <https://support.office.com/en-us/article/word-for-windows-training-7bcd85e6-2c3d-4c3c-a2a5-5ed8847eae73> for Word training.

Document Properties

Title and author

Go to the “File” tab. Navigate to “Properties” and select “Advanced Properties” from the drop down. On the “Summary” tab:

- Enter the full, proper document title in the “Title” field.
- Set the “Author” to FHWA.



The screenshot shows the 'Creating Accessible Word Files.docx Properties' dialog box with the 'Summary' tab selected. The fields are filled as follows:

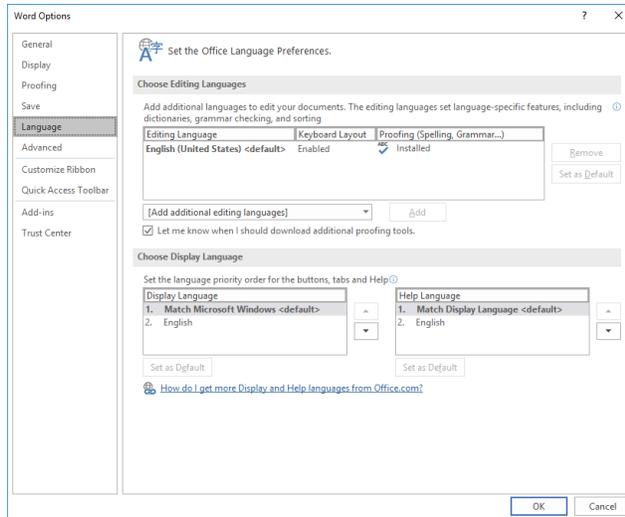
Field	Value
Title:	Creating Accessible Word Files
Subject:	
Author:	FHWA
Manager:	
Company:	
Category:	
Keywords:	
Comments:	
Hyperlink base:	
Template:	Normal.dotm
Save Thumbnails for All Word Documents:	<input type="checkbox"/>

Buttons: OK, Cancel

See <https://www.w3.org/WAI/WCAG21/Techniques/general/G88.html>.

Language

Go to the “File” tab and select “Options” then “Language.” Confirm the default human language is correct for the document.

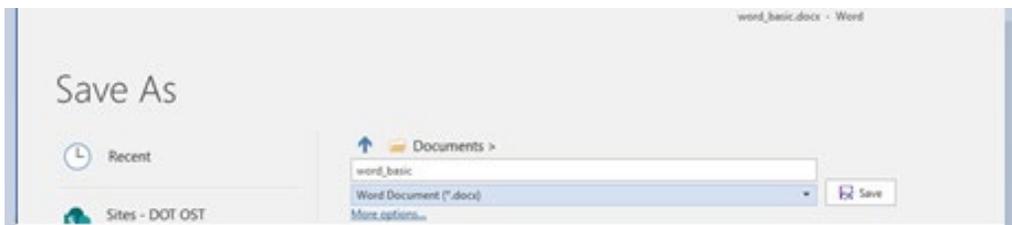


Screen readers read with an accent. For the content to be understandable to people using screen readers, the language needs to match the natural language of the content.

When the document has content in more than one language, set the default to the language that is used the most. Then set specific content language to match its natural language. See [Language of Parts](#) for discussion on setting the language for specific words or parts of the document.

Saving

Save as a .docx to retain accessibility features. Go to the “File” tab and select “Word Document (*.docx)” from the “Save As” drop down.

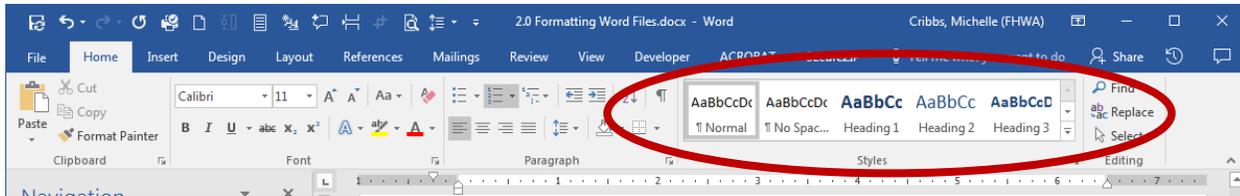


Structure

Sighted users likely skim a page for headings, links, etc. Assistive technologies use these same indicators to navigate documents. In an accessible document, these indicators are created in a non-visual way, using styles and other built-in features. Do not pick a style because of the look. Select the correct style first, and then modify the look.

Styles

To select a style, go to the “Styles” group on the ‘Home.’ Select a style for its function not for its format. Once selected update the format.



Also see <https://www.w3.org/WAI/WCAG21/Techniques/general/G115.html>,
<https://www.w3.org/WAI/WCAG21/Techniques/general/G140.html>,
<https://www.w3.org/WAI/WCAG21/Techniques/html/H42>.

Style use

- Title – Use once for the title of the document. Base on a normal paragraph. The title is not tagged as a Heading 1.
- Headings – Provide descriptive headings. Use “Styles” Headings in hierarchal order. Avoid skipping levels. The first major section is styled with Heading 1. Subsections of the Heading 1 content are styled with Heading 2. A subsection of Heading 2 is styled with Heading 3 and so on through Heading 6. The headings should mirror a table of contents or outline of the document. See also <https://www.w3.org/WAI/WCAG21/Techniques/html/H69.html> (while this applies to HTML, the concept is the same).
 - **Note:** Watch Heading styles using automatic numbering and how they convert in the PDF. These can convert to objects (images) not text in the PDF. Images of text are not acceptable in the Headings. If the automatic numbering converts to an object in the PDF, In Word, select the Heading number and select Ctrl + Space on the keyboard. Repeat this step for all automatic numbered heading numbers and then reconvert to PDF. This action will not change the number itself but prevents it from converting to an object in the PDF.
- Paragraph – Use the Normal paragraph.

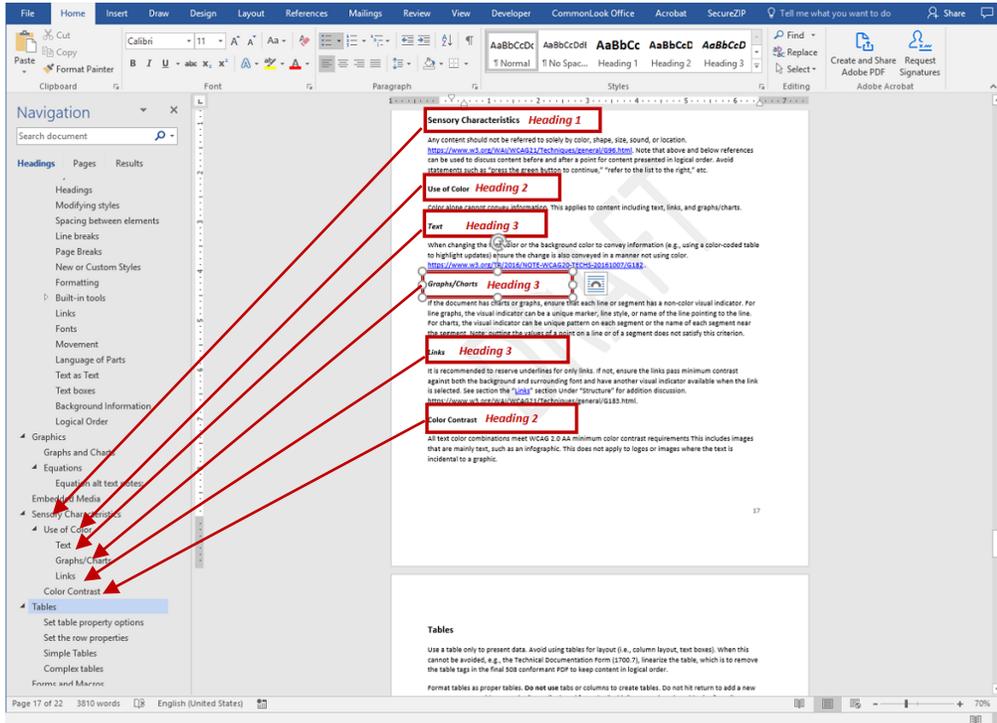
Headings

Open the “Navigation Pane” by going to the ‘View” tab and checking “Navigation Pane” in the “Show” group. In the “Navigation Pane” select “Headings.” Inspect the document for headings and compare them to the Headings list in the navigation pane.

- Is each visual header listed?
- Does the Headings list match an outline or table of contents for the document?
- Are subheadings properly indented? Confirm that a subsection is not at the same level as its parent section.

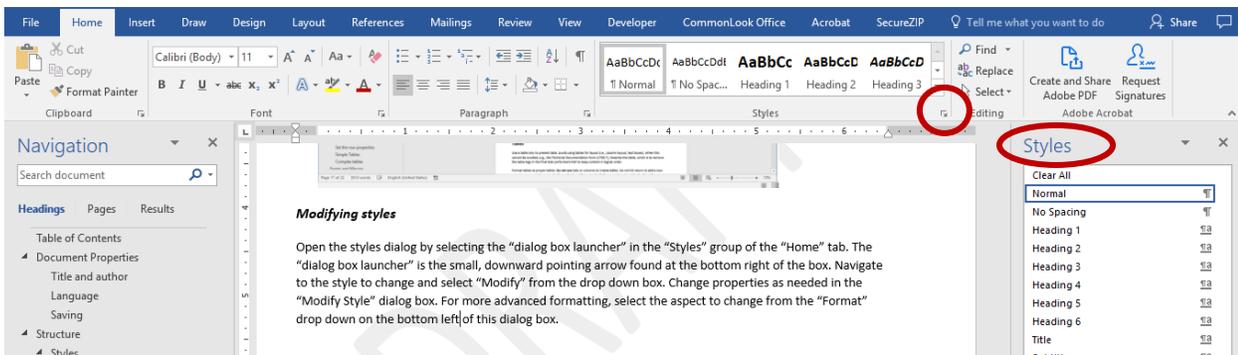
- Does not include the title.
- Does not include blank lines.

The screen shot below shows an example of visual heading matching up to the “Headings” in the “Navigation pane” to form an outline of the document.

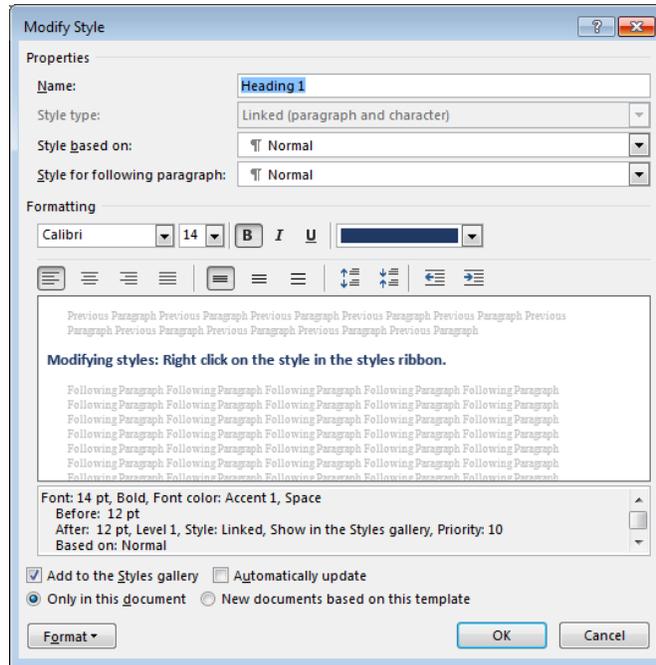


Modifying styles

Open the styles dialog by selecting the “dialog box launcher” in the “Styles” group of the “Home” tab. The “dialog box launcher” is the small, downward pointing arrow found at the bottom right of the box. Alternatively, open the “dialog box launcher” by selecting “Alt + Ctrl + Shift + S.”

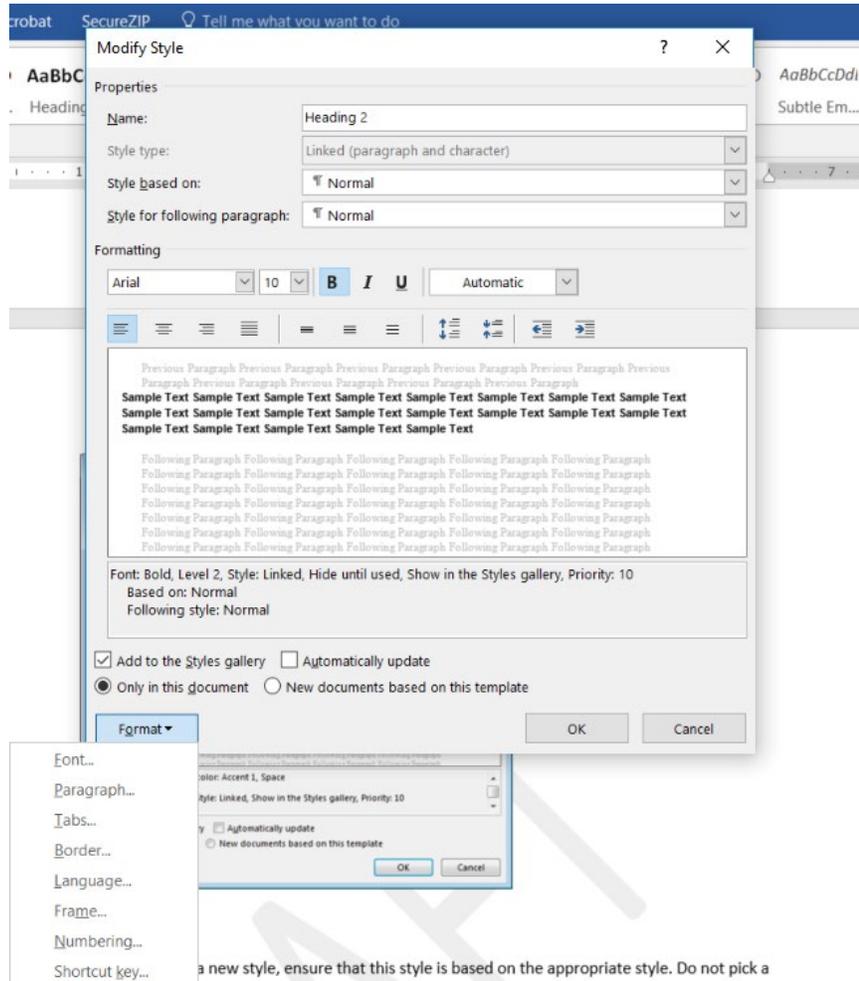


Navigate to the style to change and select “Modify” from the drop-down box. Change properties as needed in the “Modify Style” dialog box. For more advanced formatting, select the aspect to change from the “Format” drop down on the dialog box.

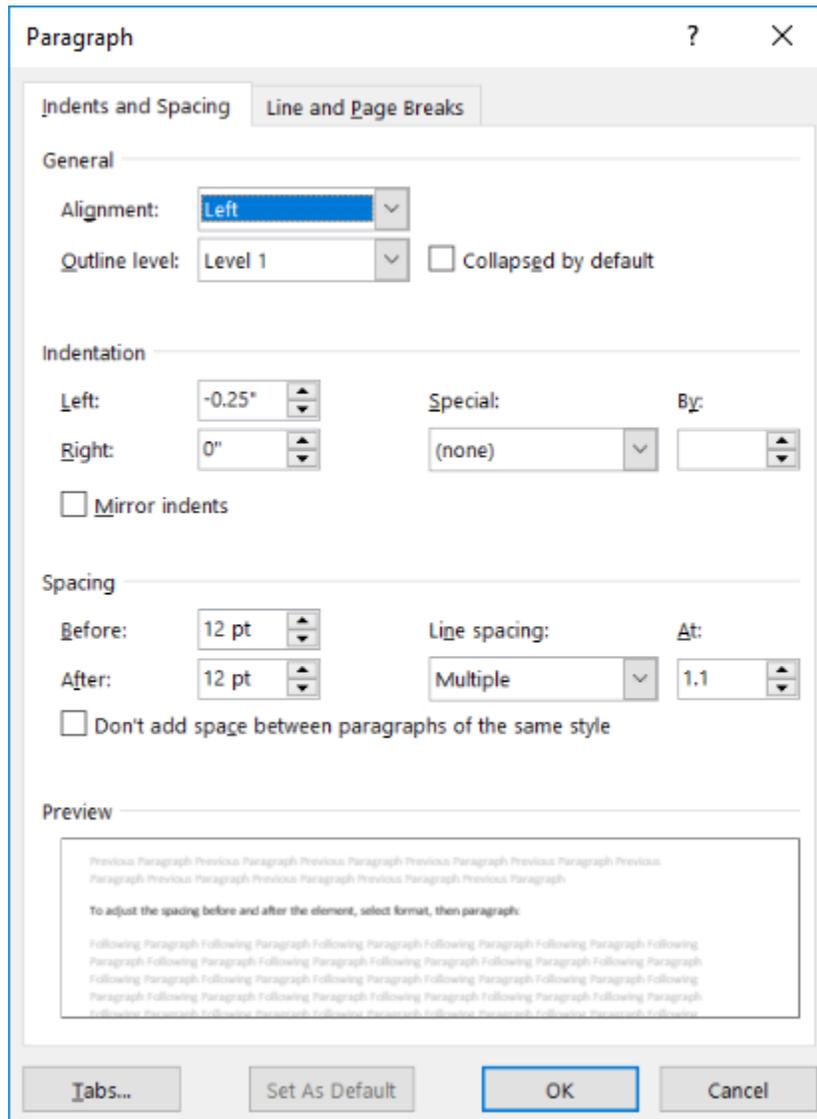


Spacing between elements

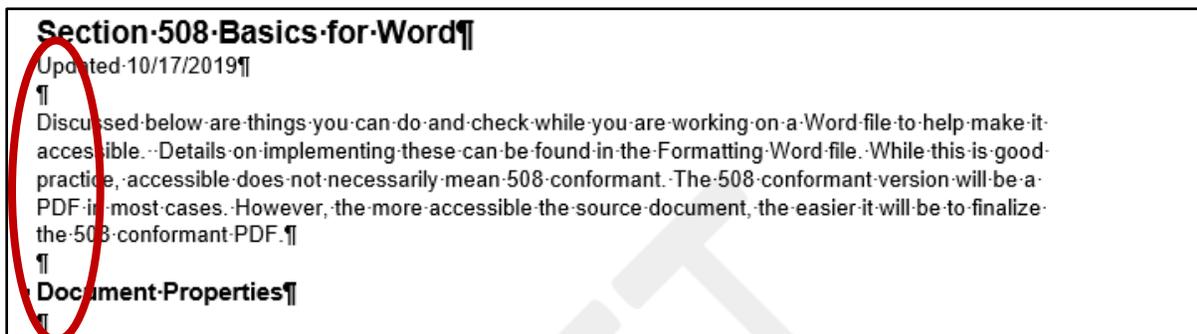
Style all spacing between elements instead of adding a blank paragraph. To adjust the spacing before and after the element, select “Format” on the “Modify Style” dialog box. Select “Paragraph” from the drop down list.



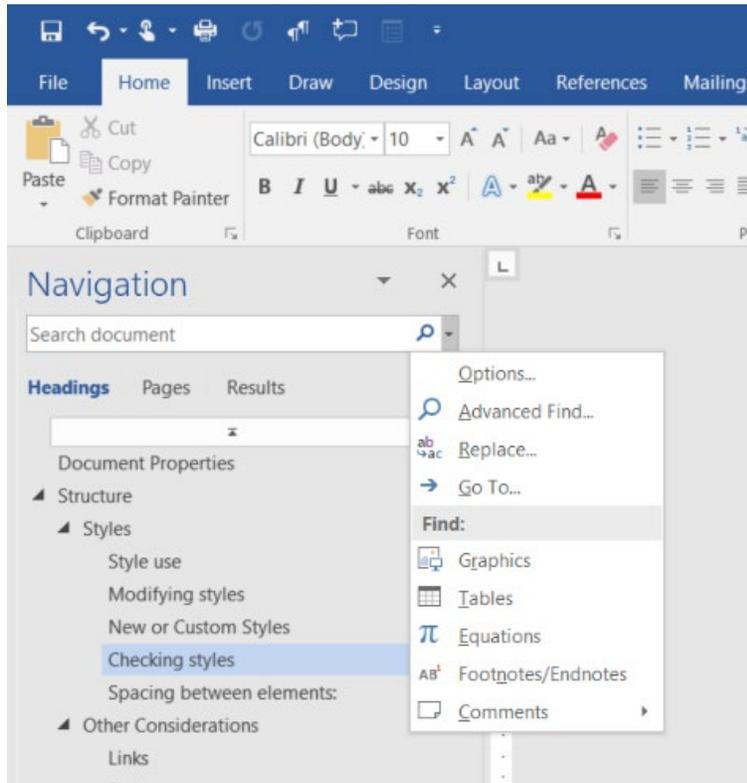
Adjust the spacing sizes in the “Before:” and “After:” in “Spacing” section as needed.



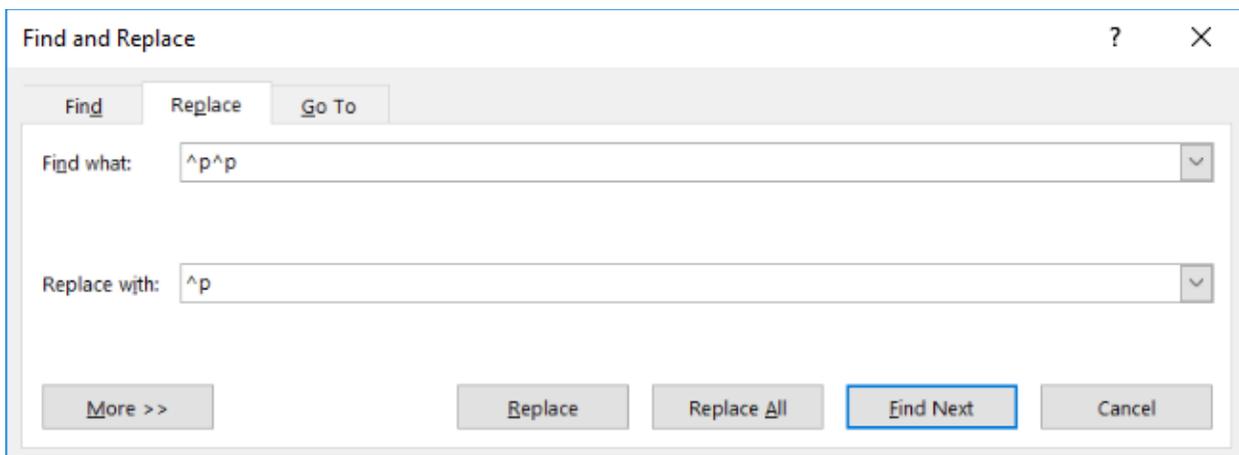
To identify the blank paragraphs to remove, go to the “Paragraph” group of the “Home” tab and select the “Show/Hide formatting marks” icon (the ¶). The blank paragraphs are the lines with only ¶. The screen shot below shows examples of blank paragraphs used to format white space between elements.



Quick Tip: Globally remove blank paragraphs used to create a space between elements by returning to the navigation pane, select the “Search for more things” drop down next to the magnifying glass.

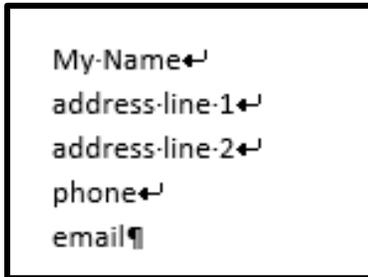


Select “Advanced Find” then to go the “Replace” tab. In “Find what,” enter ^p^p. Replace with ^p. Note this is case sensitive.



Line breaks

Use line breaks (Ctrl + Enter) to force a break within a paragraph. The line break displays as an arrow to the left when formatting marks are shown in the screen shot below.



Page Breaks

Use page breaks to move content to a new page instead of pressing enter until the content is moved to a new page. Add a page break by going to the “Insert” tab and selecting “Page Break” from the “Pages” group.

New or Custom Styles

Ensure a new or custom style is based on the appropriate style. Do not pick a style based on formatting. For example, base ‘My Caption’ on Normal and not a heading because it matches the desired style. Base ‘My new Heading 1’ on Heading 1.

Formatting

Built-in tools

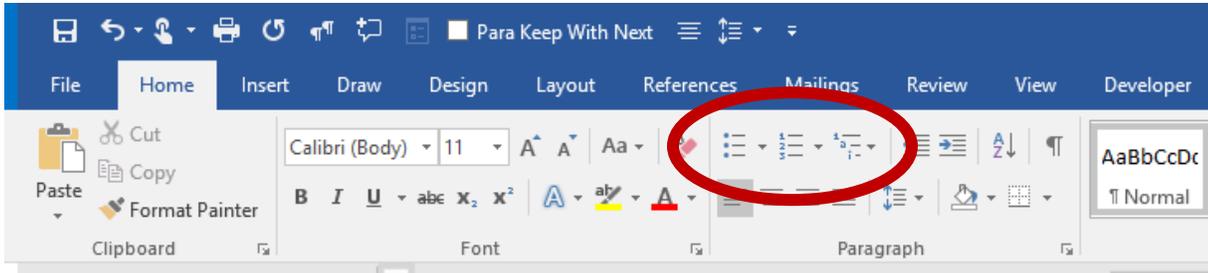
Use built-in tools to create:

- Lists.
- Tables.
- Columns.
- Table of contents.
- Footnote and /or endnotes.

Do not create the appearance of a list using symbols (e.g., – or *). Do not create the appearance of tables or columns using tabs, spaces, and/or line breaks. Do not manually create tables of contents, footnotes, or endnotes.

Lists

Create lists by selecting the bulleted list, numbered list, or multi-level list from the “Paragraph” group of the “Home” tab.



Tables

See detailed discussion in the [Tables section](#) of this document.

Columns

On the “Page Setup” group of the “Layout” tab, select the “Columns” drop down, then select the number of columns.

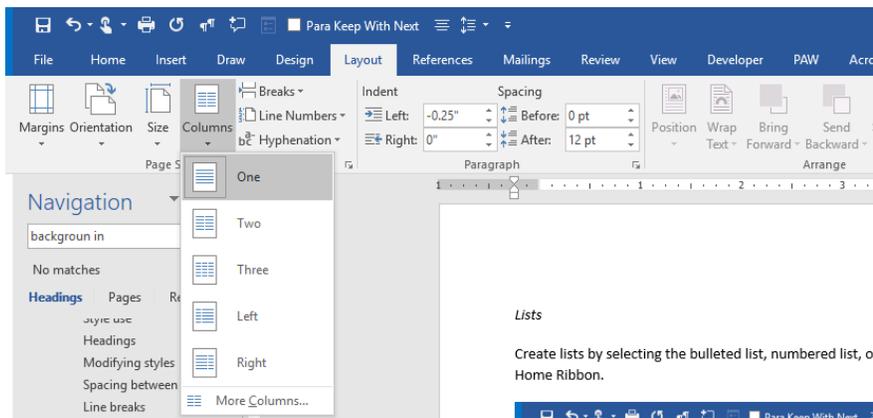


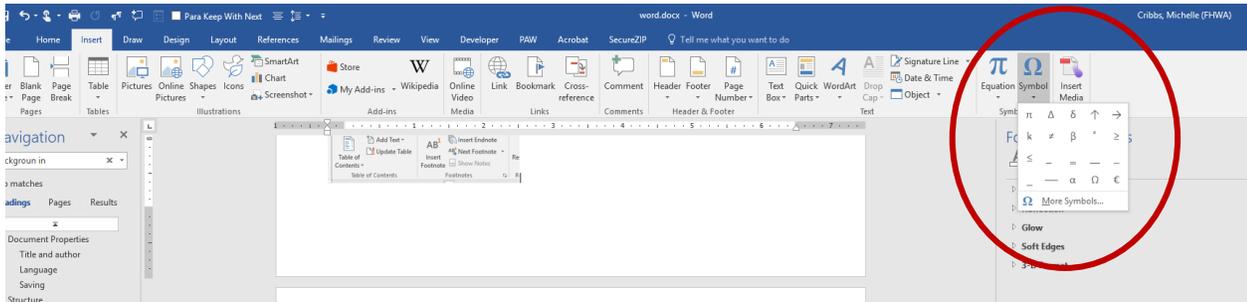
Table of Contents, Endnotes, Footnotes

Select the appropriate item from the “Reference” tab.



Symbols

Insert symbols by selecting the “Symbol” drop down from the “Symbols” group of the “Insert” tab. Do not create a ≤ or ≥ by underlining a < or >. Do not create a ° by making the letter o superscript. Note: if the final conformant version is a PDF or HTML, check the symbols in those files to confirm they converted correctly.



Links

- Ensure linked words among other content are identifiable as links and are not identifiable by color alone. <https://www.w3.org/TR/2016/NOTE-WCAG20-TECHS-20161007/G182>. See [use of color discussion](#) below.
- Where links are identified by a different color only, ensure a minimum contrast between the link color and body text as well as providing an additional non-color visual cue on hover or on focus. <https://www.w3.org/TR/WCAG20-TECHS/G183.html>. This contrast is in addition to link and body text color against the background.
- Ensure the linked words are unique and descriptive of the link destination or the purpose of the link is discernable from surrounding text. Do not use ‘click here,’ ‘read more,’ etc. <https://www.w3.org/WAI/WCAG21/Techniques/general/G53.html>, <https://www.w3.org/TR/WCAG20-TECHS/G91.html>.

Fonts

- Font colors against a background must pass WCAG 2.0 AA minimum [color contrast](#).
- Except for captions and images of text, text is resizable and readable when zoomed to 200% without assistive technology.

Movement

The document is free from any content that blinks or flashes.

Language of Parts

When using a word or phrase from a language different from the default human language, set the language of that part to the correct human language. Highlight the text that is in a different language. Go to the “Review” tab. In the “Language” section select the “Language” drop down select “Set Proofing Language.”

Select the correct language from the dialog box. Also see <https://www.w3.org/WAI/WCAG21/Techniques/html/H58.html>.

This does not apply to names, technical terms, or words that are common in the default language, e.g., rendezvous for the default language English.

Text as Text

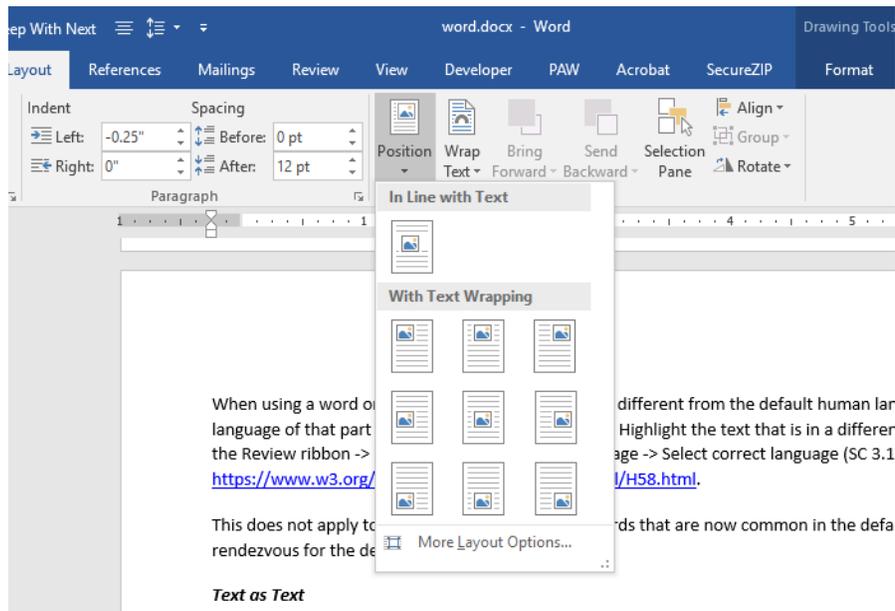
Rendered text as text, not an image. This includes content copied from another source.

This *does not* apply to:

- Logos.
- Incidental text. Incidental text includes purely decorative images or parts of an image that contain significant other visual content such as a sign in the background of a photograph.
- Images replacing text to maintain a certain look such as an infographic, flowchart, or equation.

Text boxes

When using text boxes, ensure they are positioned in line with the text. Select the text box then go to the “Arrange” group of the “Layout” tab select “Position.” Select “In Line with Text” from the drop down.



Background Information

Background information includes content contained in watermarks, headers, or footers. This content may not be available to assistive technologies. Confirm vital background information is duplicated in the body of the text at the start of the related information.

Logical Order

Confirm content is in logical order when read linearly.

Graphics

When a graphic is created using multiple individual graphics, “Group” them to create a single graphic. Select all the individual graphics. Then from the “Format” tab under “Picture Tools” tab or “Drawing Tools” tab, select “Group” from the “Group” drop down in the “Arrange” group.

Provide a concise description (“alt text”) for all graphics conveying meaningful information. The description is used by screen readers to tell someone who cannot see the image what it is. The description is an equivalent, conveying the meaning of the graphic. Do not add extra information or skip anything relevant. Do not repeat any description provided in text surrounding the graphic or the caption. Do not start the description with “This is a picture of ...,” “This is a figure of...,” etc.

Add the description by selecting the image. Then go to the “Format” tab on the “Picture Tools” tab. Select the “dialog box launcher” in the “Picture Styles” group of this tab. The “dialog box launcher” is the small, downward pointing arrow found at the bottom right of a group. Alternatively, open the “dialog box launcher” by selecting “Alt then JP then O.” This action opens the “Format Picture” task pane. Navigate to the “Layout and Properties” icon then select “Alt Text.” Add the description to the “Description” field. Except for objects that do not support “Descriptions” such as equations, include the description in the “Description” field, not in a separate file.

The image shows a screenshot of a Microsoft Word document and its 'Format Picture' task pane. The document page on the left contains the following text:

Text as Text

If text that can be rendered as text should be text, not an image (SC 1.4.5). This includes content copied from another source.

This *does not* apply to logos or text that is incidental to a graphic or contains other visual content.

Textboxes

Place in line with text. Select the text box and go to the Page ribbon item-> arrange->position-> in line with text.

Background Information

Background information includes watermarks, content in headers or footers. This content may not be available to assistive technologies. Confirm background information that is vital is duplicated in the body of the text at the start of the related information.

Logical Order

Check that content is logical order (SC 1.3.2, 2.4.3) when read linearly.

The 'Format Picture' task pane on the right is open to the 'Alt Text' section, showing a 'Title' field and a larger 'Description' field.

If the image does not have the “Picture Styles” group, select the “dialog box launcher” from the “Size” group.” Go to the “Alt Text” tab on in the “Format Object Dialog” box. Add a text equivalent to the graphic in to the “Description” field.

Only graphics providing meaningful information need alt text. Do not add alt text to decorative images. If available, select the “Make as decorative” check box on the “Alt Text” dialog box. If it is not available, add ‘ ‘ to the alt text.

Graphs and Charts

Preferable, the alt text for graphs and charts should succinctly describe the graph in 2 or 3 sentences. It is acceptable to provide the properly formatted, raw data tables in combination with a short description.

Equations

- Simple, 1-line, text-based equations, can be left as text, e.g., $A = \pi r^2$. Note: if the final conformant version is a PDF or HTML, confirm the symbols converted correctly.
- More complex equations are typically done in an editor. These require alt text in the PDF, as will any simple 1-line equation done with an equation editor. There are different ways to edit the equations.
 - From the “Insert” Tab select the “Equation” drop down in the “Symbols” group. This equation does not contain a “Description” like with images or figures above. The description is added to the final conformant PDF or HTML.
 - From the “Insert” tab “Microsoft Equation 3.0” from the “Object” drop down in the “Text” group. Add alt text to the element following the steps for a figure or image.

Equation alt text notes:

- Subject matter experts need to write the alt text for equations and technical non-text content.
- The alt text for the equations is simply the equation as a person would read it aloud to a peer, “A equals pi times r squared.” Do not include extra information such as “This is the equation to calculate the area of a circle. It reads, A, the area of the circle equals pi, the ratio of a circles circumference to its diameter (commonly taken as 3.14) time r, the radius of a circle squared.”
- Ensure the alt text for the equations match the case of the symbol or variable in the equation including alternatives for Greek symbols.

Embedded Media

See [Multimedia documentation](#).

Sensory Characteristics

Avoid referring to content solely by color, shape, size, sound, or location.

<https://www.w3.org/WAI/WCAG21/Techniques/general/G96.html>. Note that above and below references discussing content before and after a point for content presented in logical order are acceptable. Avoid statements such as “press the green button to continue,” “refer to the list to the right,” etc.

Use of Color

Color alone cannot convey information. This applies to content including text, links, and graphs/charts.

Text

When changing the font color or the background color to convey information (e.g., using a color-coded table to highlight updates) ensure the change is also conveyed in a manner not using color.

<https://www.w3.org/TR/2016/NOTE-WCAG20-TECHS-20161007/G182>.

Graphs/Charts

If the document has charts or graphs, ensure that each line or segment has a non-color visual indicator. For line graphs, the visual indicator includes a unique marker, line style, or name of the line pointing to the line. For charts, the visual indicator includes a unique pattern on each segment or the name of each segment near the segment. Note: putting the values of a point on a line or of a segment does not satisfy this criterion.

Links

See the “[Links](#)” section Under “Structure.”

<https://www.w3.org/WAI/WCAG21/Techniques/general/G183.html>.

Color Contrast

All text color combinations meet WCAG 2.0 AA minimum color contrast requirements This includes images that are mainly text, such as an infographic. This does not apply to logos or images where the text is incidental to a graphic.

Tables

Use a table only to present data. Avoid using tables for layout (i.e., column layout, text boxes). When unavoidable, e.g., the Technical Documentation Form (1700.7), remove the table tags in the final 508 conformant PDF to keep content in logical order.

Format tables as proper tables. **Do not use** tabs or columns to create tables. Do not select “Enter” to add a new row. To create a table, go to the “Insert” tab and from the “Table” group select the table size from “Insert Table” on the “Table” drop down. To add a new or delete rows or columns, go to the “Layout Tab” of the “Table Tool” tab. Select the appropriate choice from the “Rows & Columns” group.

- **The table should contain only data.** Place data in its own cell. All headers should contain text.
- Place the table header (title or caption) and any footnotes/endnotes outside the table.
- Do not add alt text to tables.
- Tables are text based, not an image. See [“Text as Text.”](#)

Set table property options

Go to the “Design” tab on the “Table Tools” tab. In the “Table Style Options” group, check “Header Row” and “First Column.”

Set the row properties

Go to the “Layout” tab on the “Tables Tools” tab and select “Properties” from the “Table” group. Go to the “Row” tab. On this tab:

- a. Select all cells and uncheck “Allow Rows to break across pages.”
- b. Select the header rows(s) and check “Repeat as header row at the top of each page.”

Simple Tables

A simple table is one that has one level of column and/or one level of row headers and no cells that span multiple rows and/or columns. In the example below, the column headers are the first row of cells; ‘State,’ ‘Cats,’ ‘Dogs,’ and ‘Rabbits.’ The row headers are the cells in the first column, excluding the first row which is the column header. In this case, the row headers are ‘Alabama,’ ‘Arizona,’ ‘Alaska,’ and ‘Arkansas.’

State	Cats	Dogs	Rabbits
Alabama	7101	6064	3167
Arizona	9030	9410	4003
Alaska	19009	16980	1075
Arkansas	267	467	131

One way assistive technologies read properly marked up tables ([see PDF documentation](#)) is similar to the game Battleship. It will read down a column and across a row to a data cell. It will then identify the column and row header(s) for that data cell. It will tell someone there are 131 rabbits in the state of Arkansas.

Note: Tables may not be 508 conformant in Word. The final remediation is done in the tags in a PDF or HTML file. Formatting tables properly in the source makes it easier to remediate in the final PDF or HTML file.

Identify the header(s) for each row and column. Every header cell should have content.

Do not put attach two or more tables together, not even by a blank row or column. Create two separate tables. For example, if a document has a 2-column table that list all states and some data for that state, leave the tables as a long table with 2 columns. Do not break the table in half and put the second half next to the first half to create a table with 4 columns.

Complex tables

Complex tables are tables that have two or more header rows and/or columns or have cells that span two or more rows and/or columns.

When using complex tables ensure that all the data under the column headers is associated with those headers. Similarly, all the data in a row is associated with the row headers.

Location		Domestic			Wild		
State	County	Cats	Dogs	Rabbits	Bears	Deer	Moose
Alabama	Baldwin	7101	6064	3167	654	91096	30654
	Bibb	6735	367	47	7473	36346	63456
Alaska	Anchorage	19009	16980	1075	1970	9838	14179
	Juneau	634	8585	86	4266	13984	36546
	Sitka	6864	4782	9456	8457	6798	26747
Arizona	Gila	9030	9410	4003	3712	6700	60
	Maricopa	8252	732	3077	37834	3796	21656
	Pima	7356	634	963	23255	346346	2523
Arkansas	Ashley	267	467	131	5764	585	897
	Boone	9672	7832	5633	6155	2323	2622
	Clay	1534	6416	1259	1145	736	63623

Using the Battleship model discussed in the simple table section, this table is read in the same way. There are 131 domestic rabbits in the county of Ashley in the state of Arkansas.

Do not format the table so row headers are placed in cells that span the columns to visually group data:

Location	Domestic			Wild		
	Cats	Dogs	Rabbits	Bears	Deer	Moose
Alabama						
Baldwin	7101	6064	3167	654	91096	30654
Bibb	6735	367	47	7473	36346	63456
Alaska						
Anchorage	19009	16980	1075	1970	9838	14179
Juneau	634	8585	86	4266	13984	36546
Sitka	6864	4782	9456	8457	6798	26747
Arizona						
Gila	9030	9410	4003	3712	6700	60
Maricopa	8252	732	3077	37834	3796	21656
Pima	7356	634	963	23255	346346	2523
Arkansas						
Ashley	267	467	131	5764	585	897
Boone	9672	7832	5633	6155	2323	2622
Clay	1534	6416	1259	1145	736	63623

Note: while it is possible to mark up a table like this, it is beyond the scope of this or the PDF/HTML documentation.

Ensure tables are regular. That is, each row has the same number of columns and each column has the same number of rows (including row and column spans). Keep the table rectangular. Do not remove a cell completely like the one below.

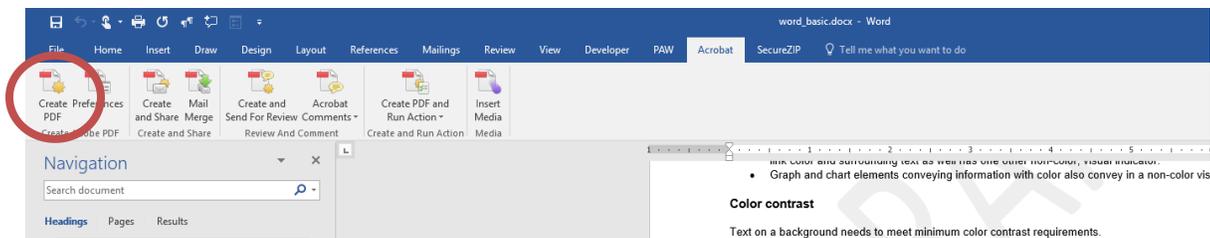
	Cats	Dogs	Rabbits
Alabama	7101	6064	3167
Arizona	9030	9410	4003
Alaska	19009	16980	1075
Arkansas	267	467	131

Forms and Macros

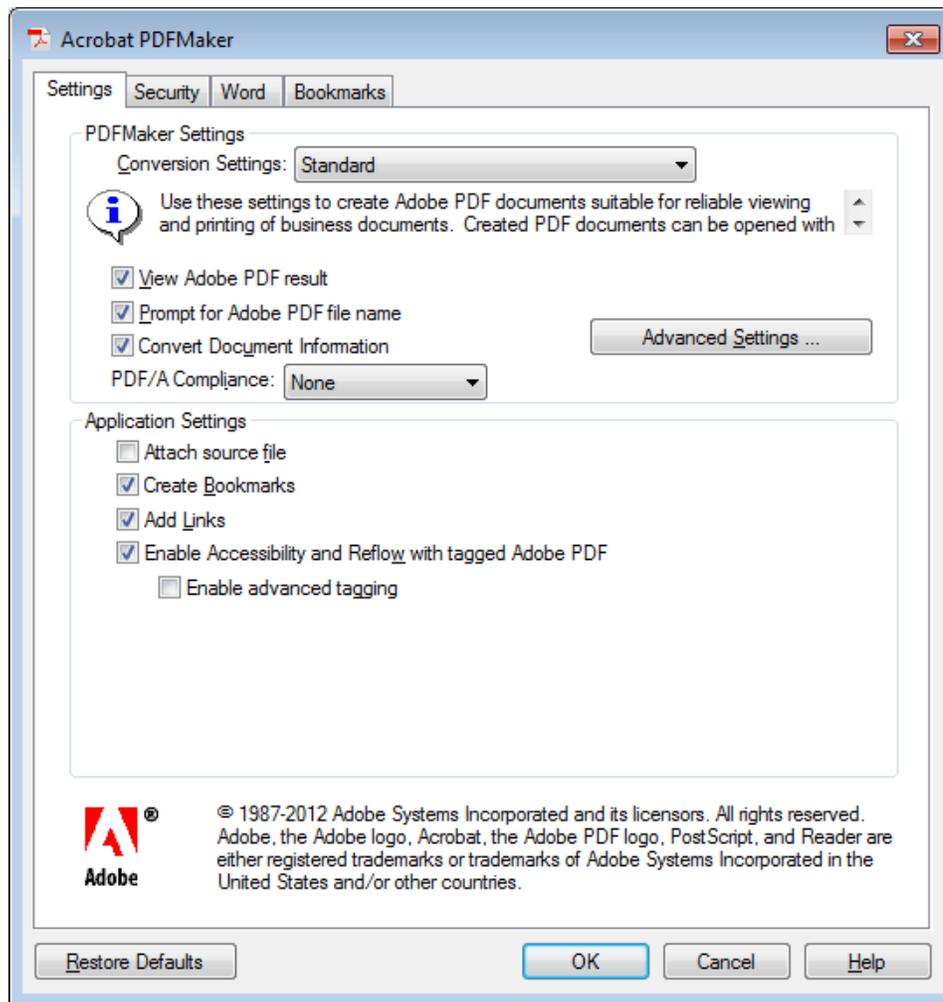
- Forms and documents with macros are beyond the scope of this documentation. Contact the [Agency Section 508 Coordinator](#) for more information.

Creating an Adobe PDF File from a Microsoft Word 2010 Document:

Go to the “Acrobat” tab.



Select “Preferences” in the “Create Adobe PDF” group. On the “Settings” tab under “Application settings” check “Enable Accessibility and Reflow with tagged Adobe PDF.” Do not check “Enable advanced tagging.” Select “OK.”



Next, select “Create PDF,” which is also on the “Create Adobe PDF” group. **DO NOT** Print to Adobe PDF. Save the Word file if prompted.

NOTE: This does not make the document 508 conformant. Additional steps are required within the PDF file. [See the documentation on remediating a PDF.](#)

References and Resources

- [http://www.hhs.gov/web/508/.](http://www.hhs.gov/web/508/)
- [http://webaim.org/standards/508/checklist.](http://webaim.org/standards/508/checklist)
- [http://www.access-board.gov/.](http://www.access-board.gov/)
- [http://www.section508.gov/.](http://www.section508.gov/)
- [http://www.ssa.gov/accessibility/508_overview.html.](http://www.ssa.gov/accessibility/508_overview.html)
- [http://www.ssa.gov/accessibility/bpl/default.htm.](http://www.ssa.gov/accessibility/bpl/default.htm)
- [https://www.w3.org/TR/WCAG20-TECHS/complete.html.](https://www.w3.org/TR/WCAG20-TECHS/complete.html)
- [https://www.hhs.gov/web/section-508/making-files-accessible/index.html.](https://www.hhs.gov/web/section-508/making-files-accessible/index.html)
- <https://www.w3.org/WAI/WCAG21/quickref/> Filtered for WCAG 2.0 A and AA.