
Creating Accessible Word 2010 Documents

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1. Introduction

The Microsoft Office 2010 suite has many new features and functionality that can be used to enhance the accessibility of Microsoft Word, Excel and PowerPoint documents. These features, in conjunction with the functionality already available in the software, create a program that enables the accessibility of Microsoft Office 2010 documents.

These features and functionality should be applied to source documents to assist every individual who will read, use, create or navigate the document. It requires creating documents in a manner that encompasses the concept of universal design (*inclusiveness and equitable access for all regardless of age, ability or status in life*). As an example, by using a font size of 12pt or higher it creates content that can be more clearly read; by using styles and formatting to add headings to a document the structure can be more easily identified and navigated by all; or finally, by providing meaningful and descriptive hyperlink text a user can clearly understand the context and purpose of a link. By designing source documents with accessibility in mind, all users benefit.

Even if the final format of the document will not be the same as the format it was created in, it is still important to design the document with accessibility in mind. Much of the functionality applied to a source document will be transferred over to the new format during the conversion process (e.g. from Word to PDF, etc.).

2. Terms of Use

While the instructions and techniques discussed in this guide will help enhance the accessibility of Word documents, it does not guarantee accessibility. It is recommended that an automated and manual assessment of the Word document(s) be completed to identify any accessibility issues that require remediation. In addition, it is recommended that a person proficient in the use of assistive technology test the document(s) to verify accessibility, when possible.

3. Styles & Formatting

3.1 Format

As mentioned previously, it is important to design the source document with accessibility in mind. This includes the general text and formatting of the document itself. Below are a few general text and formatting tips for enhancing the accessibility of Microsoft Word, PowerPoint and Excel documents. This list is by no means exclusive, but it will provide some key tips for improving the accessibility of these documents.

- Use a 12 point font or greater for text;
- Choose typefaces that are sans serif or non fancy (e.g. Arial or Verdana) – see additional information about sans-serif fonts in section 3.1.1;
- Use fonts of normal weights;
- Set font colour to 'Automatic' or 'Black';
- Avoid large amounts of text set in all caps, italics or underline;
- Add sufficient white space between text and graphics;
- Avoid using animated, flashing or scrolling text.

3.1.1 Typeface

Typefaces are typically described as serif or sans-serif (e.g. with or without serifs). Serifs are small embellishments at the end of letter strokes that are typically used for decoration. Serif fonts are generally more difficult to read as they are more decorative in nature and are likely to have more of a hand written, cursive or italic style. Sans-serif fonts are generally clean, modern and simple font styles that are easier to distinguish on the screen.

Below is an example of two different typefaces (left with serifs; right without):

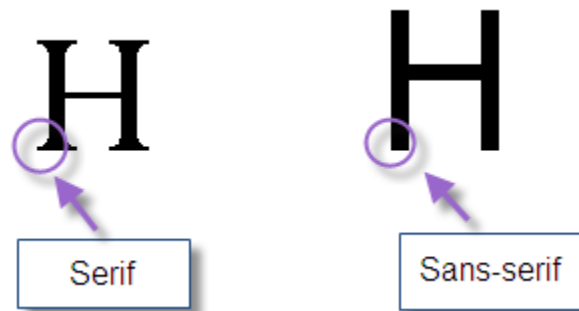


Figure 1: This example shows a typeface (Perpetua) with a decorative embellishment called a serif and a typeface (Arial) with no serifs.

3.2 Use of Colour

The use of colour is also important in improving the accessibility of a document. The [Web Content Accessibility Guidelines \(WCAG\) 2.0](#) Level AA advises that foreground and background colours have a contrast ratio of at least 4.5:1 (with a few exceptions). The recommended colour combination is black text on white background or white text on a black background as this provides a very high contrast allowing for easier reading.

Below are some examples of high and low colour contrasts:

High Colour Contrast Examples:

Black text on a white background – Colour Contrast Ratio 21.0:1.

White text on a black background – Colour Contrast Ratio 21.0:1.

Yellow text on a navy blue background – Colour Contrast Ratio 14.91:1.

Low Colour Contrast Examples:

Green text on a pink background – Colour Contrast Ratio 2.1:1.

Red text on a white background – Colour Contrast Ratio 4.0:1.

Purple text on an orange background – Colour Contrast Ratio 3.2:1

A useful tool for checking colour contrast is the [Juicy Studio Luminosity Colour Contrast Ratio Analyzer](#) which allows the user to input the hex numbers for the background and foreground colours to calculate the contrast ratio and determine if it meets the WCAG 2.0 criteria.

In addition, a single solid colour should be used for a background rather than a patterned background. A solid background colour allows the text to be read more easily than having a pattern which distracts from the text and makes the text harder to read. Below are some examples to demonstrate:

Single Solid Colour Background Example:

This is an example of a single solid colour background with text.

Patterned Background Example:

This is an example of a patterned background with text.

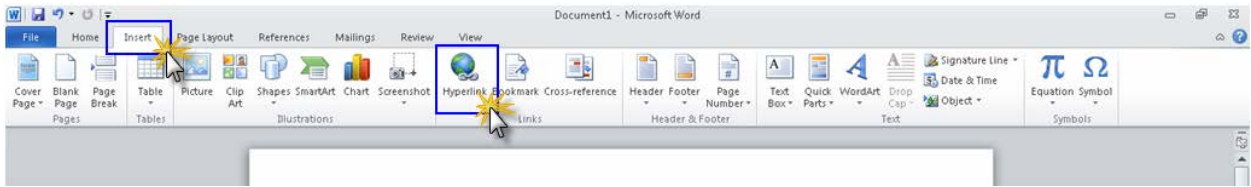
3.3 Hyperlinks

When developing content for a document, ensure all hyperlinks have meaningful text descriptions and provide sufficient context as to the purpose of the hyperlink. Hyperlinks can be used as navigation aids within a document and should make sense when read in context, therefore, always use a text description that is meaningful when creating a hyperlink.

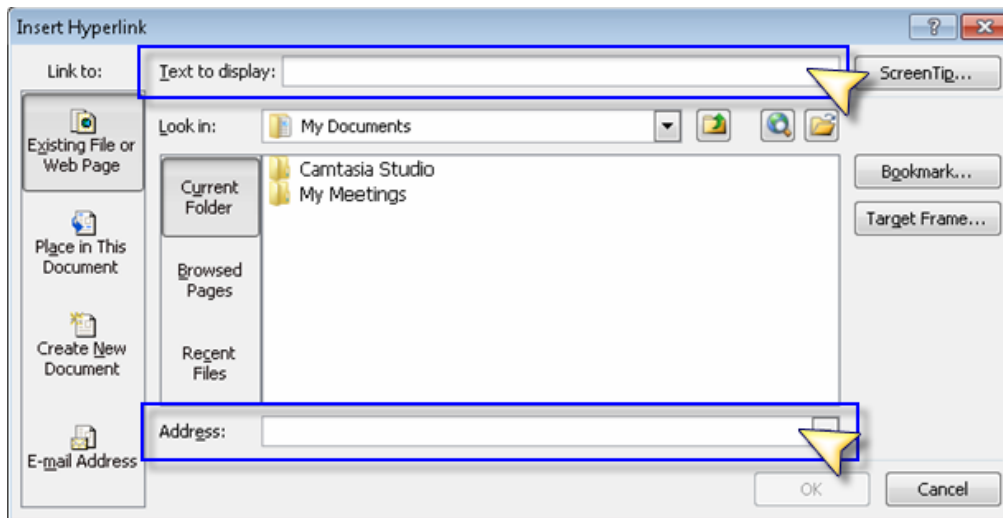
For example, if there was a hyperlink in this document that pointed to the Ryerson University internet site, the text description for the hyperlink should not simply state '[Click here](#)' as the text has no meaning and it is not entirely clear where the hyperlink will take the reader once activated. A more meaningful and descriptive hyperlink would be '[Ryerson University internet site](#)'.

How to Add a Hyperlink in a Document:

- (a) Select the **Insert** tab in the ribbon bar;
- (b) Select the **Hyperlink** button;

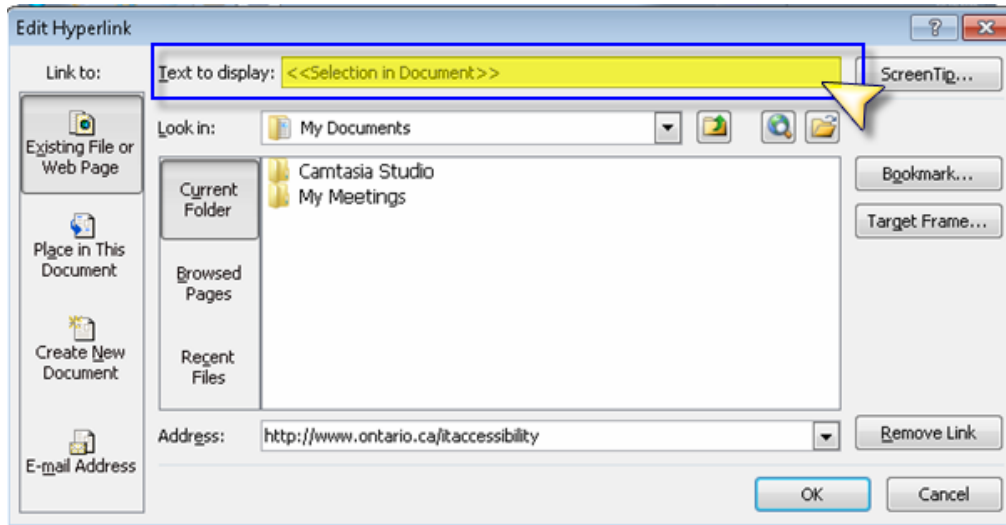


- (c) In the **Insert Hyperlink** dialogue box that appears, add the URL to the **Address field**;
- (d) Add text into the **Text to Display field**. Please note that the content added to this field will be shown as the text description on the page. This text should be meaningful and descriptive so a reader will understand where the link will go once activated.
- (e) Select **OK**.



How to Add a Hyperlink to Existing Text on the Page:

- (a) Highlight the text on the page where the hyperlink will be created;
- (b) Select the **Insert** tab in the ribbon bar;
- (c) Select the **Hyperlink** button;
- (d) In the **Edit Hyperlink** dialogue box that appears, add the URL to the **Address field**;
- (e) The **Text to Display field** will be unavailable and state “<<Selection in Document>>”. The text that will be displayed for the hyperlink has already been highlighted and selected on the page.
- (f) Select **OK**.



3.4 Headings

Design Word documents using styles (e.g. Heading 1, Heading 2, Body Text) as they:

- add the structure necessary for content to be accessed from the general to the specific;
- order the headings to provide meaningful sequence to assistive technology users; and
- allow users of text-to-speech software to use the headings to navigate through the document without having to read all the content.

Headings should progress in a hierarchical manner based on the content (e.g. Heading 2 should come after Heading 1). Styles and formats can be viewed and modified using the Quick Styles Gallery (see instructions below).

Headings should be used to separate paragraphs instead of simply using the enter key to apply manual spacing. All content within the document should have a style applied to it with the “Normal” heading only used when it contains body content. It is important to use the default heading styles provided in Word, rather than creating custom headings. Experience shows that custom headings may not be properly recognized by screen reading technology. Customizing styles to achieve a specific layout (e.g. specific typeface and font size, etc.) can still be achieved by using default headings – see instructions below.

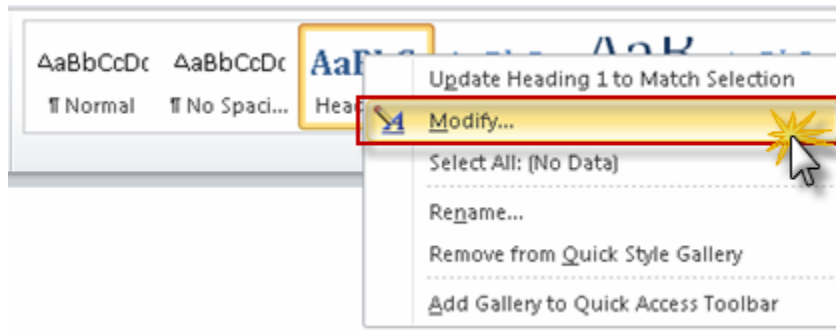
To apply heading styles to your document:

- Highlight the text on the page to apply the heading style;
- Select the **Home** tab in the ribbon bar;
- In the **Style** group, select the appropriate level heading from the **Quick Styles Gallery**.

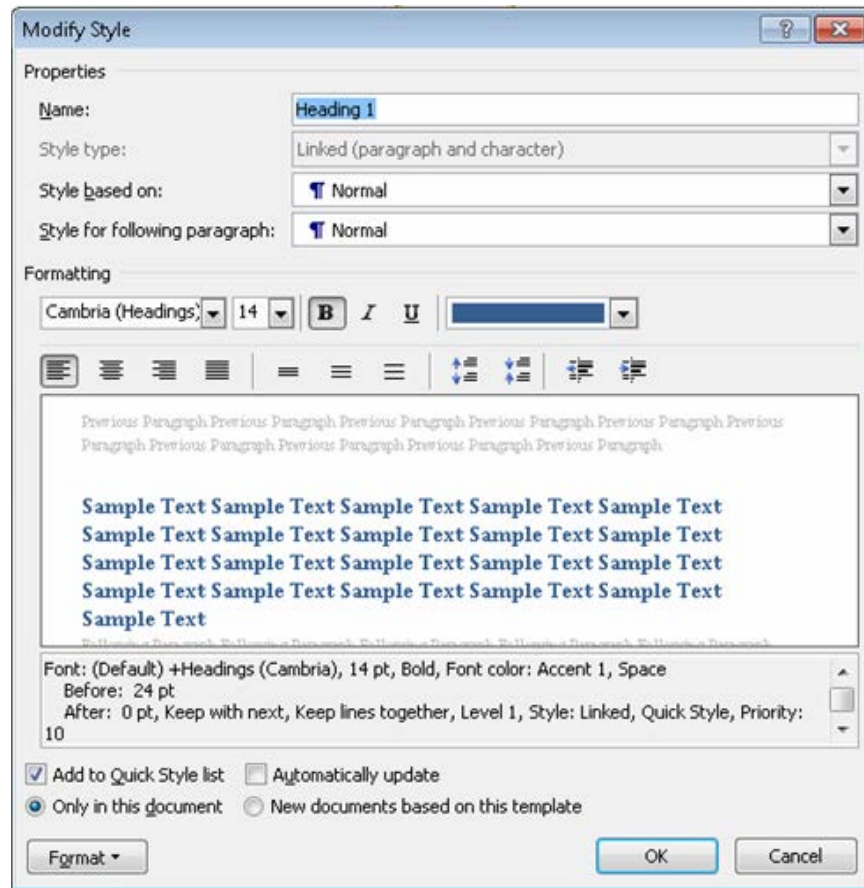


To modify a heading style:

- (a) Select the **Home** tab in the ribbon bar;
- (b) In the **Styles** group, right-click the style that requires modification from the **Quick Styles Gallery**;
- (c) Select **Modify** from the menu that appears;



- (d) In the **Modify Style** dialogue box, make the necessary changes to the formatting (e.g. font size, typeface, colour, justification, etc.);
- (e) Select **OK**.



4. Layout & Structure

4.1 Tables

The table feature in Word should always be used rather than manually spacing using the TAB key or space bar to simulate a table. Tables should only be used for tabular information. They should not be used for formatting and layout. For increased usability, tables should be structured with no merged cells, blank cells or nested tables. If the data contained in a table is complex, the data sets should be divided into smaller tables rather than have one large complex table.

Each table should have marked table headers. Please ensure that the header cells are clear and concise.

To specify a header row in a table:

- (a) Place the cursor in any cell within the table;
- (b) Select the **Table Tools-Design** tab in the ribbon bar;
- (c) In the **Table Style Options** group, select the **Header Row** check box. This will apply special formatting and structure for the first row in the table.

Note: Presently, when the headers are specified in a table this information is not being communicated to assistive technologies. As an alternative for Job Access with Speech (JAWS) users, bookmarks can be added to tables to specify the headers in a table and provide easier navigation – see instructions for inserting bookmarks below.

For tables that have row and column headers:

- (a) Place the cursor in the cell where the row and header columns meet;
- (b) Select the **Insert** tab in the ribbon bar;
- (c) In the Links section, select **Bookmark**;
- (d) Type '**Title_1**' and press enter.

For tables that have only column headers:

- (a) Place the cursor in the first column of the table containing the header;
- (b) Select the **Insert** tab in the ribbon bar;
- (c) In the Links section, select **Bookmark**.
- (d) Type '**ColumnTitle_1**' and press enter.

For tables that have only row headers:

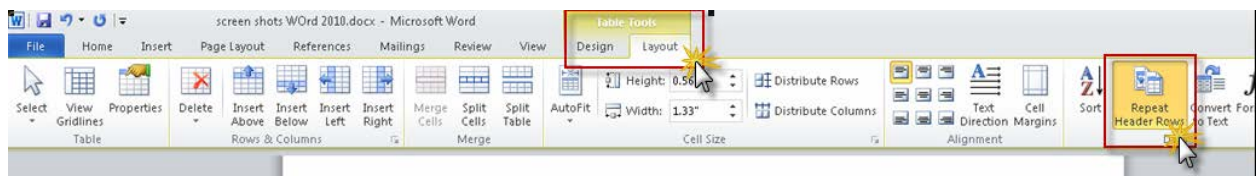
- (a) Place the cursor in the first column of the table containing the header;
- (b) Select the **Insert** tab in the ribbon bar;
- (c) In the Links section, select **Bookmark**.
- (d) Type '**RowTitle_1**' and press enter.

Please note: only one bookmark per table is required as JAWS will recognize the entire marked row and/or column as table headings.

In addition, the repeat headers at top of page option should be turned on to assist with the flow of information.

To turn on repeat headers option:

- (a) Place the cursor in any cell within the table;
- (b) Select the **Table Tools-Layout** tab in the ribbon bar;
- (c) In the **Data** group, select the **Repeat Header Rows** button.



4.2 Lists

It is important when creating a Microsoft Word documents to use the functionality available in the software itself for layout and formatting. Use real lists in the document instead of simulating lists using the TAB key or space bar. This also applies to numbering, tables and other layout formatting tools available in Word.

4.3 Table of Contents

When creating long documents, it is recommended that a hyperlink enabled table of contents is inserted near the beginning of the document. By having an interactive table of contents, the user can navigate to specific sections directly, without having to read the entire document.

The heading structure of the document is used to create the table of contents by providing the needed structure. For more information on headings, see section. 3.4.

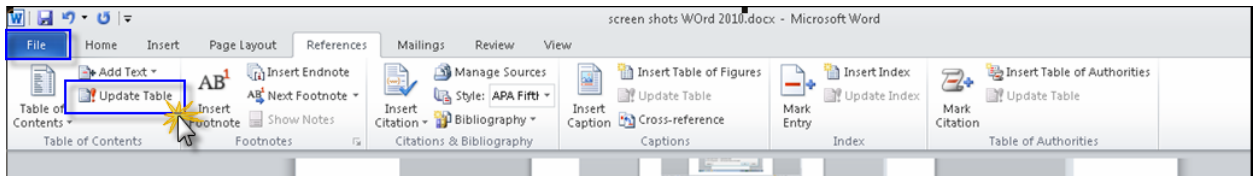
To insert a table of contents:

- (a) Place the cursor in the document where the table of contents will be situated;
- (b) Select the **References** tab in the ribbon bar;
- (c) In the **Table of Contents** group, select **Table of Contents**;
- (d) Select a desired style for the table.



To update the table of contents:

- (a) Select the table of contents in the document (**note**: the table of contents will appear highlighted when selected);
- (b) Select the **References** tab in the ribbon bar;
- (c) In the **Table of Contents** group, select the **Update Table** button.

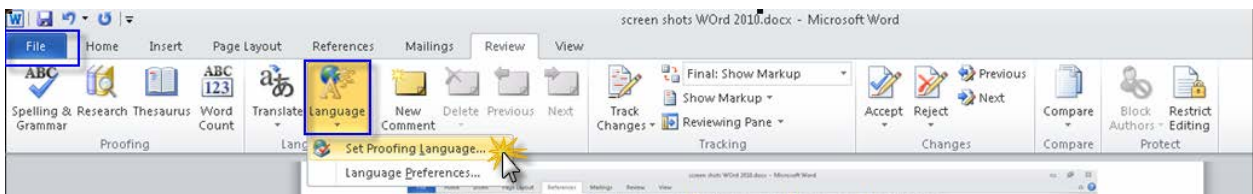


4.4 Specifying Language

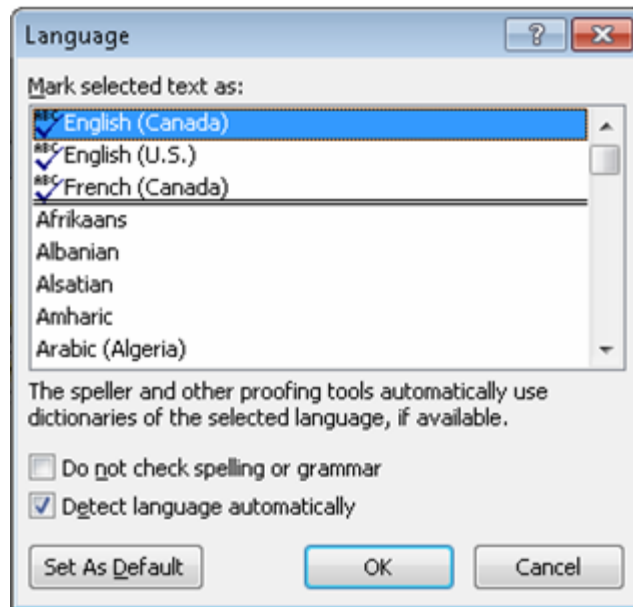
Some screen reader technologies have the ability to switch to the appropriate spoken language by identifying the language for the document. By using the correct language setting in Word, it allows the screen reader technology to correctly enunciate the content in the document.

To indicate the language of a selected section of text:

- (a) Highlight the section of text that requires a specific language (**note**: if the entire document is written in one language, select all of the text in the document);
- (b) Select the **Review** tab in the ribbon bar;
- (c) In the **Language** group, select the **Language** button;
- (d) Select the **Set Proofing Language** option from the menu that appears;

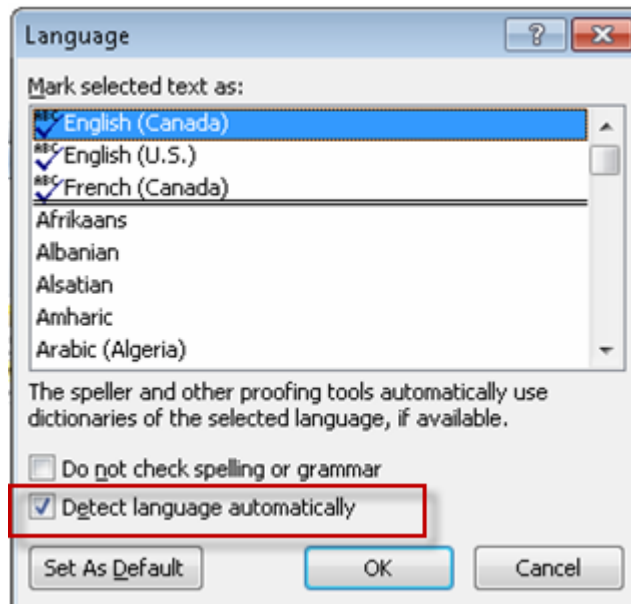


- (e) In the **Language** dialogue box that appears, choose the appropriate language from **Mark Selected Text As** list.
- (f) Select **OK**.



To detect language automatically for the entire document:

- (a) Select the **Review** tab in the ribbon bar;
- (b) In the **Language** group, select the **Language** button;
- (c) Select the **Set Proofing Language** button from the menu that appears;
- (d) In the **Language** dialogue box that appears, select the **Detect Language Automatically** check box;
- (e) Select **OK**.



5. Images & Objects

5.1 Alternative Text for Images & Objects

Alternative text is read by screen readers to provide assistive technology users with a description of the image or graphic. When a screen reader comes across an image with no alternative text, a couple of things may occur:

- The image is skipped (as if it did not exist on the page);
- The file name associated with the image is read to the user (e.g. img1245.gif).

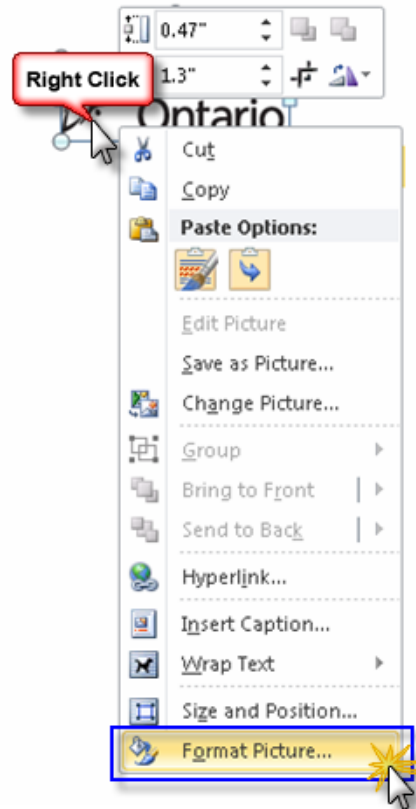
When creating an alternative text description, ensure the text alternative communicates the purpose and meaning of the image and/or graphic.

An alternative text description should be a short description of the image. If the image is complex and requires a longer description, it is recommended that the image receive a short alternative text description and a longer description be provided as text on the page. Ensure that any images of text are replicated in the description.

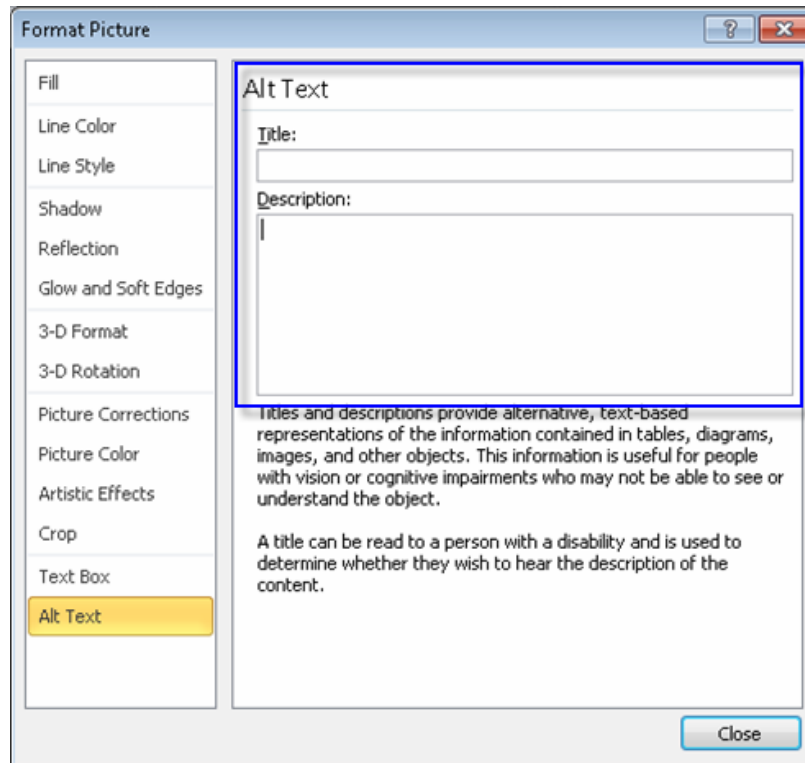
Alternative text can be included for the following objects in Microsoft Word 2010: pictures, clipart, charts, tables, shapes, SmartArt graphics, groups (all but shapes), embedded objects, ink, etc.

To add alternative text:

- (a) Right-click on the image or object;
- (b) Select **Format Picture** from the menu that appears;
 - o For tables, select **Table Properties** from the menu that appears;



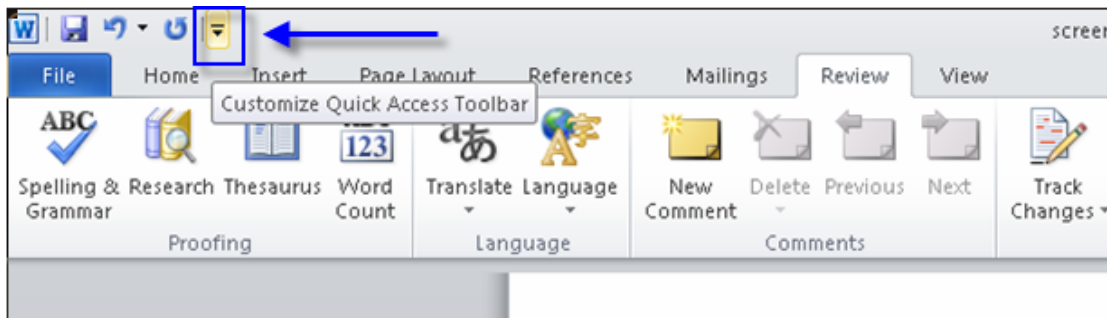
- (c) Select **Alt Text** from the left hand column in the **Format** dialogue box. **Alt Text** will be the last option in the left column;
- (d) Insert a meaningful and descriptive alternative text of the image or object in the **Title** field. There is an additional field labeled **Description** that can be used to provide more detail about the image or object. According to Microsoft documentation, "a title can be read to a person with a disability and is used to determine whether they wish to hear the description of the content."
- (e) Select **Close**.



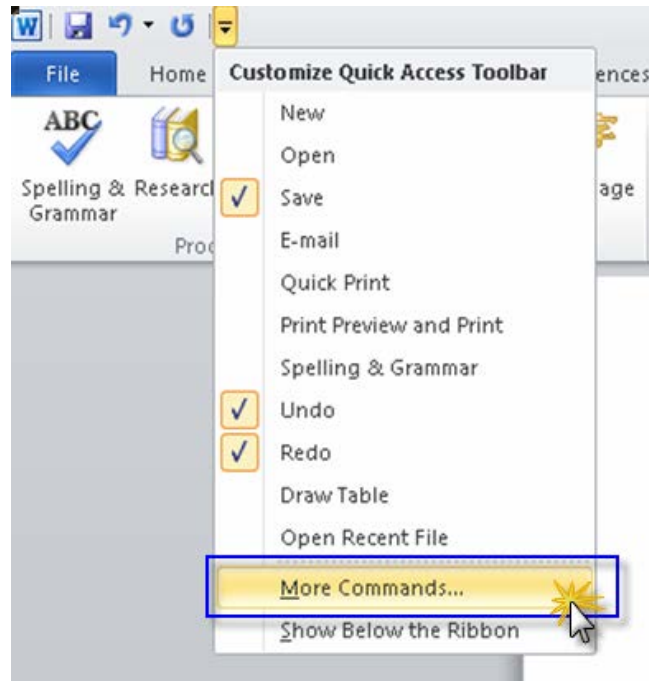
Another feature of the Microsoft Word 2010 application is the ability to add commands to the Quick Access Toolbar for frequently used commands. The Alt. Text command can be added to the Quick Access Toolbar so the author can easily access the command.

To add the Alt. Text command to the Quick Access Toolbar:

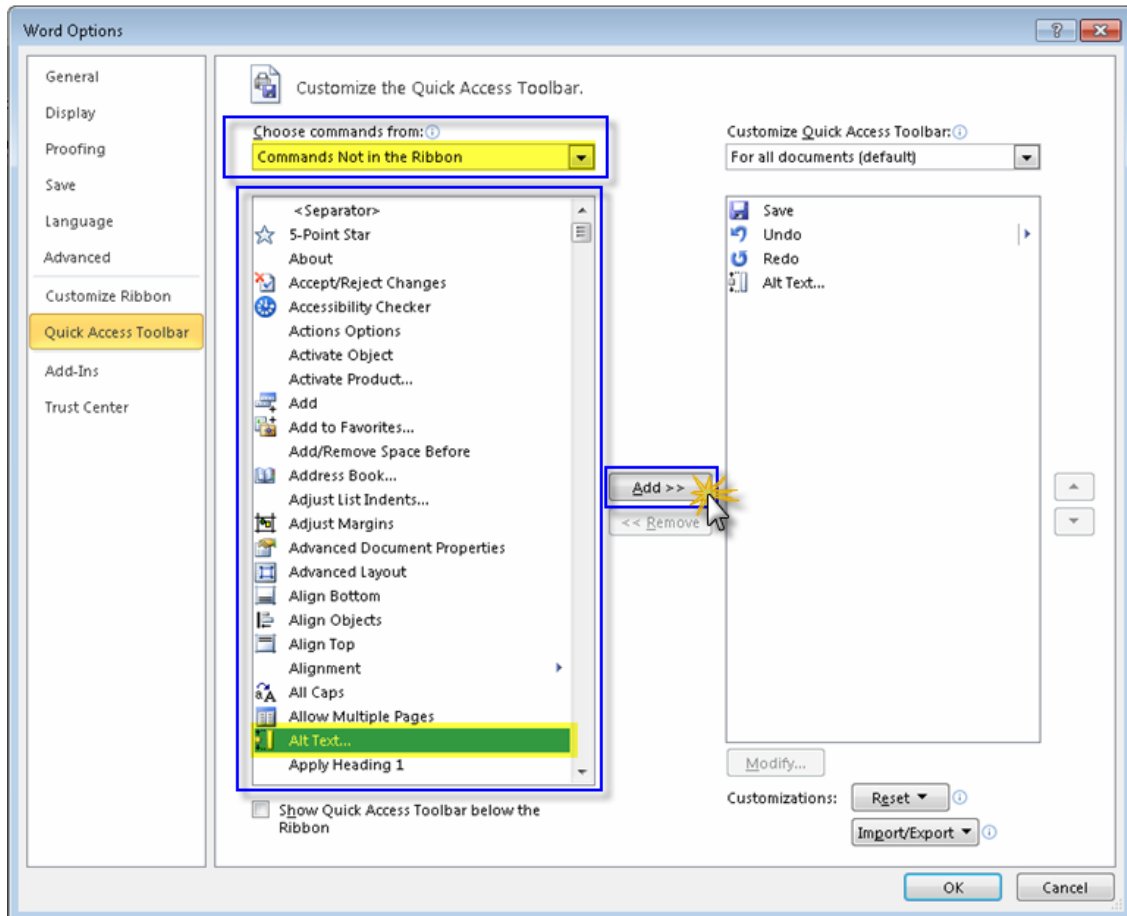
- (a) Select the **Customize Quick Access Toolbar** button in the top left corner of the application (above the ribbon bar);



- (b) Select the **More Commands** option in the menu that appears;

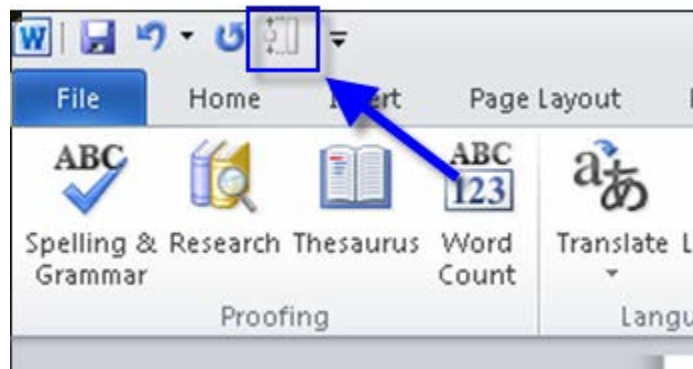


- (c) A Word Options dialog box will appear. In the **Choose Commands From** drop-down menu, select **Commands not in the Ribbon**;
- (d) In the Commands list, select **Alt Text**;
- (e) Select the **Add** button.
- (f) Select **OK**.



To use the Alt. Text command after adding it to the Quick Access Toolbar:

- (a) Select the shape, picture, chart, SmartArt graphic, table or other object;
- (b) Select the **Alt Text** command button in the **Quick Access Toolbar** (top left corner of the application – above the ribbon bar). This will open the **Format** dialogue box automatically to the **Alt Text** option;



- (c) Enter text into the Title and Description fields as appropriate.
- (d) Select **Close**.

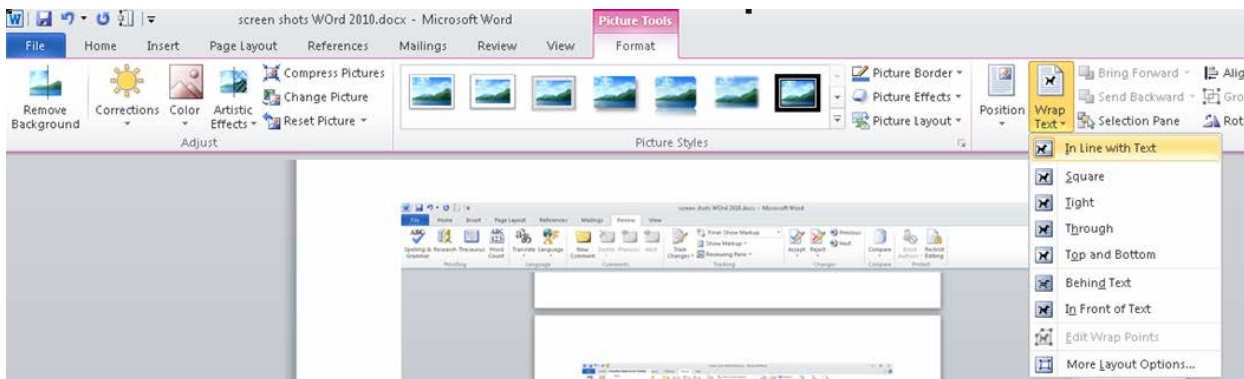
5.2 “Floating” Elements

Text boxes should be avoided in a document as they are generally inaccessible by screen reader technology. As an alternative, content should be placed directly on the page itself. This same rule applies to watermarks, so it is best to avoid using them altogether unless the text content or described graphic of the watermark is included in a logical place within the document.

In addition, objects in a document should be inserted as inline objects. While this is done by default, they occasionally may be inserted as or changed to floating elements. An inline object keeps its position on the page relative to a portion of text, whereas, a floating object keeps its position relative to the page regardless of the flow of text behind it. With a floating object, the element can be positioned anywhere on the page, including in front of text, creating numerous accessibility issues.

To change the position of an object to be inline with text:

- (a) Select the object;
- (b) Select the **Picture Tools – Format** tab from the ribbon bar;
- (c) In the **Arrange** group, select the **Wrap Text** button;
- (d) Select the **In Line With Text** option from the menu that appears.



6. Checking for Accessibility

A new accessibility feature in Microsoft Word, Excel and PowerPoint 2010 is the Accessibility Checker. This tool will assist authors to proactively identify accessibility issues in a document. The tool highlights potential problems and recommends application specific tips to assist in the remediation of any identified issues.

The Accessibility Checker identifies issues based on a pre-determined set of rules that may prevent users from fully accessing the content of a document. Three categories of issues can be identified:

- **Errors:** Issues identified as errors could potentially make it very difficult or impossible for persons with disabilities to fully access and understand content.

- **Warnings:** Issues identified as warnings may cause difficulties, in some cases, for persons with disabilities to access and understand content.
- **Tips:** Issues identified as tips are recommendations for better organization of content to ensure the content is presented effectively and efficiently.

For more information on the Accessibility Checker rules, refer to section 6.1.

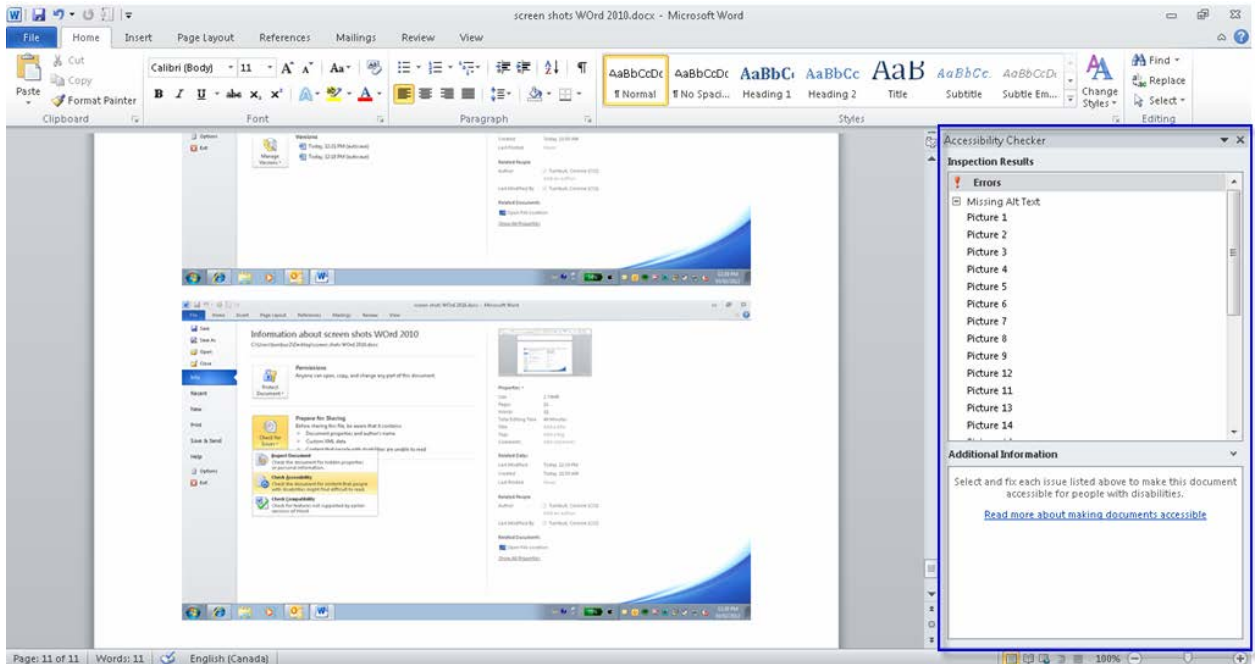
Once the Accessibility Checker tool has completed its analysis, information about each potential issue is presented in the Accessibility Checker task pane (Inspection Results). Each issue can be selected by the user, which in turn, reveals more information about how to remediate the selected issue.

To use the Accessibility Checker Tool:

- (a) Select the **File** tab in the ribbon bar;
- (b) Select **Info** from the left hand column;
- (c) Under the **Prepare for Sharing** section, the user will initially be informed if any issues have been found in the document. For example, the alert may state: "Before sharing this file, be aware that it contains...content that people with disabilities are unable to read..."
- (d) Select the **Check for Issues** button;
- (e) Select **Check Accessibility** from the drop-down menu that appears;

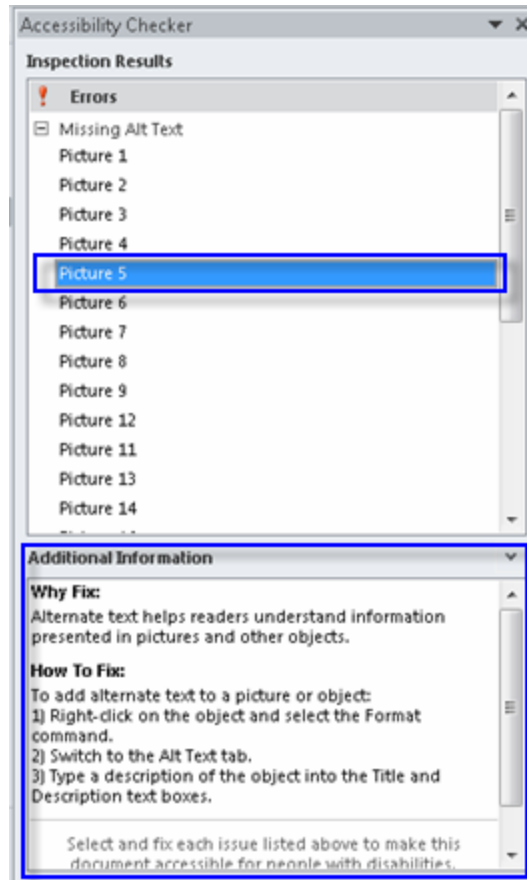


(f) After the check is completed, the **Accessibility Checker** task pane (Inspection Results) will open on the right hand side of the document showing the results.



When a specific issue is selected in the Inspection Results list, information in the **Additional Information** section of the task pane will provide recommendations for remediation for the selected issue.

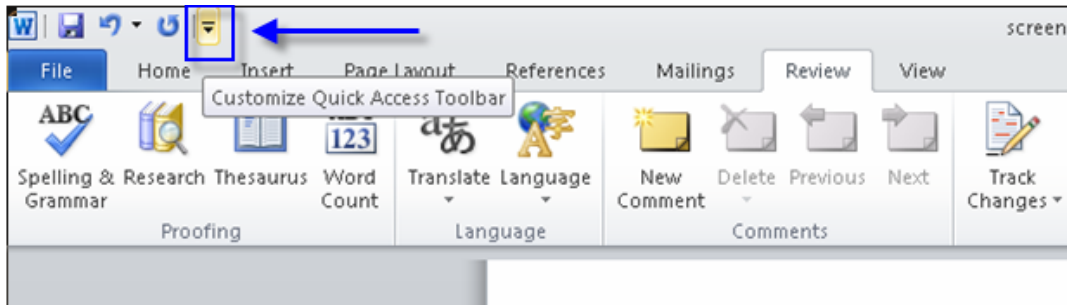
- **NOTE:** The additional information section can be navigated by using the mouse to scroll down through the information or by pressing F6 to focus on the task pane, tabbing until the focus is in the Additional Information area then proceeding to scroll using the keyboard.



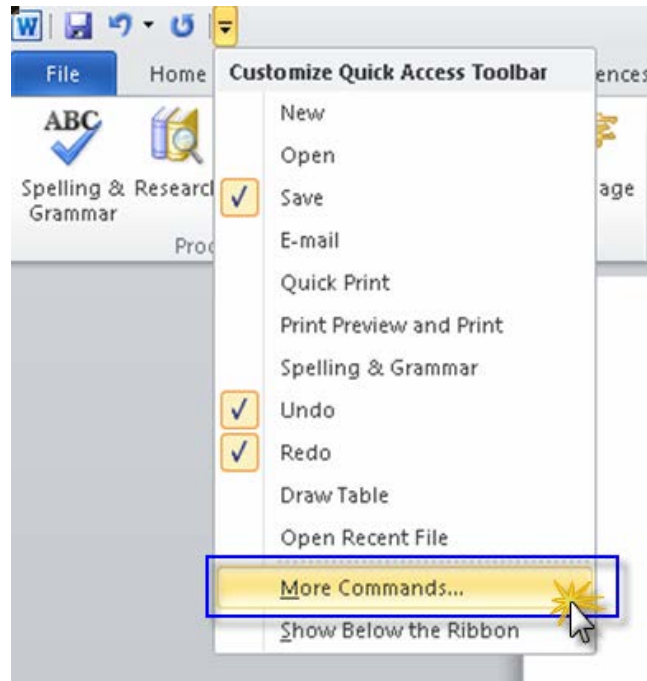
The Accessibility Checker command can also be added to the Quick Access Toolbar so the author can easily access the command. The I&IT Accessibility Centre of Excellence (ACOE) highly recommends that all OPS staff add the Alt. Text and Accessibility Checker commands to the Quick Access Toolbar in Word, PowerPoint and Excel 2010.

To add the Accessibility Checker command to the Quick Access Toolbar:

- (a) Select the **Customize Quick Access Toolbar** button in the top left corner of the application (above the ribbon bar);



(b) Select the **More Commands** option in the menu that appears;

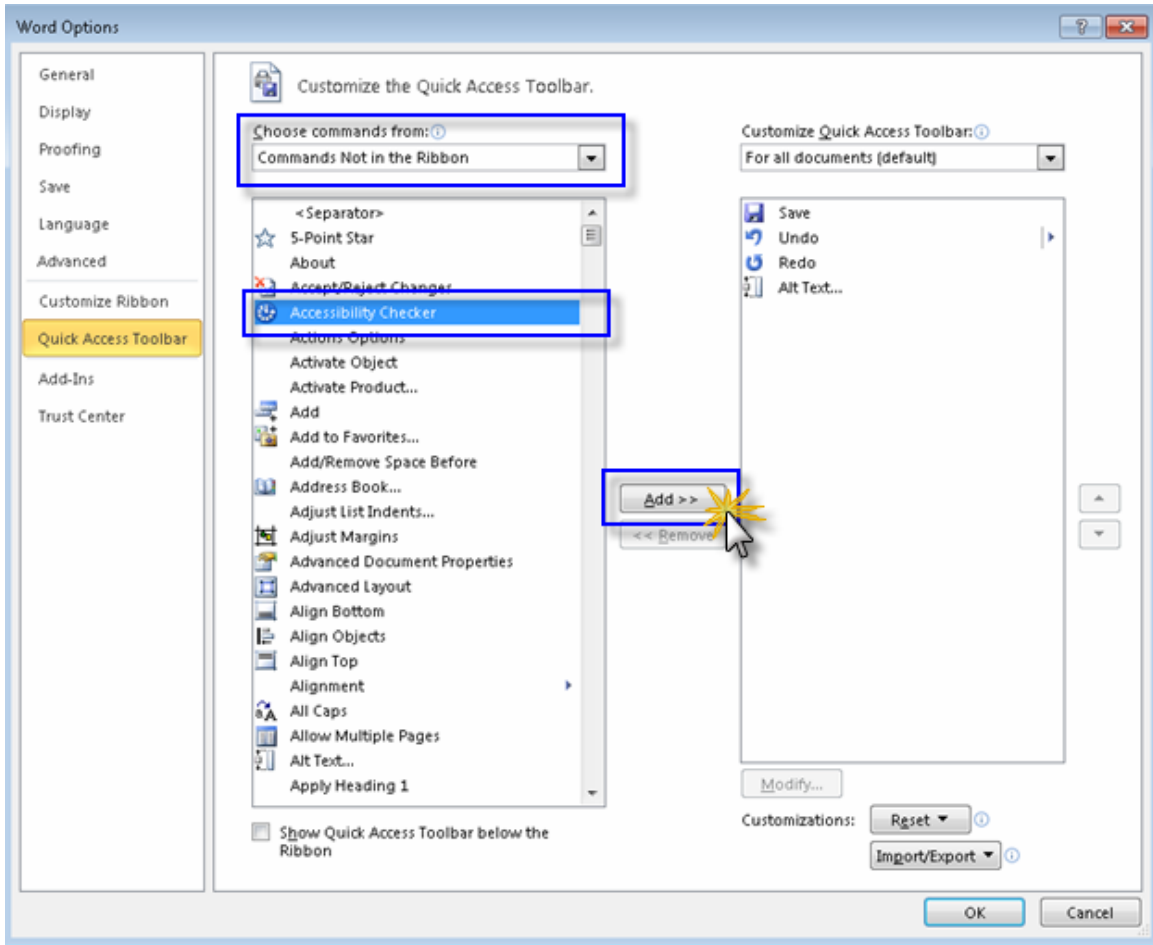


(c) A Word Options dialogue box will appear. In the **Choose Commands From** drop-down menu, select **Commands not in the Ribbon**;

(d) In the Commands list, select **Accessibility Checker**;

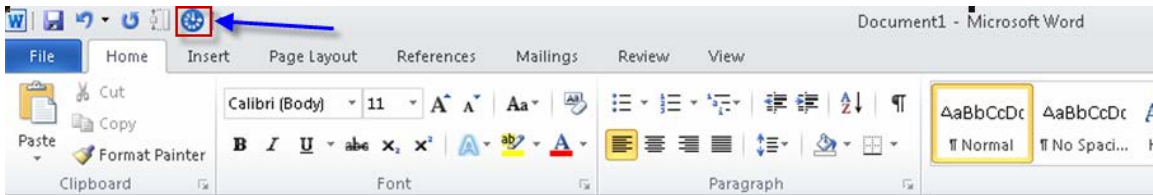
(e) Select the **Add** button.

(f) Select **OK**.



To use the Accessibility Checker command after you have added it to the Quick Access Toolbar:

- (a) Select the **Accessibility Checker** command in the **Quick Access Toolbar**;
- (b) The document will automatically be checked for accessibility issues. Any identified issues will be shown in the Inspection Results list located on the right hand side of the document.



6.1 Accessibility Checker Rules

The following rules may be checked against during an accessibility check in Microsoft Word, Excel and PowerPoint 2010. For each rule, recommendations for remediation are provided to the user.

6.1.1 Error Rules

Rule Name*	Applicable Application
All objects have alternate text	Excel, PowerPoint, Word
Tables specify column header information	Excel, PowerPoint, Word
All slides have titles	PowerPoint
Long document use styles to provide structure	Word

* A detailed explanation of each error rule can be found on the [Microsoft Accessibility Support](#) website under [Accessibility Checker Rules](#).

6.1.2 Warning Rules

Rule Name*	Applicable Application
Hyperlink text is meaningful	Excel, PowerPoint, Word
Table has simple structure	Excel, PowerPoint, Word
Table don't use blank cells for formatting	Excel, PowerPoint, Word
Sheet tabs have non-default names	Excel
Avoid the use of repeated 'blank' characters	Word
Headings don't contain too much information	Word
The use of floating objects is avoided	Word

* A detailed explanation of each warning rule can be found on the [Microsoft Accessibility Support](#) website under [Accessibility Checker Rules](#).

6.1.3 Tip Rules

Rule*	Applicable Application
Closed captions are included for inserted audio and video	Excel, PowerPoint, Word
The reading order of a slide should be logical	PowerPoint
The slide titles in a deck should be unique	PowerPoint
Layout tables are structured for easy navigation	Word
No image watermarks are used	Word
All headings are in the correct order	Word

* A detailed explanation of each tip rule can be found on the [Microsoft Accessibility Support](#) website under [Accessibility Checker Rules](#).

6.2 Manual Assessment

In addition to using the built-in Accessibility Checker to complete an automated accessibility assessment of a document, a manual assessment will also need to be completed.

The purpose of a manual assessment is to apply more judgment to an assessment to catch and identify qualitative issues that might be missed or cannot be determined by an automated assessment tool. For example, manual testing is used to assess that the alternative text provided for an image is an appropriate and meaningful description of the image or that colour contrast minimums have been met, etc.

Please refer to the [manual assessment checklist for Word 2010](#) documents for more information. Please note that this checklist is by no means a comprehensive list of all manual checks to be completed, however, it provides a great starting point and quick reference.

7. References & Additional Help

7.1 Access Ryerson Resources

[Accessibility At Ryerson](#)

[DMP office - Web accessibility](#)

7.2 Microsoft Office Support

[Microsoft Office Support Website – Word Help and How-To](#)

[Microsoft Office Support – Creating Accessible Word Documents](#)

[Microsoft Office Support – Accessibility Features in Word](#)

[Microsoft Office Support – Accessibility Checker](#)

[Microsoft Office Support – Accessibility Checker Rules](#)

7.3 Additional Resources

[OPS Diversity Office Accessible Document Resources](#)

[Accessible Digital Office Documents \(ADOD\) Project](#)

[Juicy Studio Luminosity Colour Contrast Ratio Analyzer](#)