

More Accessible Tables and Columns



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Introduction

Over the past decade or so, those of us working in the field of accessible document design have established “standards,” guidelines and best practices for optimizing the accessibility of documents including Word documents. One of the first things we learned was that using a table for design layout was generally considered bad design. This has been reinforced over the years but with the added component of barriers to adaptive technology when tables are used for design layout.

This accessible document design tutorial on tables and columns includes rationales for not using tables for design layouts and the barriers they cause to people with disabilities using adaptive technology. I would even say that some document that use tables for design layout are not even accessible in terms of readability and ability to comprehend the content, for people without disabilities.

Most file formats have a similar “don’t use tables for design layout” checkpoint or best practice..

Tables for design layout accessibility barriers

There are several accessibility barriers associated with tables used for design layout:

1. Someone using a screen reader (who is blind or visually disabled) and someone using text-to-Speech (who has a learning, cognitive, print or visual disability) **must** switch to table reading and navigation keyboard commands to access the content in any table.
2. You **cannot** use Headings in a table. Headings are navigational points in a document and navigating to a specific cell does not equate with navigating to a specific topic in a document.
 - a. Headings provide information on the structural outline of content which is another reason that they are not appropriate for a table.
3. When the document is converted to tagged PDF, the table structure for the document is also converted requiring remediation to remove it which has both a financial and human resources cost.
 - a. If the table structure is not removed, someone using a screen reader and TTS tools will be forced to use table navigation and reading commands to access the content.
4. If the document is converted to Braille, the content of the document will be in a Braille table format and the Braille transcriber will have to remediate the document to remove the table structure at an increased financial and human resources cost.

5. If a Word document is presented to someone using a screen reader and Text-to-Speech tools, the table structure must be removed to easily access the content which results in an additional financial and human resources cost.
 - a. Most students using adaptive technology request that all tables be removed from documents because they have to use different reading and navigation keyboard commands to access the content in tables.
6. If a table is nested within a table, the inaccessibility of the content is compounded because adaptive technology only looks at the table the focus is in, not the document as a whole. All of a sudden cell coordinates are repeated. For example if one hears "Table 2 cell A1" they may realize they are in a second table, however the announcement of which table they are in is only stated when the table is entered and not for every cell.
 - a. This is the correct way to access content in a table. Content in the current table structure is the focus of reading/navigation, not the entire document.
 - b. There is also no relationship between the nested table and the table used for design layout. It is like trying to navigate a labyrinth or maze and constantly get navigational coordinates while taking in the surrounding content.
7. And...it is just bad design or rather lack of design.

This accessible document design tutorial contains the following sample documents as attachments to the PDF document:

- Sample of a document created using a table for design layout.
- The same document with the table structure removed, Headings and a linked Table of Contents added.
- Sample of a document with Newspaper and Parallel Columns.
- Sample of a document with Paragraph styles creating an accessible call out.

The document where a table is used for design layout is based on an actual document that I remediated that had a table spanning 6 original columns and 165 rows. Throughout the document I remediated, columns were added and removed, merged and split and cells in rows were merged "at will." The document has a footnote and a nested table as well as an image with a caption.

As is true for the present time, the table structure was removed, Headings and a linked Table of Contents was added.

I converted the sample document included in this tutorial that uses a table as design layout to text and added the accessible format and structure including Headings and a linked Table of Contents.

I encourage you to try reading both of them using a screen reader or Text-to-Speech tool to examine the level of accessibility of each. The document with the table as a design layout has the JAWS table reading and navigation keyboard commands in Appendix A.

Keep in mind that it is **“NOT permitted”** to use Headings in a table. It is poor document design. Headings are used as structural elements to provide information on the logical order of content and to be able to navigate to a specific topic or sub-topic in a document not a specific cell.

By attempting to use a heading in a table you are forcing someone to navigate to one specific cell which does not equate to a topic or sub-topic in a document.

Just because you can doesn't mean it is good design!

Optimizing the accessibility of a data table in a Word document

There are three questions to answer before using a table in Word:

1. What is the table header for this table?
 - a. As I add rows and the table spans pages, what is the Table Header row or rows that will repeat at the top of each page?
2. What is the caption for this table? For example is the caption “Summary of sales for 2015?”
3. What is the Alt text for this table?
 - a. “Dog’s breakfast of content” is not good Alt text. What is the description of the table that you are going to provide for someone using adaptive technology that adequately describes the structure of the table?

If you can’t answer any of these questions and implement Table Header rows, a caption for the table of Alt Text for the table, the content you are working with **DOES NOT** belong in a table.

Tables are to be used for data representation and **NOT** to be used for design Layout.

Inserting a table

Use the Insert Ribbon to add a table to a document. Never use drawn tables in a Word document as they are not accessible and do not currently have the same level of table reading and navigation commands as a table that is inserted. While some adaptive technology can now recognize drawn tables, the accessibility of them is sporadic and most adaptive technology has not caught up to the ability to access drawn tables.

Having experimented with drawn tables I can also verify that they are difficult to draw and at times are like a tornado that sucks all surrounding content into them which is then hard to get out of them. They take up time, do not create uniform table structures and just because they are now sort of accessible, I would still recommend not using them. In terms of having equal access to a drawn table as we have for an inserted table, we are nowhere near a similar level of accessibility. The fact that some adaptive technology can recognize a drawn table does not mean the drawn table is “accessible.” This is a work in progress.

To insert a data table into a document:

1. Press Alt + N, T for Insert Ribbon, Table.
2. You can use the Table Gallery to choose the number of rows and columns if your table fits within the predetermined limits of the Table Gallery; or,

3. Press the letter I to open the Insert Table dialog and specify a larger number of rows and columns.

Either method will create an accessible “uniform” table.

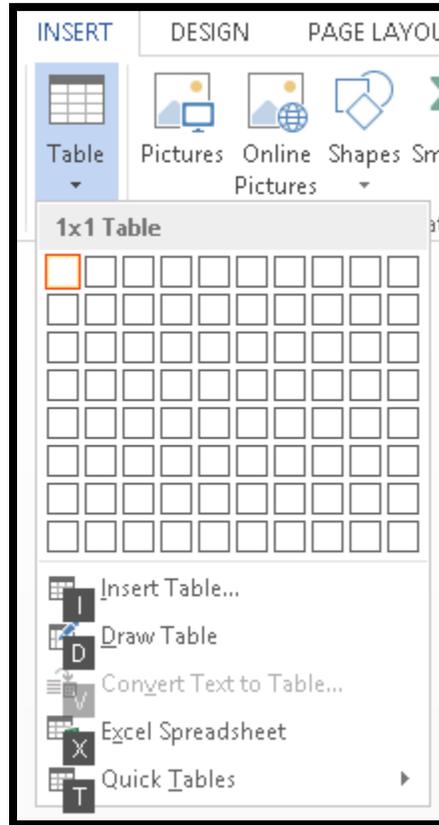


Figure 1 Insert Table Gallery from the Insert Ribbon.

If you use the Table Gallery, as you choose the number of rows and columns, you’ll see them appear in your document.

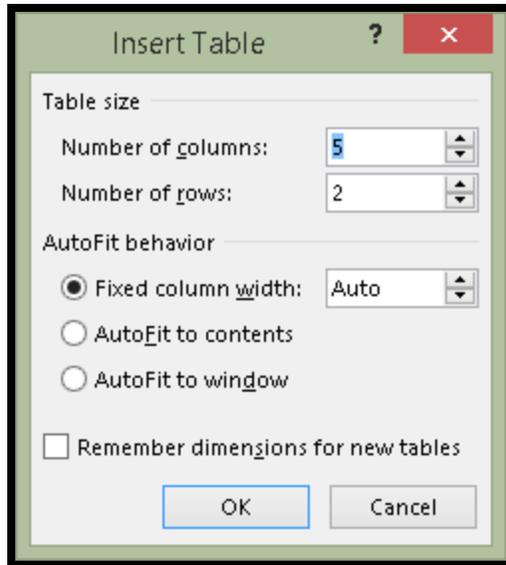


Figure 2 Insert Table dialog.

Identify the table header row

Having the Table Header Row Repeat provides two accessibility components. First, if the document is converted to tagged PDF, the Header Row Repeat designation becomes the correct TH or “Table Header” Tags in the PDF document.

The second accessibility component is that if a table spans more than one page, the information in the Table Header is repeated so that people don’t have to go back to the beginning of the table to figure out what the content relates to.

This is helpful for people with learning, cognitive and visual disabilities.

There are two ways to have the Header Row Repeat:

1. With the row or rows you want to repeat selected, press the AppKey or right mouse button and choose Table Properties. The keyboard command is R.
2. This will open the Table Properties dialog.
3. Go to the Row tab by pressing Ctrl + Page Up or Ctrl + page Down.
4. Press Alt + H to move to and check the check box to Repeat as Header row.
5. Tab to and activate the OK button by pressing Enter.

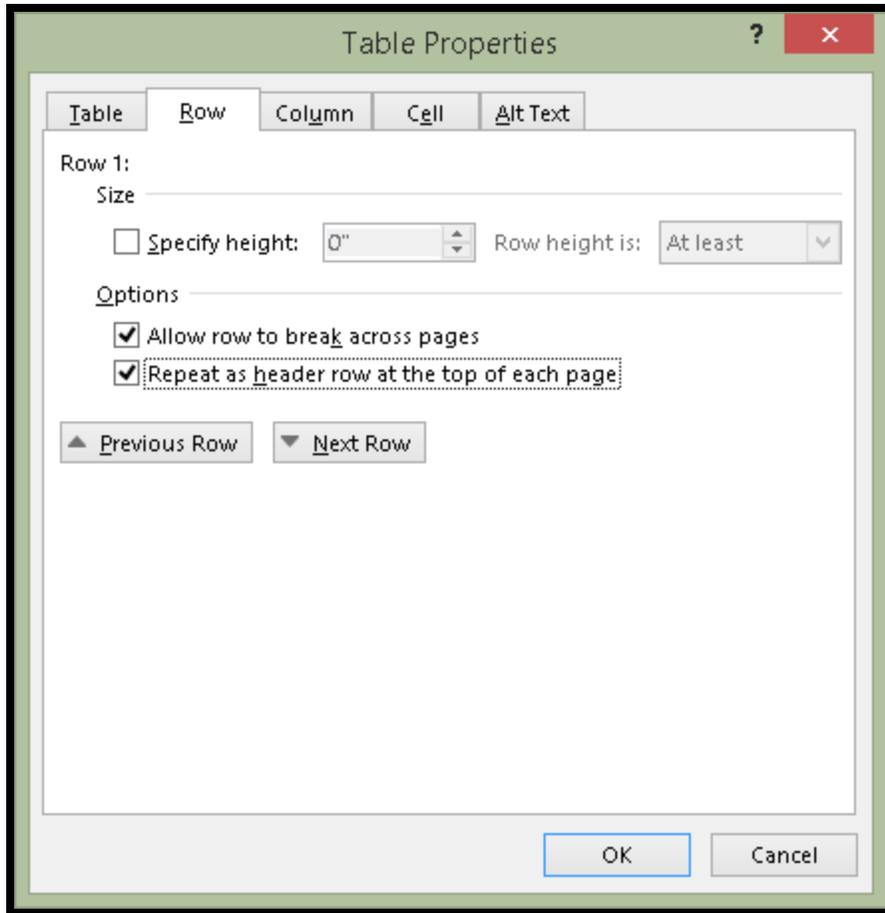


Figure 3 Table Properties dialog showing Row tab.

The second way to identify the Header Row to Repeat is from the Table Tools Ribbon. The keyboard command is Alt + J, L, J.

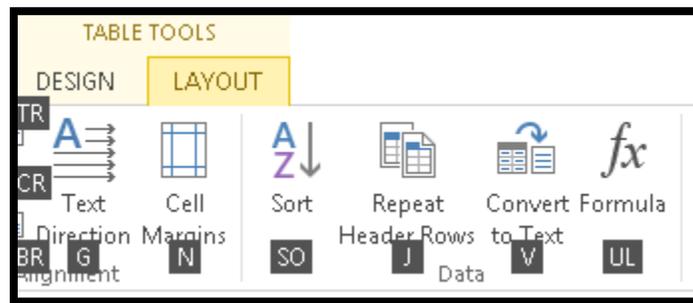


Figure 4 Identify Header Row from the Table Tools, Layout Ribbon.

The following image shows how the Repeat as Header Row will appear in a document.

Table 1 Summary of sales for first two quarters.

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Karen	1500	2250	2500	2750
Barnaby	2000	2500	2750	2750
Olivia	2000	2750	2000	2500
Fred	2000	2550	2570	2750

Salesperson	First Half of 2009		Second Half of 2009	
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Oscar	2600	3550	2550	2570
Aimee	2400	3750	2000	2550
Lynda	2500	3650	2250	2750

Figure 5 Table showing how Header Row Repeat aids in accessibility.

Do not let Rows break across pages.

As a rule, if the contents of one single cell do not fit on one page, the content should not be in a table. Even in a complex data table, there are no instances where data has to be in one cell spanning multiple pages.

To help keep document authors “honest” in this regard, we turn off the ability to allow rows to break across pages.

In terms of accessibility, even with the header rows repeating, for those with learning, cognitive or visual disabilities or those using a screen reader, breaking content in mid-paragraph or sentence while moving to another page causes readability and comprehension barriers.

To prevent rows from breaking across pages:

1. Select the entire table by pressing Alt + J, L, K, T for Table Tools, Layout Ribbon, Select, Table.
 - a. You can put Select Table on the Quick Access Toolbar if you work with data tables a lot.

2. Press the AppKey or right mouse button and then R for Table Properties.
3. Press Ctrl + Page Up or Page Down to move to the Row tab.
 - a. If you just adjusted the table header option, the Row tab should be the focus when you go back to the Table Properties dialog.
 - b. You can't choose both at the same time because the ability to identify table headers is confined to one or two rows at the beginning of the table while stopping rows to break across pages applies to the entire table.
4. Press Alt + K to uncheck the option to allow rows to break across pages.
5. Tab to and activate the OK button by pressing Enter.

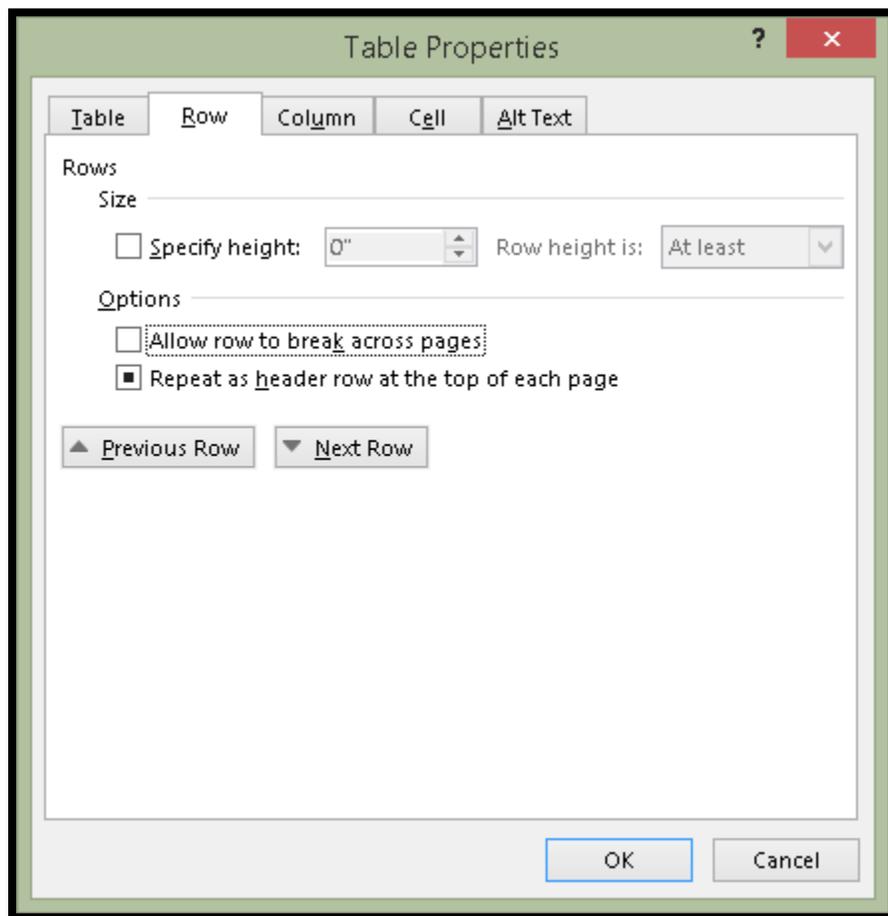


Figure 6 Table Properties dialog, Row tab and do not allow rows to break across pages.

Table rows will now not be able to break across pages.

Adding cell padding to a table

As with other file formats and the preference of a document author to have a bit of space around the text in a data table, you can do the same thing in Word.

Do not create space above and below content in a cell by pressing the Enter key! This creates blank lines in the cell and “we” have to listen to those blank, blank, blank lines!

In Word the ability to adjust the spacing around text in a table is called “Cell Margins.”

I recommend that you create a consistent looking table by selecting the entire table and adjusting the cell margins for the table rather than for individual rows.

To adjust cell margins for a data table:

1. Select the table by pressing Alt + J, L, K T for Table Tools, Layout, Select, Table.
2. Press the AppKey or right mouse button and then R for Table Properties.
3. Press Ctrl + Page Up or Page Down to move to the Cell tab.
4. Press Alt + letter O to open the Cell Options dialog.
5. Press Spacebar to uncheck the check box to make all margins equal. It has focus when the dialog opens and is checked by default.
6. DO NOT use whole numbers for this. I’ve researched the visual spacing and found that anything from .10 to .20 for the Top and Bottom spacing looks professional.
 - a. Once you are close to the .20 measure, it begins to look unprofessional so I recommend something like .10 or .15 at the most.
7. Normally I don’t adjust the left or right margins but you can do this.
 - a. Keep in mind the measure for Top and Bottom and be consistent in the measure. Don’t use whole numbers and keep the Left and Right margins around .10 to .15.
8. Tab to and activate the OK button by pressing Enter.
9. You are taken back to the Borders and Shading dialog.
10. Tab to and activate the OK button by pressing Enter.
11. Your table now has a bit of space between the text and the top and bottom gridlines or the content above or below if you choose not to use gridlines.

The following two images show the process of adding cell margins or cell padding to a table in Word.

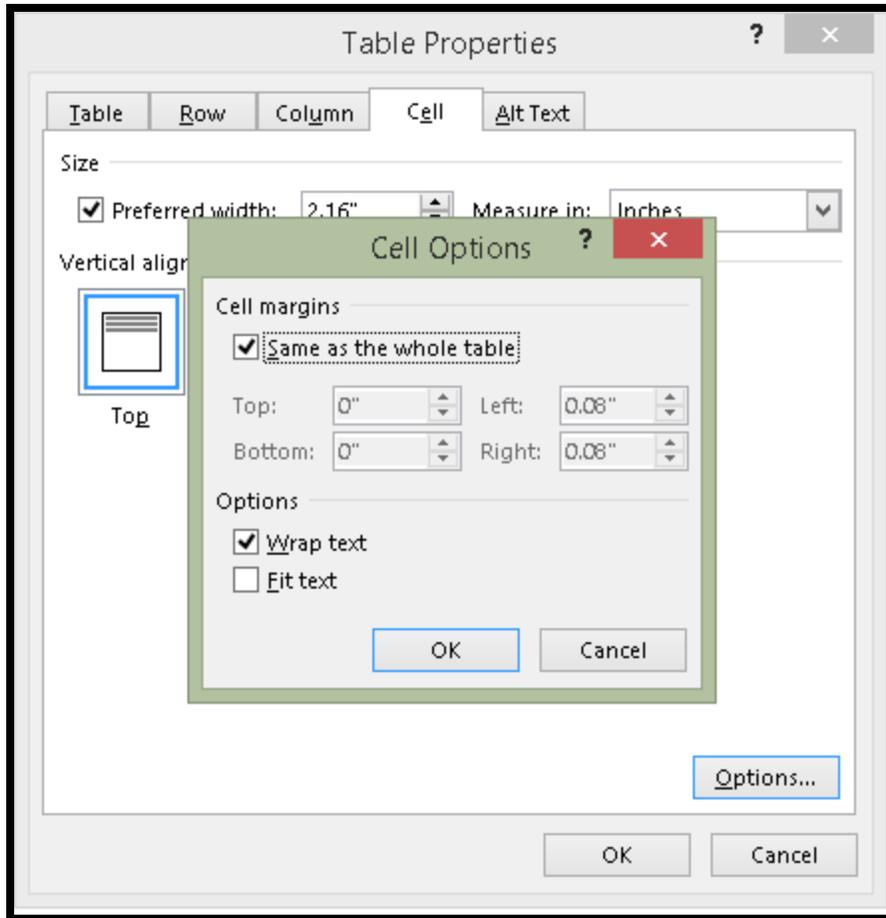


Figure 7 Table Properties dialog open with focus on cell tab and Cell Options dialog.

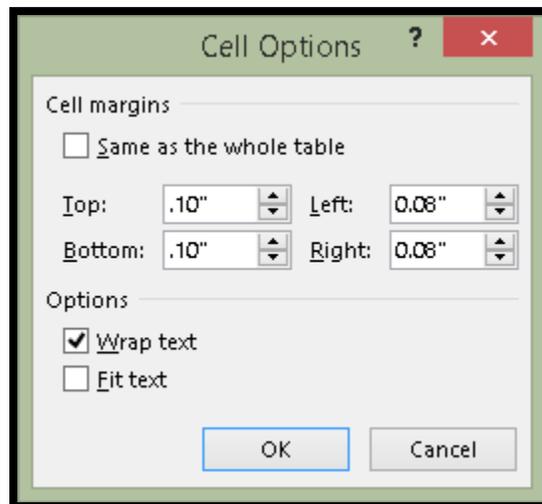


Figure 8 Cell Margins dialog showing a .10 measure of cell padding for top and bottom of a cell.

What does this look like in a table? The first image is the default when I use one of the Table Styles. I used a Table Style to show that you can make these types of modifications when using the Table Styles

Salesperson	First Quarter	Second Quarter
Barnaby	6542	8543
Olivia	5011	8361

Figure 9 Table with normal cell margins or padding.

The second image shows the table when the cell margins or cell padding has been changed to the .10 measurement.

Salesperson	First Quarter	Second Quarter
Barnaby	6542	8543
Olivia	5011	8361

Figure 10 Table with cell margins or padding increased for top and bottom.

I chose to use images to illustrate the difference when Cell Margins are adjusted because I am going to convert this document to tagged PDF so it will lose the exploratory value you would have in Word by accessing the Table Properties dialog.

Add a Caption to a table

One of the basic questions to ask when considering using a table in a Word document is what the Caption of the table will be. For example, can you give a summary of what information is contained in the table for people with learning, cognitive or visual disabilities or who are using a screen reader so that they know what to expect once they enter the Table?

You can do this for all data tables. You can't do this for tables used for design layout. It would defeat the intent of creating the inaccessible document. Taking the sample document I created, imagine starting the document with a Caption.

Table1 This document uses a table for design layout.

Title of the Document	
Item	Description
Creating Custom Styles	
Why use Custom Styles?	You can use custom styles when you need more than one H1 or Heading 1 in your document. For example, you might want one look and feel for Heading 1 for the title fo the document on the cover page and another for the Heading 1 in the main body of the document.
Will both Custom Styles show up in the TOC?	By default yes, but you can go into the Options of the TOC and choose not to have the Heading 1 used for the title of the document show up in the TOC.

Figure 11 Caption on table used for design layout

To add a Caption to a data table:

1. Select the table.
2. Press the AppKey or right mouse button for the context menu and then press C for Insert Caption.
 - a. This is slightly different from the keyboard command for adding a Caption to a figure which is N for Insert Caption.
3. Type your Caption text.
4. Press Tab to move to the Label list and choose Table.
5. Tab to the Position list and choose Above.
 - a. You always want a Caption for a table to be above the table so that anyone using adaptive technology can access what type of information is in the table they are entering.
6. Tab to and activate the OK button by pressing Enter.
7. The Caption appears above the table.



Figure 12 Insert Caption dialog showing Table Caption options.

Add Alt Text to a table

As of Word 2010 we've been able to add Alt Text or Alternative Text to a table. I hear the questions. If we have a Caption, why do we need Alt Text and if we do add a Caption do we have to add Alt Text?

Of course there is an answer that optimizes the accessibility of your documents!

Use the Caption to let people know what to expect when they enter the table. The Caption information is available to everyone.

The Alt Text should be used to describe the table in terms of columns and rows and to flag any merged or split cells. The information is primarily available to those using screen readers and Text-to-Speech tools. It is not "extra" information but it does help in determining which table reading and navigation keyboard commands someone will use to work their way through the table content.

To add Alt Text to a data table:

1. Select the table by pressing Alt + J, L, K, T for Table Tools, Layout, Select, Table.
2. Press the AppKey or right mouse button to open the context menu and then press R for Table Properties.
3. Press Ctrl + Page Up or Down until you land on the Alt text tab.
4. Press Tab to move to the Description edit area and type the Alt Text for the table.
 - a. Do not press Enter unless you want to start a new line.
5. Press Tab to the OK button and activate it by pressing Enter.

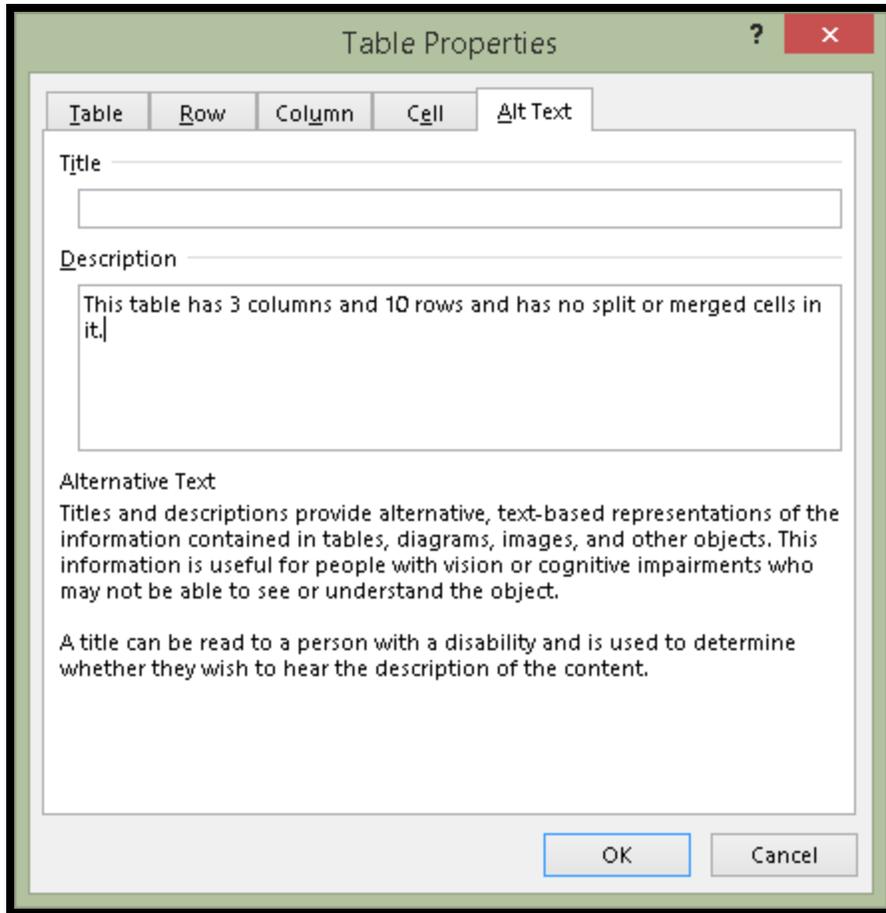


Figure 13 Table Properties dialog showing Alt text tab.

Proper use of Tab Stops

Tab, Enter and Spacebar have suffered over the past years due to the misuse of each of them. For example, I've seen documents where the Enter key has been used to create space around text instead of using the Paragraph dialog and I've seen documents where the Spacebar has been used to isolate text on lines. One document I worked on five years ago has the Enter key pressed at the end of every line for the 85 page document. This meant that every line in the report was an individual paragraph.

There are times when it is correct and proper to use a Tab.

For example, if you have a short agenda you can use Tabs to space out the information so that the times, speaker and room allocation are visually separate but easily read by someone using adaptive technology. Tables are not a good tool for displaying information such as an agenda for a meeting. However, we often look around and say "I don't know where the hammer is so what can I use instead?" In word processed documents we tend to gravitate toward tables (and Text Boxes) as our handy "hammer replacement."

The following is an example of an agenda formatted using Tabs. The instructions for doing this follow. In the attached Word document that is created using a table for design layout, the visual presentation of the keyboard commands in Appendix A have been formatted using Tabs.

9:00 -10:00	Keynote	Manitoba Room
10:00-11:00	General Sessions	Rooms Posted
11:00-12:00	Annual Meeting	Alberta Room

This is easy to read if you are using a screen reader or Text-to-Speech tool because you can use either Down Arrow to move to and read the next line, activity and room number or you can use Ctrl + Up Arrow to move to the previous time, activity and room number. You can also use the keyboard commands for the adaptive technology to read the content again without losing track of where you are.

The first step in the process is to select the text you want to adjust the Tabs for. In our example, it is the three lines of the agenda.

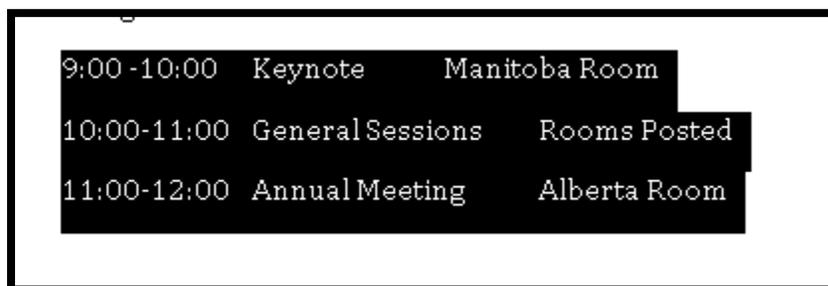


Figure 14 Text selected for creating Tabs.

The next step is to open the Paragraph dialog by pressing Alt +H, P, G for Home Ribbon, Paragraph.

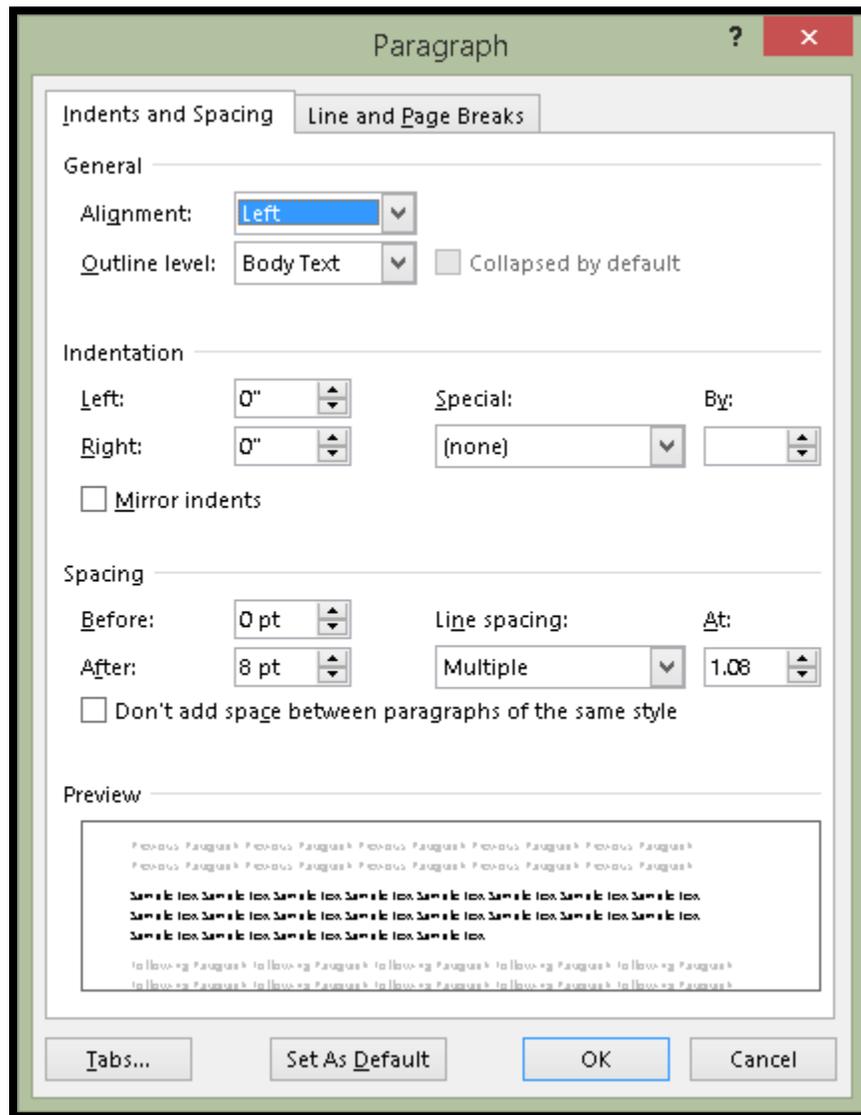


Figure 15 Paragraph dialog.

In the lower left of the Paragraph dialog is the button for Tabs. With the Paragraph dialog open, press Alt + T which will open the Tabs dialog.

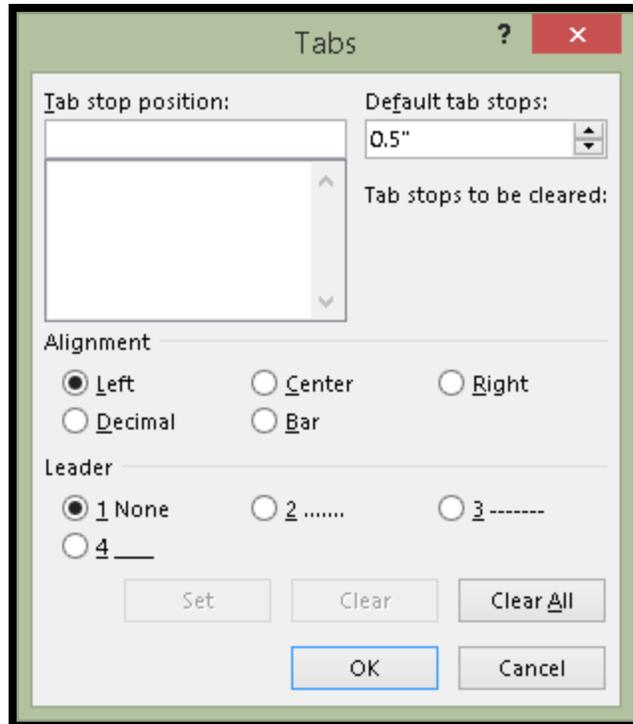


Figure 16 Tabs dialog.

Press Alt + A to Clear All existing Tab Stops for the selected text.

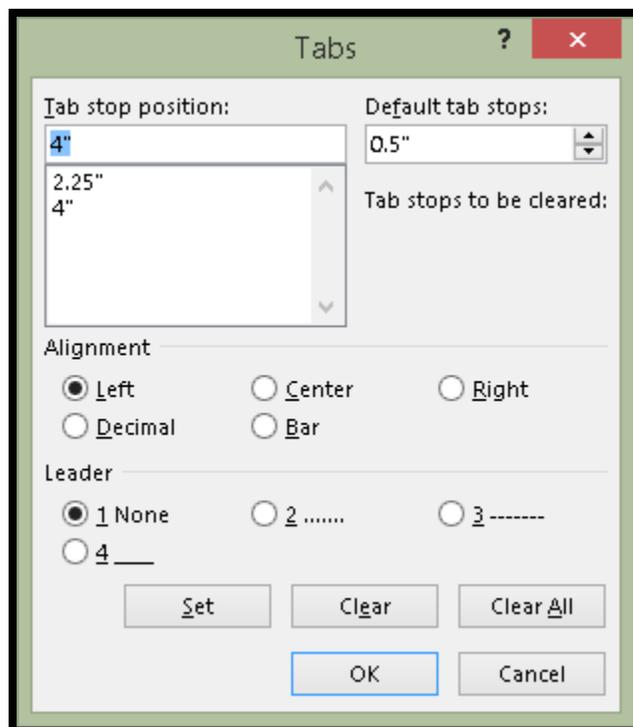


Figure 17 New Tab Stops set for selected text.

We now need to set the new Tab Stops for the selected text. I did experiment with what I thought were Tab Stops close to where I wanted the text placed and found that two Tab Stops, one at 2.25 inches from the margin and one at 4 inches from the margin worked best.

Once you clear all Tab Stops your focus is in the area where you can enter new Tab Stop positions.

Type 2.5 and press Alt + S to Set that Tab Stop.

The number you just typed is still in the edit area but it is also just under this area which confirms that it is set.

Type 4 over top of the existing number in the edit area and press Alt + S to Set the Tab Stop.

Press Tab to move to the OK button and activate it by pressing Enter.

You are returned to the Paragraph dialog where you can press Tab to move to the OK button and activate it by pressing Enter.

You've now positioned the agenda items in a consistent manner both horizontally and vertically.

An agenda like the one in this example is a simple piece of content to use Tabs with. If the agenda is longer or more specific in terms of identifying each session, a short description and room number along with the time, then best practice shows us that the content is best formatted with headings and paragraphs.

For example, consider the following:

Monday (Heading 1)

Keynote Speaker (Heading 2)

Time (Paragraph)

Location (Paragraph)

Short description and/or bio (Paragraph)

General Sessions (Heading 2)

Time (Paragraph)

Name of first Session (Heading 3))

Room (Paragraph)

Short Description (Paragraph)

Name of second Session (Heading 3))

Room (Paragraph)

Short Description (Paragraph)

...and so forth.

This makes it easy to find the day you want, the session you want and then read the additional information provided. A table is not appropriate for this type of a short summary of information.

Paragraph Styles to replace single cell tables

The other misuse of tables that we often see in documents is a single cell table used to isolate important information on a page.

When someone using adaptive technology comes across this in a document they hear that there is a table with one column and one row and then they enter the table and are told they are in cell A1. They then have to switch to the table reading and navigation commands which are designed to read data tables.

The previous paragraph is formatted with a Paragraph style not a single cell table. Could you tell just by looking at it?

The other problem with using single cell tables to call out content is that it takes some tweaking to be able to read word by word or line by line or sentence by sentence in a table cell if you are using adaptive technology. If there is a list in the table cell, access to that granular information becomes equally challenging. It takes time and is a barrier to productivity and efficiency in accessing content.

The reason for this is simply that tables were designed to be used to represent data, not general document content.

So how can we create the same effect we visually see when we use a single cell table (or Text Box) but in a completely accessible manner?

The first step is to either create a new style or modify an existing one. I usually modify the “Quote” or “Intense Quote” style because they are already there, I don’t find that style particularly accessible and it is easy to modify a style.

To modify the Intense Quote style:

1. Select a paragraph of text.
2. Apply the Intense Quote style to it by:
 - a. Accessing the Apply Styles Pane you put on the Quick Access Toolbar and typing in Intense Quote and pressing Enter.

- b. Pressing Ctrl + Shift + S to open the Apply Styles Pane, type in the words Intense Quote and press Enter.
- c. Click on the Intense Quote style in the Styles Gallery on the Home Ribbon.
- d. Open the Styles Pane by pressing Alt + H, F, Y and clicking on the Intense Quote style.

By doing this first, you see the style you've applied. You could locate the style in the Styles Gallery and right click on it, then choose Modify; or, right click on the Intense Quote style in the Styles Pane and choose modify.

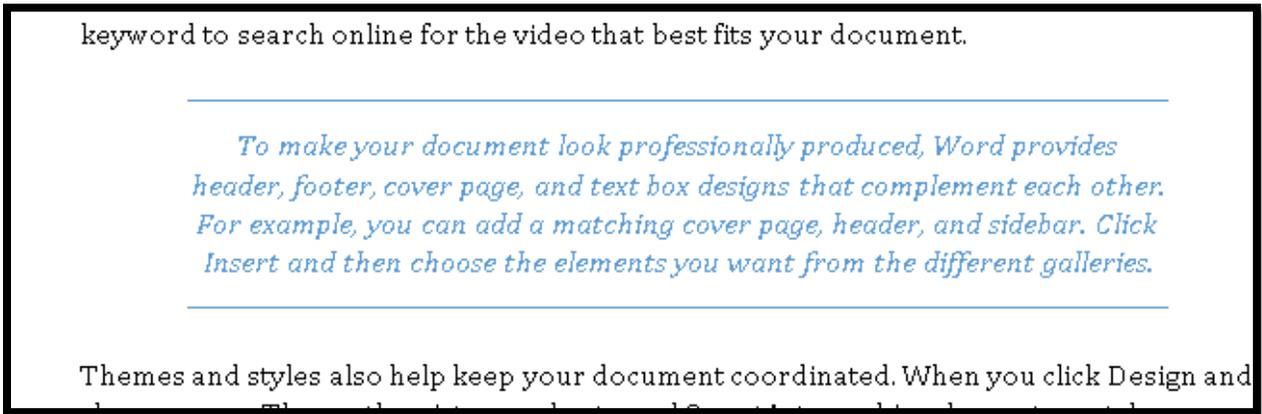


Figure 18 Intense Quote applied to a paragraph.

For those using the keyboard, press Ctrl + Shift + S to open the Apply Styles Pane and then press Tab to move to the Modify button and press Enter to open the Modify Style dialog.

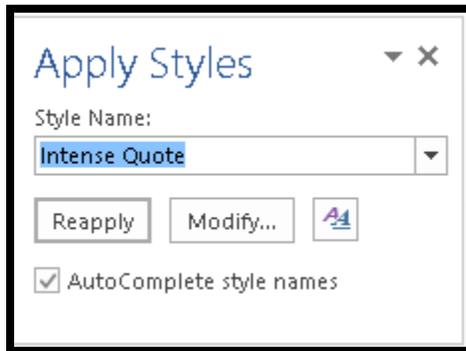


Figure 19 Apply Styles Pane showing Intense Quote Style applied to text.

Note: Once you've finished with the Apply Styles Pane, press Ctrl + Shift + S to put focus on it again and then press Ctrl + Spacebar, then C to open the context menu, and activate Close.

The following image shows the context menu for the Intense Quote Style on the Styles Pane.

Note: Pressing Alt + H, F, Y is a toggle so pressing it with focus in your document will close the Styles Pane if it is open.

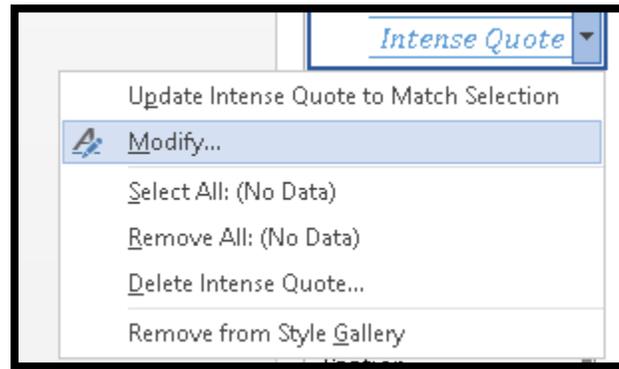


Figure 20 Modify style option from the context menu in the Styles Pane for the Intense Quote style.

If you want to create a new style, there is a New Style button in the Apply Styles pane and the Styles Pane. In both tools you would Tab to it.

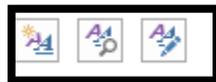


Figure 21 New Style button in lower left of the Styles Pane.

The New Styles button is at the bottom of the Styles Pane and is the button on the left of the three buttons you'll come across.

When the Modify Style dialog opens, your focus is in the area where you can identify the name of the style or, if you chose New Style, you can give it a meaningful name. By default new styles are named Style 1, Style 2, Style 3 and so forth.

We are going to leave the name as it is.

In the sample document with Paragraph styles in it, I've created a new style called "Intense Quote 2." This lets me refer to a style I know and know that I've modified the style for yet a different look and feel.

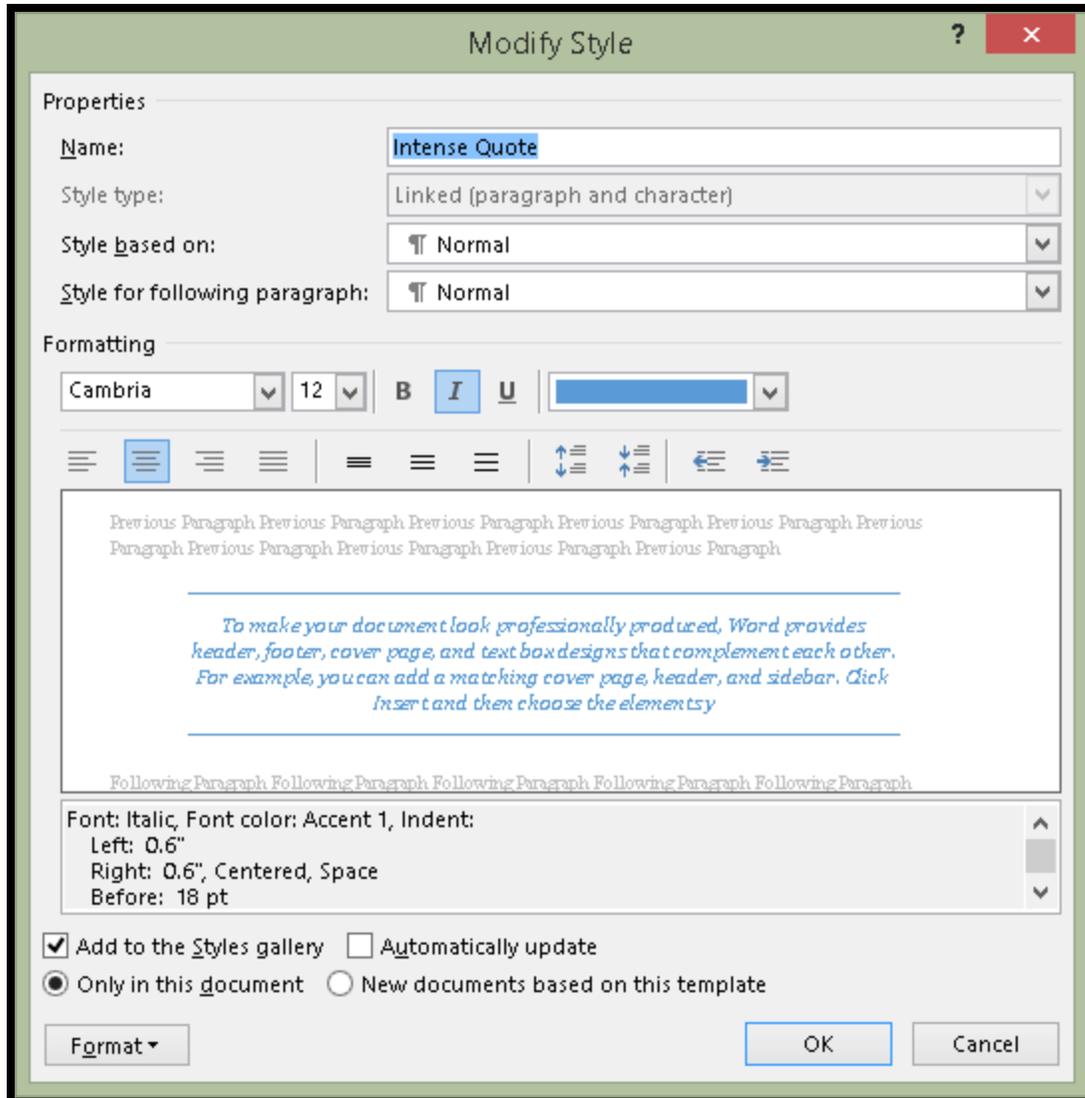


Figure 22 Modify dialog for Intense Quote.

The formatting we are going to change is pretty much everything but the font style and size although you can do that. I recommend not using Bold, Italic or Underline. These are what we call hard coded formats that, if someone has their own accessible Style Set, will not allow them to fully use their own preferences for fonts, styles and font sizes.

If you want to make something “bold” use the Strong style. If you want to make something Italic, use the Emphasis Style. Both can be modified by the person reading the document if they find these styles difficult to read.

Let’s get started!

The first thing we want to do is check the contrast of the text. The default colour looks a bit light and not a good contrast plus it is all italics which will make it difficult for someone with a learning, cognitive or visual disability to read. Emphasized text is OK in small doses

but not for entire paragraphs. I'm going to change the font colour to Automatic or black and remove the Italics.

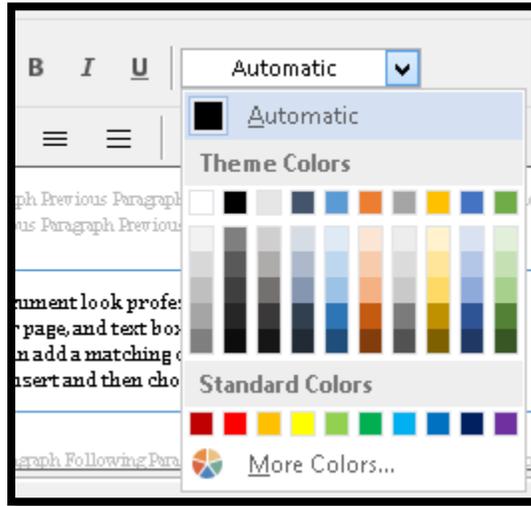


Figure 23 Modify Style dialog showing Italics removed and font colour changed to Automatic.

I'm going to keep the alignment as Centred.

For all of the rest of the changes to the Intense Quote, we'll be working with the Format button in the lower left of the Modify or New Style dialogs. Both dialogs have the same options just different names for the dialogs because the dialogs have different functions.

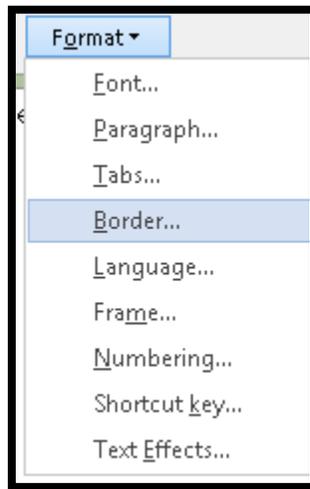


Figure 24 Options under the Format button in the Modify or New Styles dialog.

We are going to start by working with the border around the text.

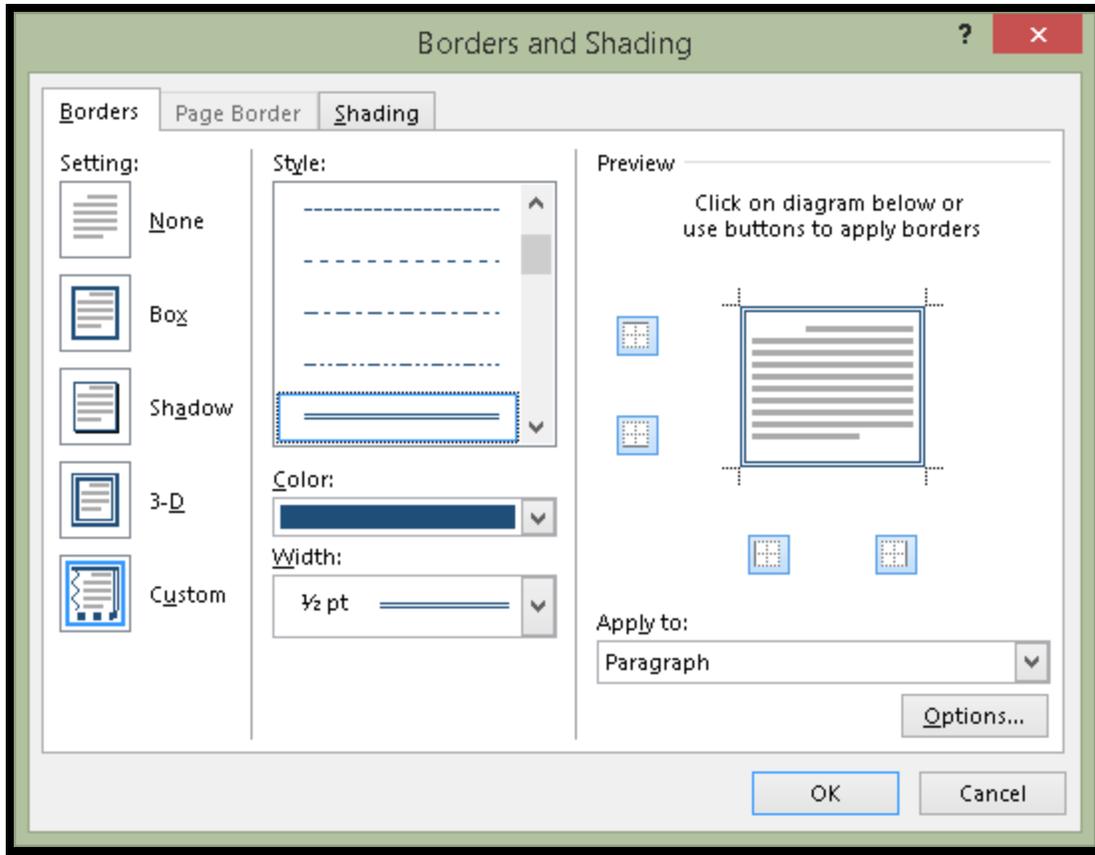


Figure 25 Borders and Shading dialog.

If you are using the keyboard, press Alt + letter O in the Modify or New Style dialog to activate the Format button. Then press B for Border. The Borders and Shading dialog opens.

In this example the Box border should be selected but I like to verify this by selecting it again. There are other types of borders and sometimes it is difficult to see which one is selected.

If you are using the keyboard, your focus is on the list of border types when the Borders and Shading dialog opens. If you are using a screen reader, you should hear which border is selected. The choices are None, Box, Shadow, 3D and Custom. Custom lets you put a border around content such as cupcakes, flowers, and other image based borders.

If you are using the keyboard, once you move to a border type, it is selected and you can then Tab to the next setting which is the style of the border.

I then pressed Tab to move to the Styles list and chose the 3 line style.

Press Tab again to adjust the colour of the border. If you are using the keyboard, press Alt + Down Arrow to open the colour choices and then use the Left, Right, Up and Down Arrows to choose a colour.

If you press Tab again you'll land on the list where you can choose the thickness of the line. The thickness is determined in point size. The higher the point size, the thicker the line.

From this point you can either Tab to and press Enter to apply a border on each side of the paragraph or not. Enter is a toggle on these buttons so pressing it once might apply the border and pressing it again might remove it. When you activate the Box button (or any of the others) the border is immediately applied to all four sides of the text. This should give those of you using screen readers a reference point. This is one of those things you can do using a screen reader but I notice JAWS doesn't tell me whether the border is on or off.

Once we have the border applied, we need to make sure that it is applied to the Paragraph we've selected and not the text...which looks horrible when applied in the context of a Paragraph.

To do this we Tab to the "Apply To" list or we can press Alt + L. We are just making sure that it says Paragraph.

The last thing we want to do is to add some spacing between the text and the border to make it stand out.

To adjust the spacing between the text and the border:

1. While on the Border page in the Borders and Shading dialog press Alt + letter O to move to and activate the Options button.
2. The Borders and Shading Options dialog opens and your focus is in the edit area to adjust the Top spacing.
3. We are going to make all of the spacing for Top, Bottom, Left and right 14 point.
4. Once this is done, Tab to and activate the OK button by pressing Enter.
5. You are taken back to the Borders and Shading dialog, Borders tab.
6. Tab to and activate the OK button by pressing Enter.
7. You are taken back to the Modify Styles dialog
 - a. As you make the changes to the border and spacing of the selected text, you are able to see the preview of what this will look like in each of the dialogs.
8. You can now choose to modify the style for this document only or for all documents based on this template.
 - a. To make your choice, press Alt + D which moves you to the option for this document only. These are radio buttons so pressing the down Arrow will move to and check the option to have this change apply to new documents based on this template.

9. Tab to and activate the OK button by pressing Enter.

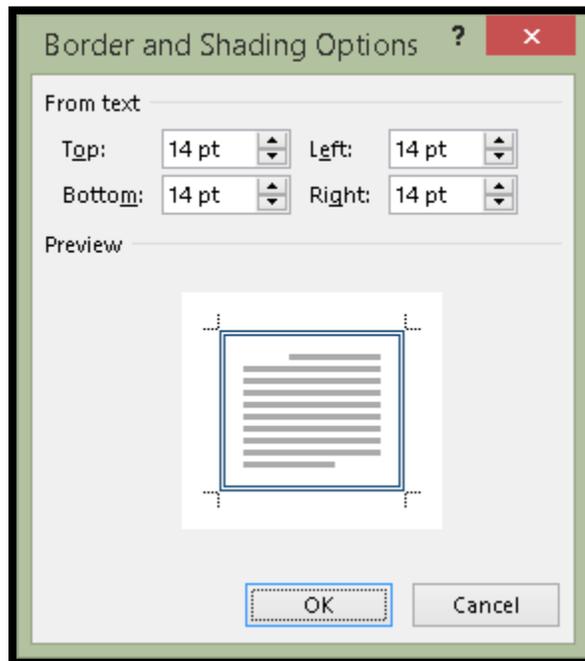


Figure 26 Borders and Shading Options dialog showing new spacing.

You now have a Paragraph Style that provides the Emphasis of content you want, does not have to be confined to “Inline” and is completely accessible. Additionally, when you need to call out content again, you don’t have to guess at the formatting of either a single cell table or a text box.

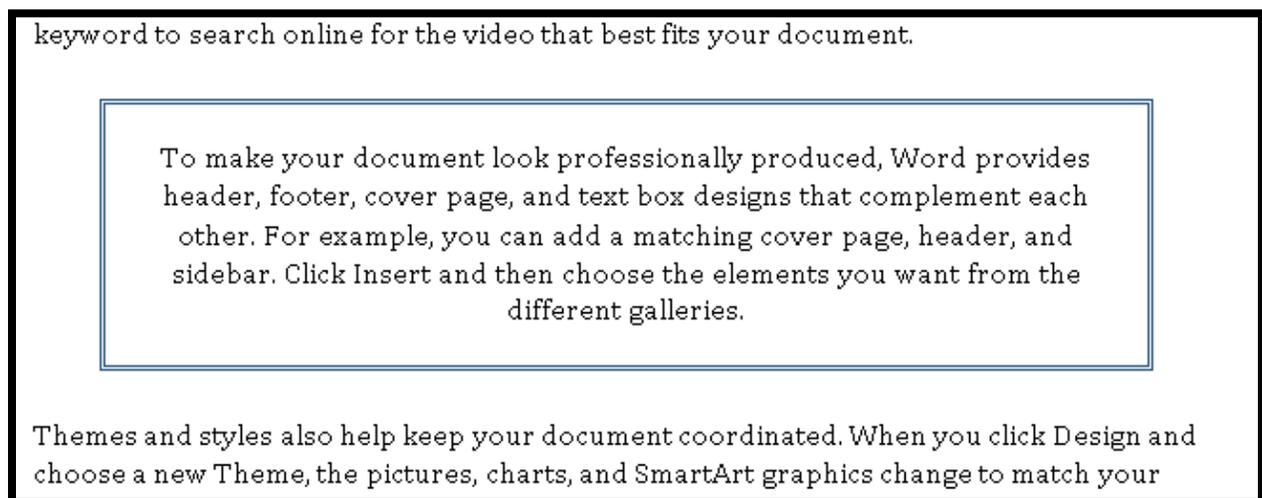


Figure 27 Text with the formatting modifications.

There are other formatting effects you can apply to a Paragraph Style including shading and shadow effects. Be careful not to over format!

Just to show what you can and shouldn't do with paragraph border formatting, I've created an Intense Quote 2 in the attached sample file.

It has a shadow effect, an olive coloured rope border design (that does not convert gracefully to tagged PDF), and light orange shading as a background to the text.

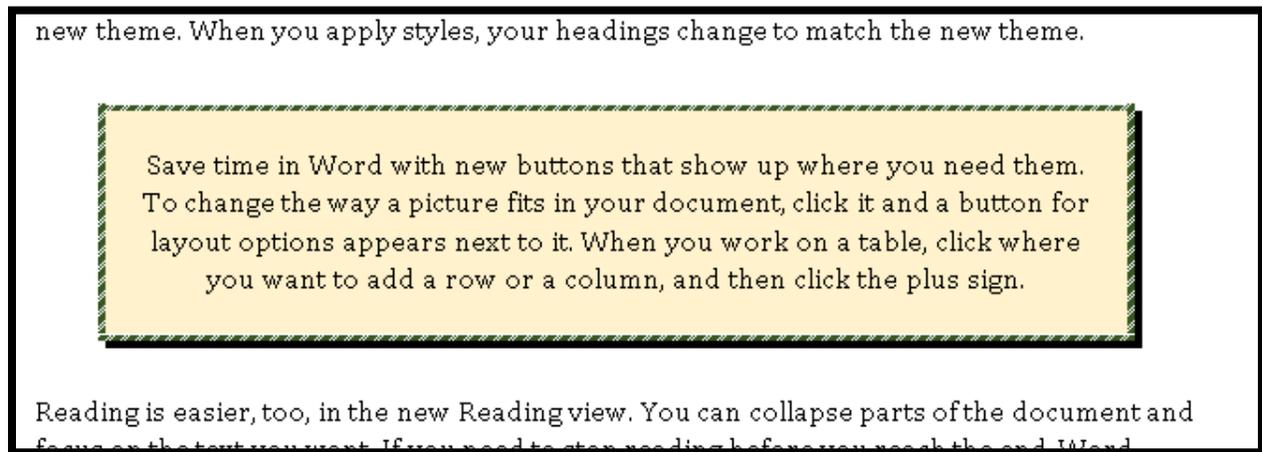


Figure 28 Sample of an over formatted paragraph.

Indenting a paragraph from the left and right margins

The style we modified has the text centred. If we want our text left aligned but we want the text indented from the left and right margins, how do we do this?

This can be done to individual paragraphs but of course it is always better done using a Paragraph Style.

1. While in the Modify Style or New Style dialog, press Alt + letter O and then P for Paragraph.
2. The Paragraph dialog opens.
3. Your focus is in the outline definition for the paragraph. Leave this as it is.
4. Press Shift + Tab to move to the Alignment list and choose Left.
5. Press Enter.
6. Press Alt + L to move to the Left Indent list and type .75 or $\frac{3}{4}$ of an inch from the margin.
7. Press Tab to the Right indent list and type .75 so that the indents are equal from the left and right margins.
8. Tab to and activate the OK button by pressing Enter.
9. Choose whether to apply this to this document only or to all documents based on this template.

10. Tab to and activate the OK button by pressing Enter.

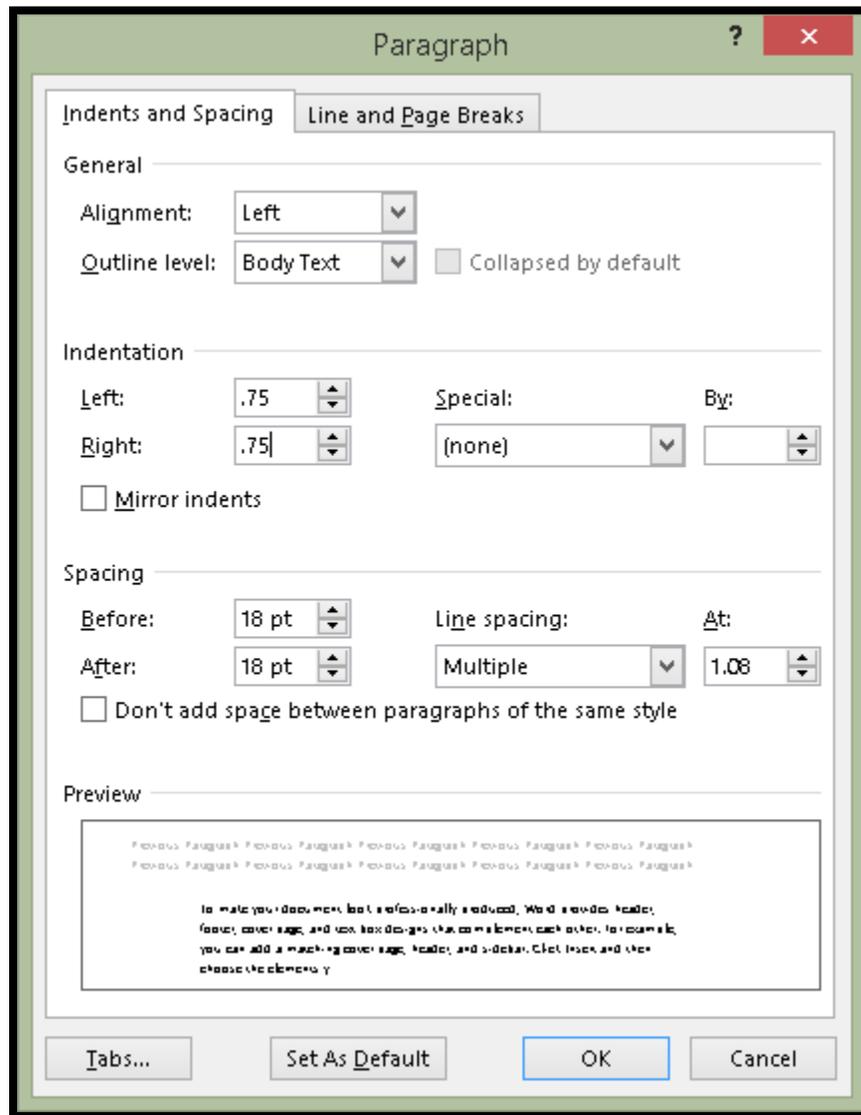


Figure 29 Paragraph dialog showing the left/right indent of .75 inches.

I previously mentioned that you should use the Strong and Emphasis styles in paragraph formatting instead of the Bold and Italic buttons. The following illustrates how I use the Strong style to further call out important concepts in my books.

I add the word “Note” before the paragraph followed by a colon and then make both of them Strong instead of Bold. This way, if someone who has their own Style Set swaps out my styles for ones they prefer, everything adjusts to their preferences. There is no hard coding or inflexible formatting of the document.

This example is also in the attachments to this PDF document.

keyword to search online for the video that best fits your document.

Note: To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar. Click Insert and then choose the elements you want from the different galleries.

Figure 30 Example of the Strong style applied to beginning text of a bordered paragraph.

Columns

One of the other reasons tables are used in documents, especially Word documents, is to format text into columns. This is also bad design and a barrier to accessibility for those using adaptive technology.

To format content into Columns:

1. Select the content you want to be in columns.
 - a. We do this because Word will create Section Breaks around the content in columns so that the columns don't spill over to content we do not want in columns.
2. Press Alt + P, J and then choose 2 columns (for our example).
3. A Section Break is inserted above and below the text you selected and the text within those Section Breaks is formatted into columns.

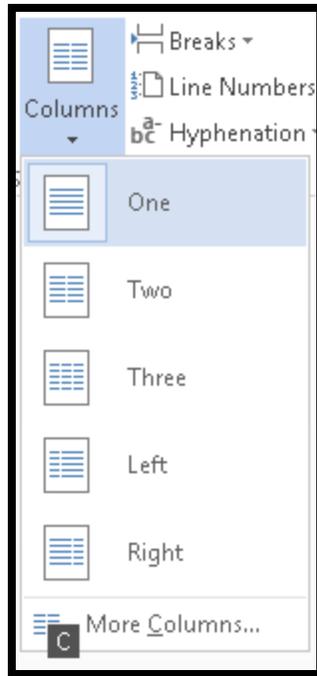


Figure 31 Column Gallery from the Page Layout Ribbon.

The choices from the Columns Gallery are Single Column which is how text appears normally in a document, Two Columns, Three Columns both of which will give you “newspaper columns” and the options for Left or Right Columns which are Parallel Columns. We’ll cover Parallel Columns in this booklet. There is also the option to open the Columns dialog by choosing “More Columns” which we’ll also do.

In looking at the readability of content, you want to make sure that text in columns is left aligned not fully justified and you want to avoid using more than 3 columns for text.

First, why left align the text? Fully justified text is a legacy of print-only documents and is all but deprecated in digital content. If you’ve looked at text and your eyes see rivers of white, look to the right edge of the text and odds are that the text is fully justified. Full justification forces text to the width of the column or width of the page. It does not allow text to flow naturally. We can see a bit of this happening in the text in the following image. Look at line 2 of the text and you’ll see some odd spacing between words. This text is fully justified. The text is in a column. Large white spaces between words are an accessibility barrier for those with learning, cognitive or visual disabilities because of the spacing between words. The natural reading flow is interrupted or disconnected.

Reading is easier, too, in the new Reading view. You can collapse parts of the document and focus

Figure 32 Text illustrating full justification of text.

Secondly, why limit the number of columns on a page or for text to three?

The following image shows text formatted into four columns. Note that there isn't a lot of text in a column. Someone using screen magnification may get lost reading across a line and inadvertently end up in a different column. Someone with a learning or cognitive disability may not have enough of the text in a column to understand what they are reading.

Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that	best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching	cover page, header, and sidebar. Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated.	When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme.
---	---	---	---

Figure 33 Text in a document formatted in four columns.

People who use adaptive technology such as screen readers and Text-to-Speech tools can use their normal reading keyboard commands to move around columns. If text is formatted to look like columns but is in a table, they have to use table reading and navigation commands. Since Headings cannot be used in tables, any text where the topic changes or text that is formatted as Parallel Columns cannot have Headings or navigational points.

I hear the next question. So how do we do this using columns?

Word has both Section Breaks and Column Breaks and by using both of them, you can create a visually interesting and completely accessible document with formatting such as the example in the following image. I've also attached a Column Sample document to this one for closer examination.

Parallel Columns

Introduction

On the Insert tab, the galleries include items that are designed to coordinate with the overall look of your document. You can use these galleries to insert tables, headers, footers, lists, cover pages, and other document building blocks. When you create pictures, charts, or diagrams, they also coordinate with your current document look. You can easily change the formatting of selected text in the document text by choosing a look for the selected text from the Quick Styles gallery on the Home tab. You can also format text directly by using the other controls on the Home tab.

Most controls offer a choice of using the look from the current theme or using a format that you specify directly. To change the overall look of your document, choose new Theme elements on the Page Layout tab. To change the looks available in the Quick Style gallery, use the Change Current Quick Style Set command. Both the Themes gallery and the Quick Styles gallery provide reset commands so that you can always restore the look of your document to the original contained in your current template. On the Insert tab, the galleries include items that are designed to coordinate with the overall look of your document.

You can use these galleries to insert tables, headers, footers, lists, cover pages, and other document building blocks.

When you create pictures, charts, or diagrams, they also coordinate with your current document look. To change the overall look of your document, choose new Theme elements on the Page Layout tab. To change the looks available in the Quick Style gallery, use the Change Current Quick Style Set command. Both the Themes gallery and the Quick Styles gallery provide reset commands so that you can always restore the look of your document to the original contained in your current template. On the Insert tab, the galleries include items that are designed to coordinate with the overall look of your document. You can use these galleries to insert tables, headers, footers, lists, cover pages, and other document building blocks.

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Figure 34 Document with Parallel Columns, a Heading, an accessible sidebar and single column text.

Newspaper Columns

Newspaper columns are typically balanced or have an equal amount of text in each column. Our example has two columns with a horizontal line between the columns to help identify the boundaries of each column.

To create the two columns with the horizontal line between them, we are going to use the Columns dialog:

1. Select the text you want to be in columns.
2. Press Alt + P, J, C for the Page Layout Ribbon, Columns, More Columns.
3. The Columns dialog opens.
4. Choose 2 columns by pressing the Up Arrow. By default your focus is in the list where you can adjust the number of columns. If you are mouse dependent you can also click on the two columns button just above the default focus.
 - a. If you look at the middle left of the dialog you can see that Word automatically calculates the gutter or white space between the columns. Leave this as it is because Word usually does a good job of these calculations.
5. When you choose more than one column, the check box to make the columns equal is automatically checked and we are going to leave that as it is. We want the columns to be balanced.
6. We need to add the horizontal line between columns.
7. Press Alt + H to move to and check the check box for “line Horizontal.”
 - a. You will be able to see the way the columns will look in the small preview area (not accessible if you are using a screen reader).
 - b. This keyboard command is a toggle so pressing it again will uncheck this option.
8. Tab to and activate the OK button by pressing Enter.

The text you selected is now in balanced newspaper columns with a horizontal line between them.

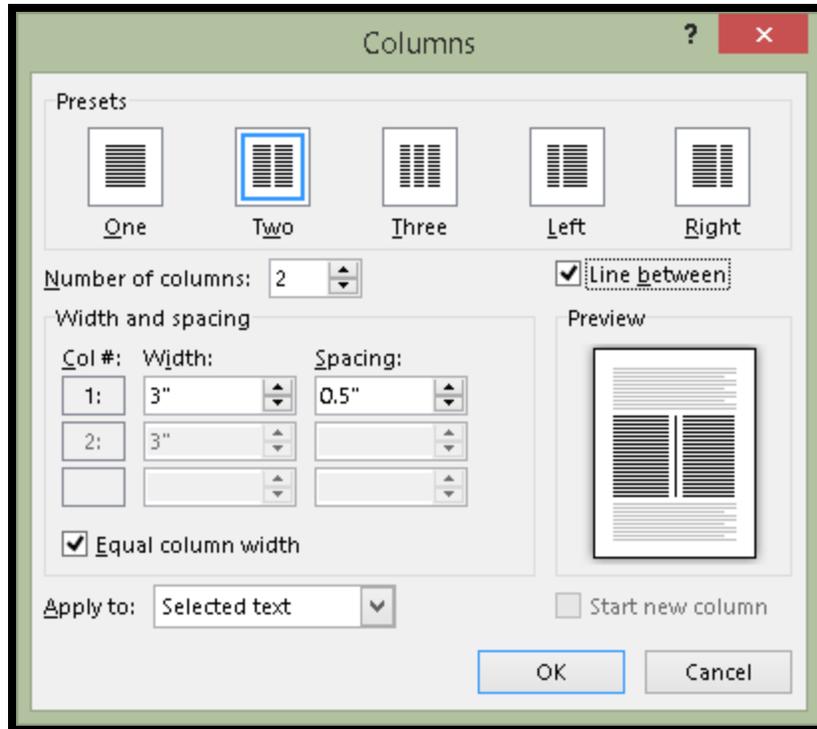


Figure 35 Columns dialog showing two columns with horizontal line between them.

The text I selected for the sample has an odd number of lines in it so Word did the best it could do with what I gave it. In column 2 there is one blank line after the last line of text, but this is considered balanced.

Newspaper Columns	
<p>Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar.</p>	<p>Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them.</p>

Figure 36 Newspaper columns with a horizontal line between them.

Parallel Columns

Parallel Columns are columns where one column is smaller than the other. Typically we find this in textbooks where there is a heading to the left, text to the right or text to the right and a sidebar to the left.

The following is how text would look if we just applied Parallel Columns to it.

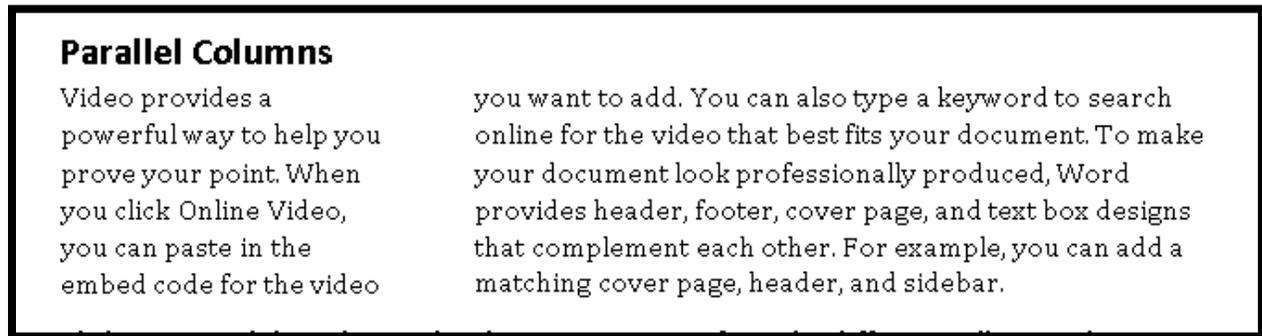


Figure 37 Image of Parallel Columns applied to text.

Let's take a look at how this will look and work if we add Headings and a "sidebar" to the text.

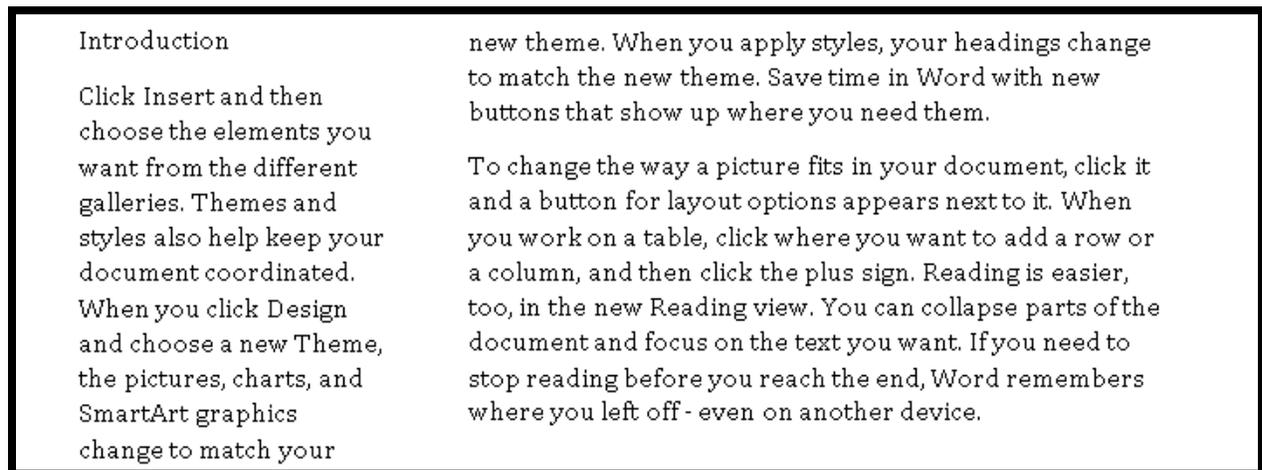


Figure 38 Initial formatting of text into Parallel Columns.

Position your cursor just after the letter N in Introduction (using my example Introduction is going to be a Heading).

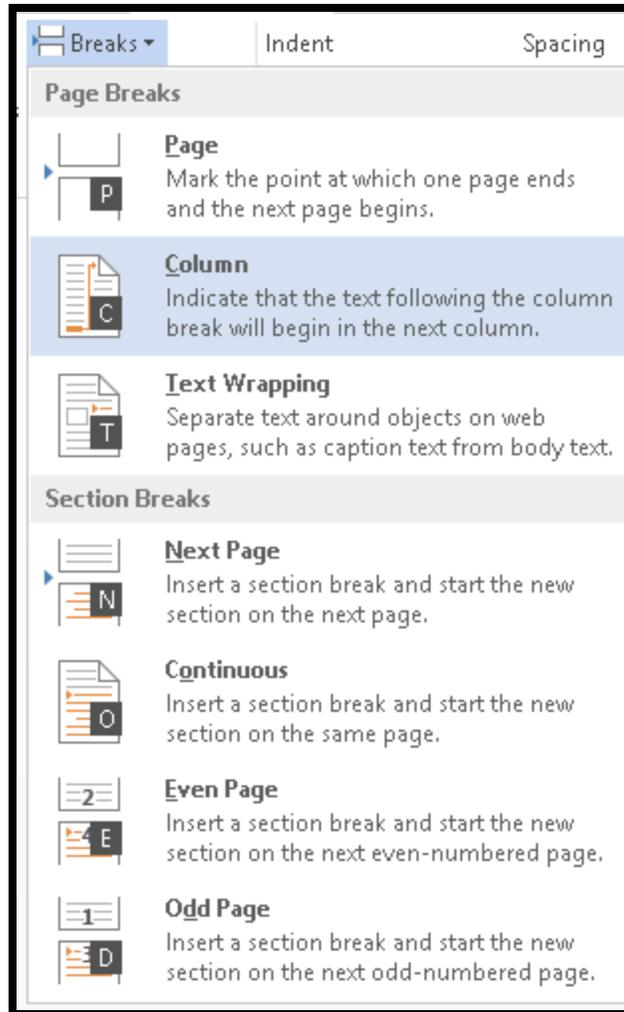


Figure 39 Page Layout, Breaks Gallery showing Column Break selected.

Press Alt + P, B, C for Page Layout, Break, Column. The text after the word Introduction will be put into the second column/to the right of the word Introduction.

Notice that we now also have a blank line at the top of column 2.

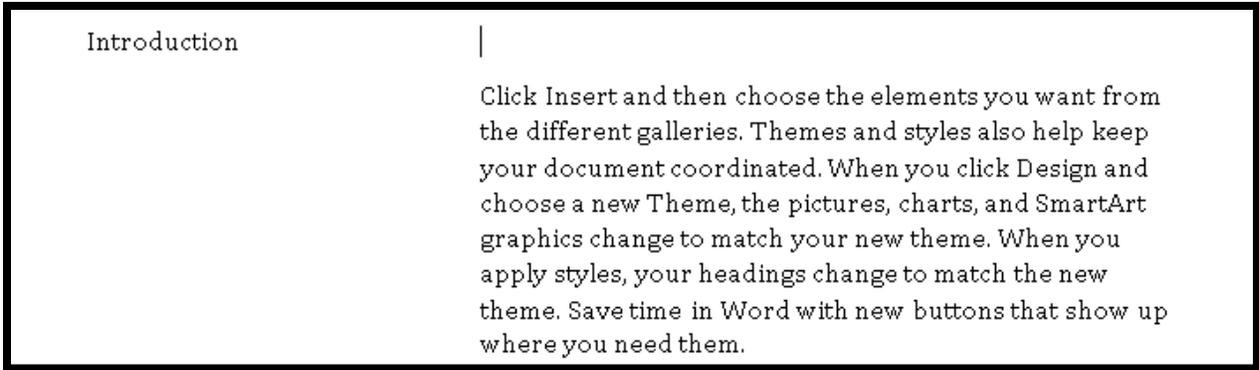


Figure 40 Parallel Columns showing blank line at the top of second column.

Press the Delete key to remove that blank line and the text will line up with the word Introduction.

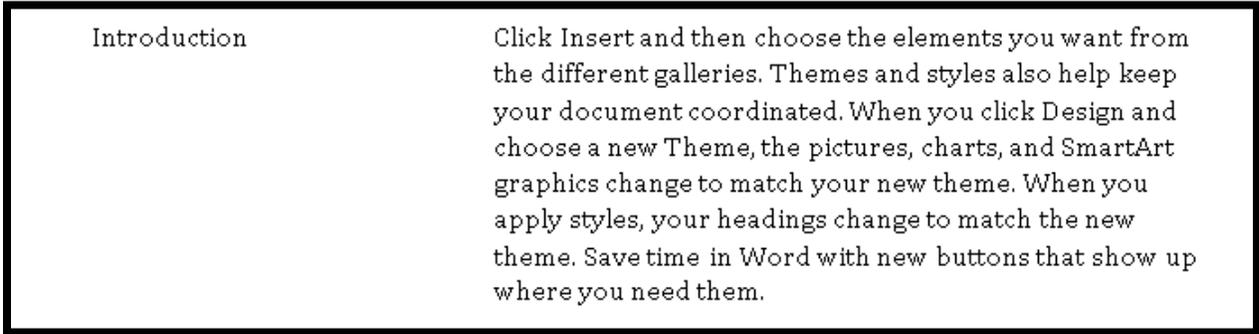


Figure 41 Parallel Columns with Column Break in place.

Select all of the letters in the word Introduction except the N.

Press Ctrl + Alt + 1 for a Heading 1.

Move the cursor to just after the letter o.

Type the letter n and then Delete the existing letter n that is not formatted as a Heading.

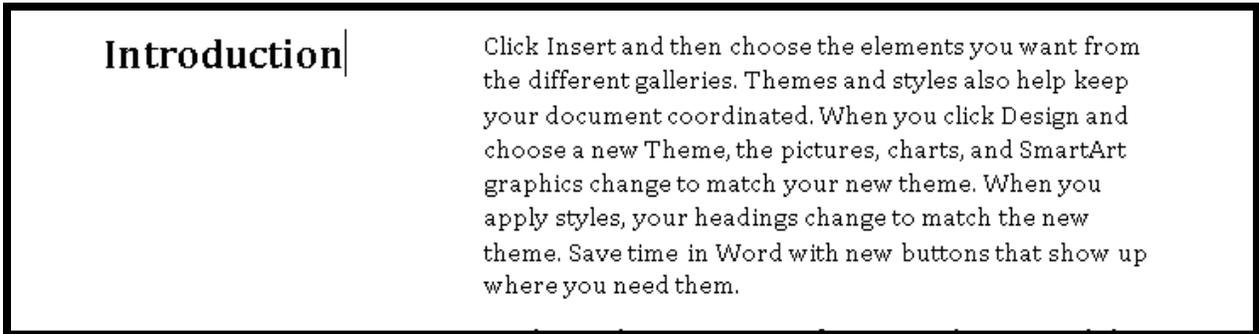


Figure 42 Finished Parallel Columns.

The way this is going to be read by a screen reader and Text-to-Speech tool is by reading the Heading Introduction followed by the content in column 2 until a Section Break is reached and “new instructions” about the formatting and structure of the content are given.

We can visually see the logical reading order by going to Draft View of the document. Press Alt + W, E to do this. When you are finished examining Draft View, press Alt + W, P for Print Layout View.



Figure 43 Draft View of the document showing both the Section and Column Break.

Use a Paragraph style to show a sidebar

Now we will take it to the next step by using a Style to provide an accessible Sidebar.

First I separated the sentence I want to put in the sidebar.

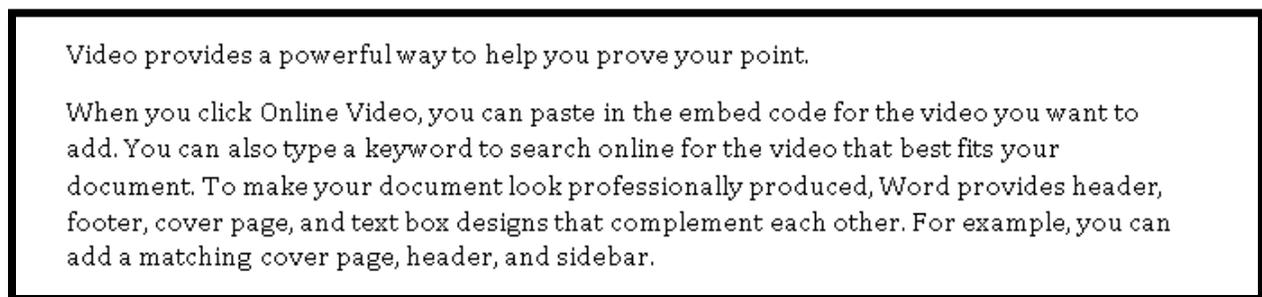


Figure 44 Text with sentence to be in sidebar isolated from other text.

Then I use a paragraph style I have modified, for me it is usually the “Quote” or “Intense Quote” style that is in the Normal document template. I tend to modify inherent styles I don’t use or are not accessible or readable in their current format and make them more accessible and usable for my documents. This means I don’t have a lot of extra styles in the Styles Pane or my document.

In this case I modified the Intense Quote style to have a border around it and some space between the text and the border.

I select the text that I want in a “sidebar” and apply the Quote style using the Apply Styles Pane that I put in the Quick Access Toolbar. I can also open the Styles Pane using Alt + H, F, Y and apply the style that way.

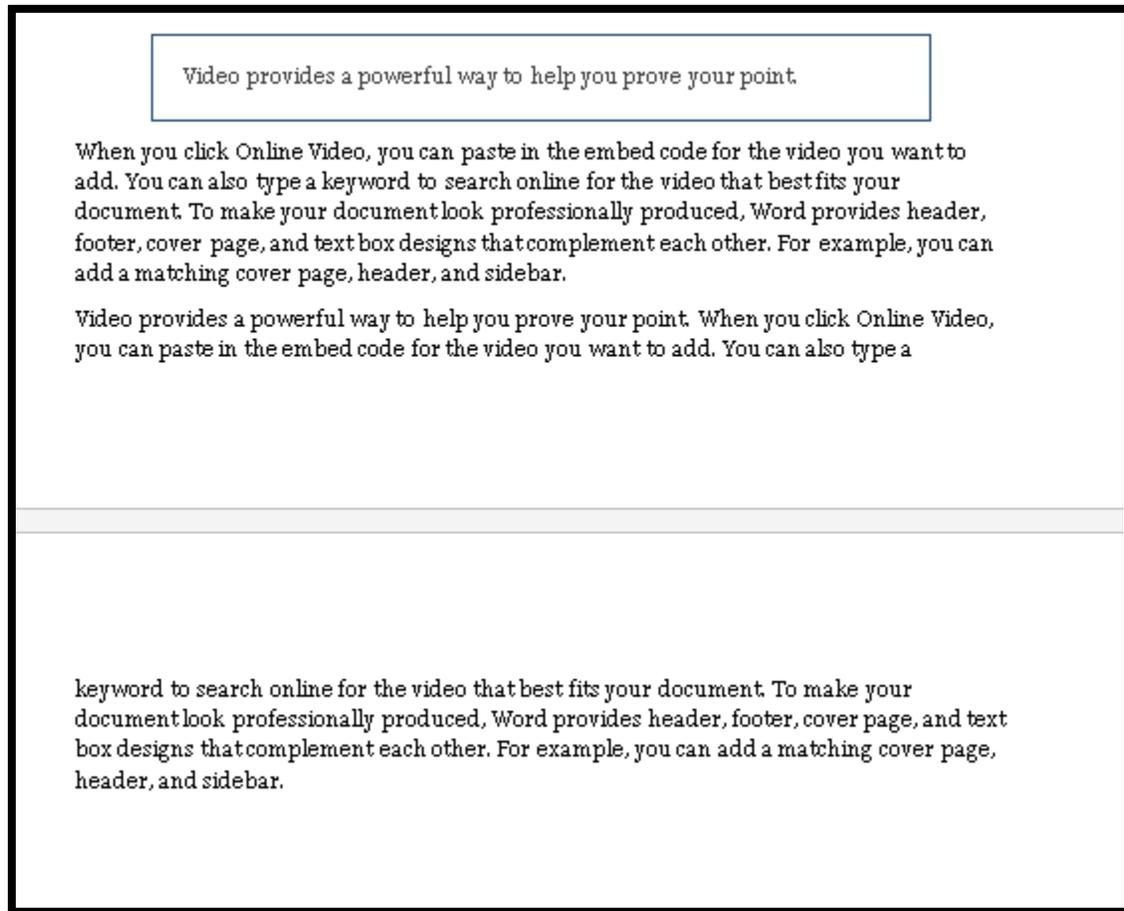


Figure 45 Sentence formatted with Intense Quote style and three paragraphs associated with it.

The next step is to select the text I want in Parallel Columns and apply the Left Column format to the text. In this case there are four paragraphs that I want associated with this sidebar including the one I formatted with the Intense Quote style.

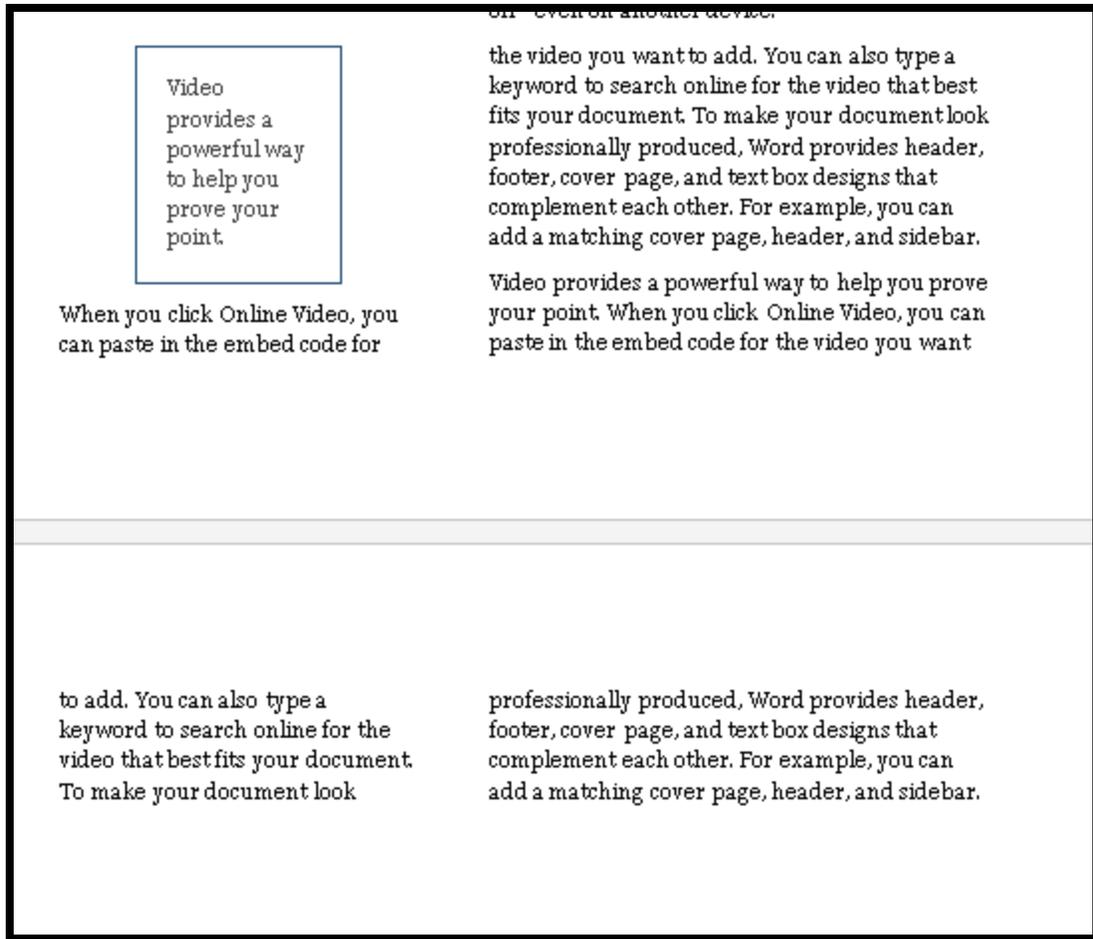


Figure 46 Four paragraphs put into Parallel Columns.

I did take a look at the width of the left column based on the amount of text I wanted for the sidebar and determined I needed a slightly larger column width on the left.

I selected both columns and pressed Alt + P, J, C to open the More Columns dialog. I modified the width of column 1 to 2.5 inches. Word automatically adjusted the gutter and the second column. I did this for both sets of Parallel Columns on this page so they would line up correctly.

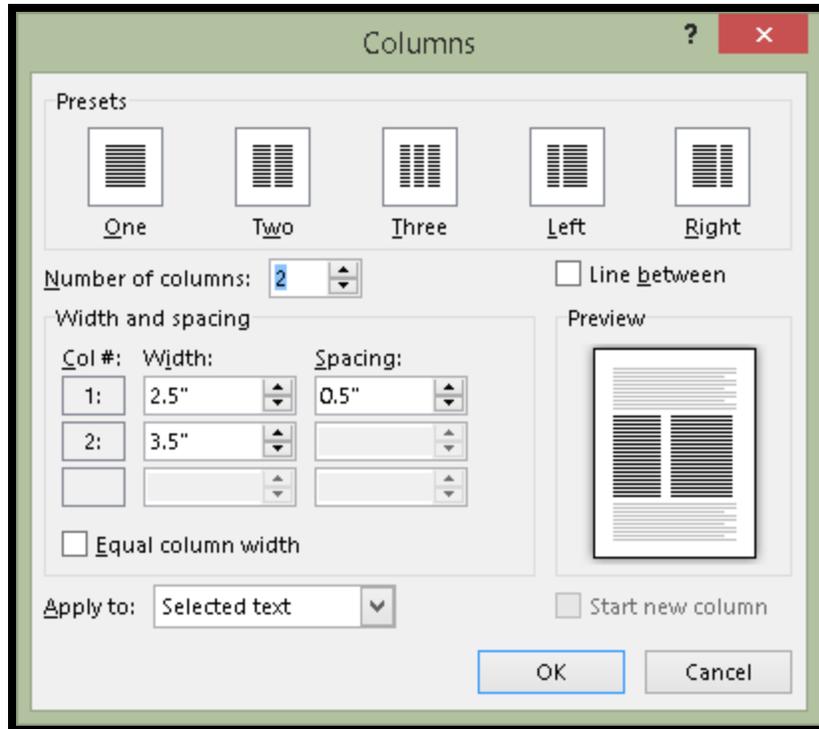


Figure 47 Columns dialog showing change in the width of column 1.

Visually, on the left I now have two paragraphs: the one with the border and the one that follows immediately after it.

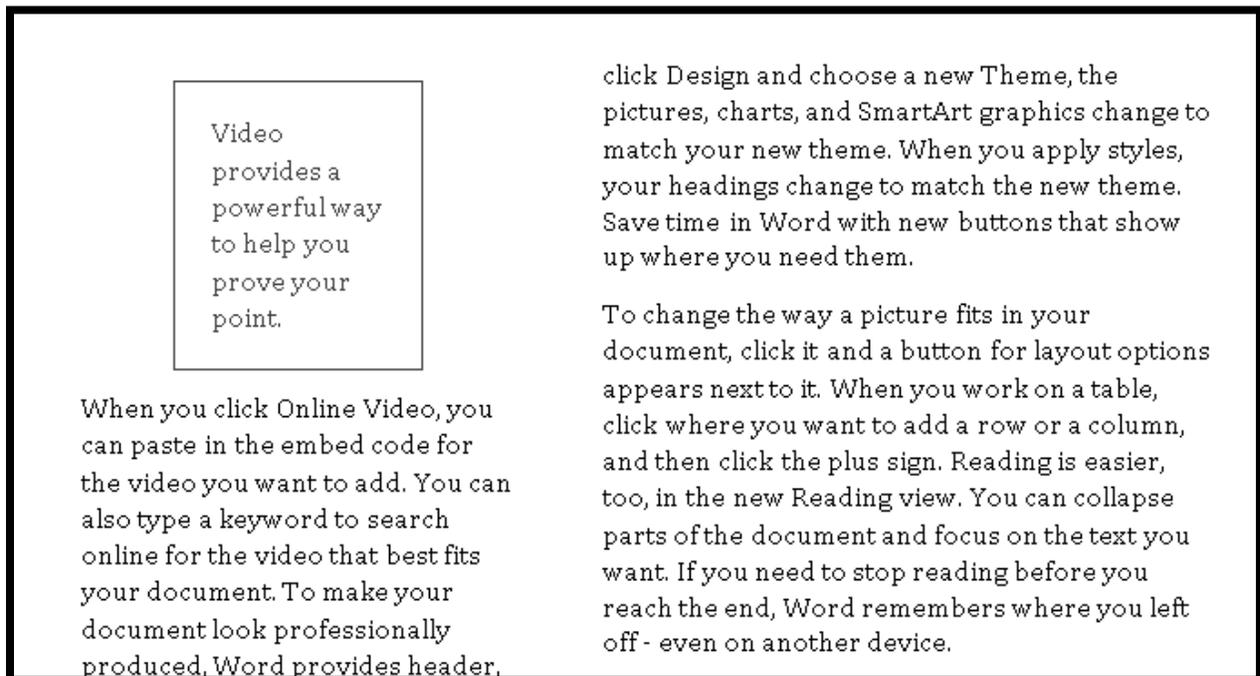


Figure 48 Text placed in Parallel Column format showing text in both columns.

I place my cursor at the beginning of the second paragraph in the first column and press Alt + P, B, C to insert a Column Break.

I then go to the top of the second page...because my text has spilled onto the second page.

I place my cursor just before the text in the first column on the second page and insert another Column Break.

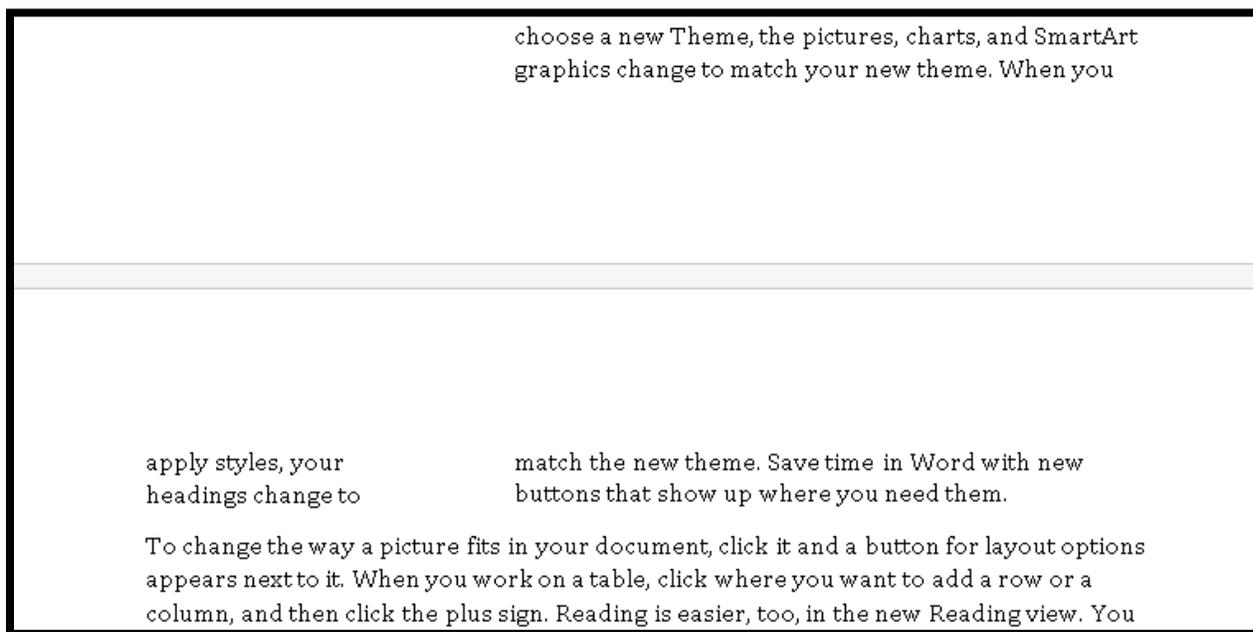


Figure 49 parallel Column spanning two pages.

The text now lines up as it should and will read as it logically should. When this document is converted to tagged PDF or Braille, it will also be read as it should.

The following image shows the two pages with the Heading for part of the text at the top of the first page and the bordered paragraph mimicking a text box at the bottom of the same page.

Introduction

Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them.

To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign. Reading is easier, too, in the new Reading view. You can collapse parts of the document and focus on the text you want. If you need to stop reading before you reach the end, Word remembers where you left off - even on another device.

Video provides a powerful way to help you prove your point.

When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar.

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Figure 50 Two pages of content formatted as Parallel Columns.

That's it! This is completely accessible!

Summary

It doesn't matter what file format you are working with, purposely using tables for design layout is simply a bad practice and poor design principle. It creates multiple levels of accessibility barriers.

The elements of an accessible table are:

1. Insert a table, never draw a table.
2. Make sure you identify a header row or multiple Header rows to repeat at the top of each page. (As of Word 2010 we've been able to use about the first 3 rows in a table if we absolutely need them as Header rows.)
3. Do not allow rows to break across pages. If the content does not fit into one cell, then a table is not the right structure for that content.
4. Use the ability to adjust Cell Margins to add space around text in a table. Do not press the Enter key.
5. Always include a Caption for your table and place the Caption above the table so that those using adaptive technology or those who don't use adaptive technology who may have a leaning or cognitive disability know what to expect when they enter the table.
6. Provide your table with Alt Text to give more information about the general structure of the table. Not every adaptive technology gives information about the number of rows or columns or whether it is a uniform or non-uniform table.

This document has provided an overview of how to optimize data tables for accessibility to a broad range of people with disabilities.

We've also looked at how to effectively use Tab Stops, a Paragraph Style, columns, Section Breaks and Column Breaks to optimize a document for accessibility and avoid bad design and inaccessible documents

As new techniques become available (such as being able to add Alt Text to a table as of Word 2010) this document will be updated.

Contact Information

[Contact Karen McCall](#) with questions or suggestions for other how to booklets. You'll find other helpful documents on accessible document design on the [Karlen Communications website](#).

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Microsoft Word MVP 2009-2015 and Microsoft Accessibility MVP 2014 (new category established in 2014).