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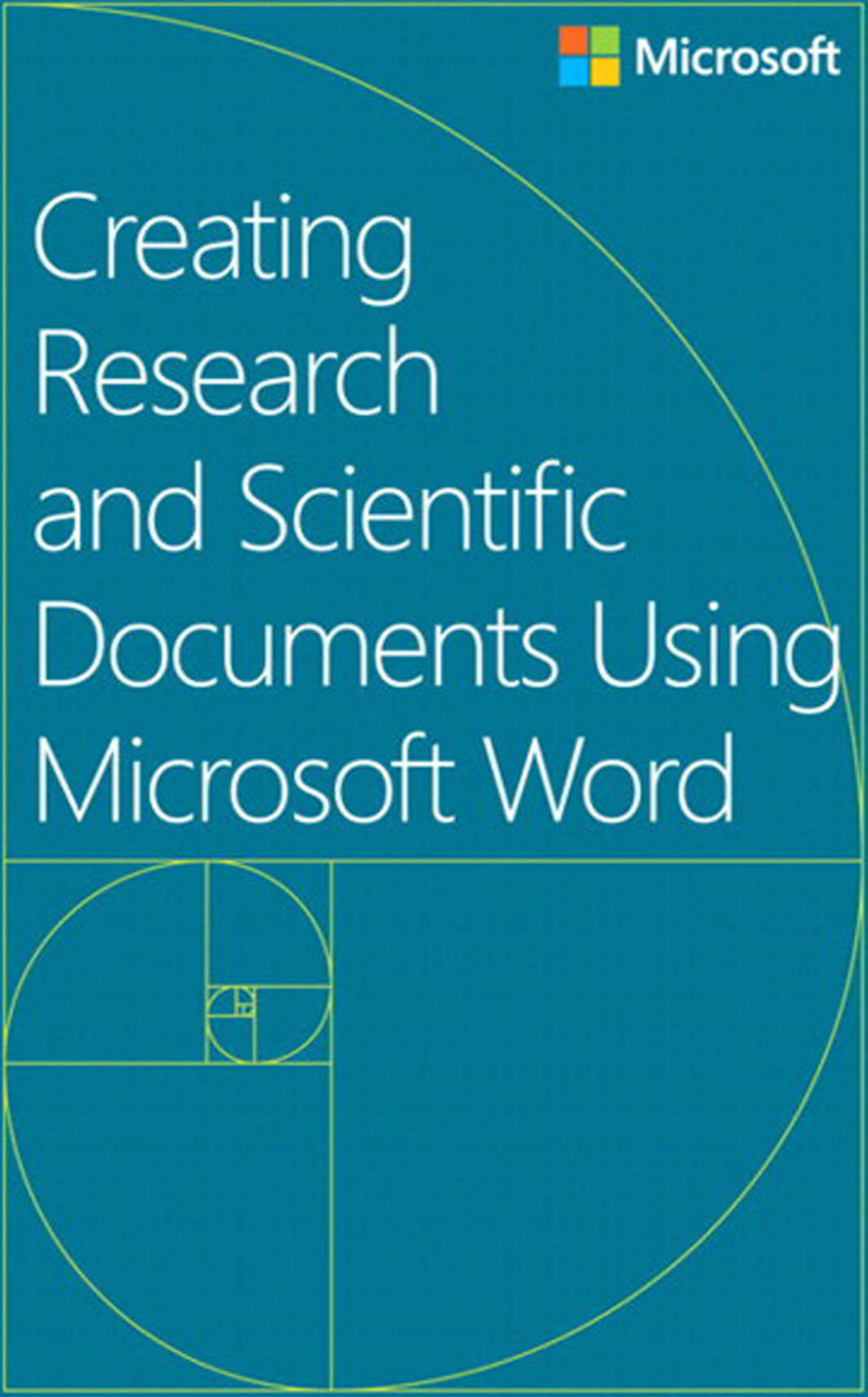
Creating Research and Scientific Documents Using Microsoft Word



Alexander Mamishev, PhD
Murray Sargent, PhD

Microsoft

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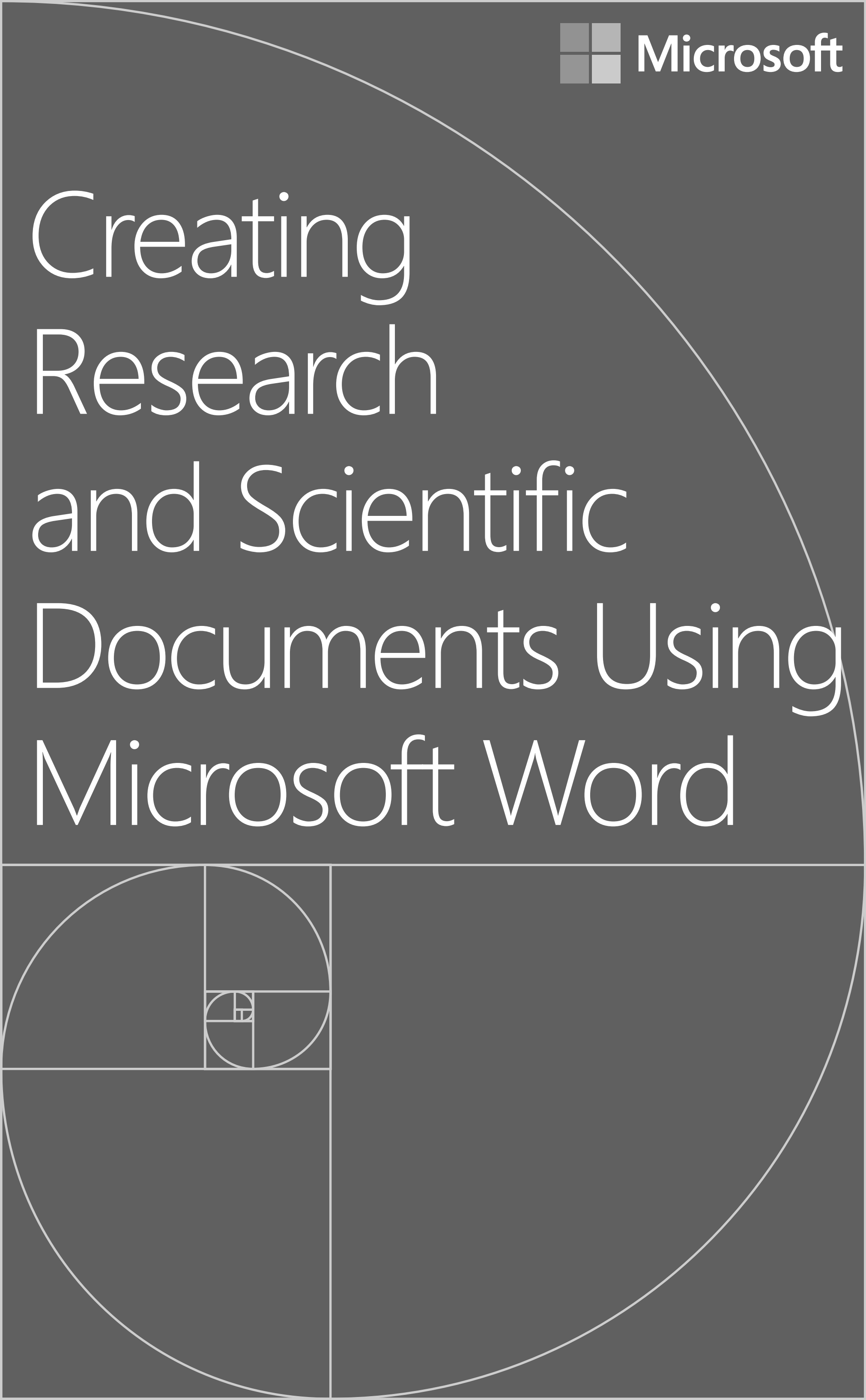

PUBLISHED BY
Microsoft Press
A Division of Microsoft Corporation
One Microsoft Way
Redmond, Washington 98052-6399

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Library of Congress Control Number: 2013945002
ISBN: 978-0-7356-7044-0

Printed and bound in the United States of America.

First Printing

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Developmental Editor: Devon Musgrave
Editorial Production: Online Training Solutions, Inc. (OTSI)
Copyeditor: Denise Bankaitis (OTSI)
Indexer: Jan Bednarczuk
Cover: Twist Creative • Seattle

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Foreword

I am delighted to introduce this book by Alex Mamishev and Murray Sargent on writing technical papers in Microsoft Word. This is a book I have wanted to see for some time, and I believe it will be of great assistance to technical authors in academia, research, and business. The idea of commissioning such a book came to me on hearing a seminar by Alex on his STREAM Tools while at the same time learning about Murray's wonderful work on mathematical equations in Word.

I started my academic life in the 1970s as a theoretical particle physicist. The research papers and books I wrote then were littered with complex mathematical equations, multiple integrals, and arcane symbols. My first papers were, of course, produced with a typewriter but, with the advent of mini-computers like DEC's famous VAX, I progressed to using the UNIX troff typesetting system. When I moved into computer science in the mid-1980s, I switched to LaTeX, written by Leslie Lamport and based on Donald Knuth's TeX typesetting system, and still beloved within the computer science and particle physics communities. But with the arrival of the IBM PC in 1981, I also found myself using WordStar and later WordPerfect to write collaborative project proposals that did not require mathematical notation. A decade or so later, as a university department chair, I found myself switching to Word for compatibility with others in the department and university administration. My complete conversion to Word came with my leadership of the multidisciplinary eScience Initiative in the UK in the early 2000s. I now found myself regularly collaborating with diverse communities of scientists who either did not know or want to use LaTeX!

We live in a world of collaboration in which working as part of a team to solve a complex problem or to undertake a specific task is a necessity, be it in business or in academia. In science, multidisciplinary collaboration between scientists of many disciplines is fast becoming the new norm. Similarly, project proposals and technical reports frequently involve many different parts of an organization or multiple organizations. Capturing the output of such diverse teams in a professional and attractive looking document is now more important than ever. In large part, this book was written to assist the many Word users who have not yet stepped up to using the advanced features of Word to more easily produce long documents with equations, tables, references, and footnotes. The template techniques described in this book will enable distributed teams to collaborate on documents using a common platform.

So I very much welcome this book and congratulate Alex and Murray for producing such an accessible text. I certainly know that using such templates and the other advanced features explained here would have made writing my latest book a whole lot easier!

Tony Hey
Vice President, Microsoft Research
October 2013

Acknowledgments

We would like to thank many individuals for their participation in various stages of this project.

At the University of Washington, several generations of students were the first adopters of the techniques described here. While it is impossible to name them all, some of the most active ones were Nels Jewell-Larsen and Kishore Sundara-Rajan. Overall, more than fifty people contributed to this project in different ways, and we would like to thank all of them here.

Joshua Hutt did a tremendous job setting up the text of this book in Word, updating the contents of the manuscript as he went along. Aaron Zielinski meticulously proofread and copyedited the text before it went to the publisher.

Several Microsoft employees greatly contributed to this project. Microsoft VP for Research, Tony Hey, recognized the value of this method and supported the project early on. Devon Musgrave directed the production process.

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Introduction

The goal of this book is to teach the reader how to use the powerful features of Microsoft Word 2013 to develop complex technical documents. Writing long documents that are filled with equations, tables, cross-references, and literature citations requires the proper use of the advanced features in Word 2013; otherwise, the productivity and output quality of the writer or group are diminished.

The intended audience for this book is engineers, scientists, graduate students, and technical professionals. Typical readers from these groups have good working knowledge of Word. They have used it to write reports, resumes, and cover letters, and they know how to format text and look up online help. However, when it comes to writing a longer document, for example, a PhD dissertation, or a document that takes input from a dozen authors, for example, a multi-disciplinary research proposal, the basic techniques become insufficient.

A common recourse for this audience is to use LaTeX or TeX for their typesetting needs. In some specialties, it is possible to rely exclusively on LaTeX. However, most of those using LaTeX will sooner or later face the challenge of developing a document in Word, because of the requirements of a project leader or funding organization, or just because there is no chance that some of the team members will use LaTeX in their collaborative writing effort. When this situation occurs, it’s time to learn about the advanced features of Word, which allow matching nearly every functionality of LaTeX-based software, while also being accessible to less sophisticated computer users. Moreover, even the most proficient users of LaTeX will find that collaborating on documents produced in Word is quicker and more efficient, provided they follow the guidelines explained in this book.

This book is based on STREAM Tools methodology. STREAM Tools is a writing system based on using efficient processes to produce quality content and attractive documents. STREAM Tools seeks to enable and automate parts of the writing process, but it does not substitute for the process itself. More about STREAM Tools can be found in “Appendix B: About STREAM Tools.”

Who this book is for

This book has been designed for use by anyone in academia, industry, or commerce who needs to produce complex, high-quality technical documents, such as research papers, grant proposals, books, or doctoral dissertations. The methods in this book are, for the most part, also applicable to earlier versions of Word; you simply have to find the alternative locations of buttons in the user interface.

How this book is organized

Ideally, you should read this book once, completing the recap sections at the end of each chapter. This will familiarize you with the principles and best practices of template use. When you are finished with this book, you will be proficient in the use of templates, and you will have the skills necessary to expand your use of templates as you desire. We recommend that you keep this book nearby and continue to refer to it as you write. Before long, you will also be able to create templates of your own, for any purpose.

If you work on documents with others, it's important that they use the same system and the same template-centered approach. Consolidating your methods will save you countless hours of modifying your document's formatting and organization, and help you avoid visual and stylistic inconsistencies along the way.

It is also worth noting that any portion of a document built with such templates can be instantly and effortlessly imported into any other template-based document. In this way, you can greatly improve your efficiency as you escape the tradition of meticulously scrutinizing document numbering, formatting, and other small details.

Note The Word 2013 program is not available from this website. You should purchase and install that program before using this book.

Terminology

This book uses various terms with which you may be unfamiliar. The following table provides a short list of some key terms, their definitions, and where they are first described.

Term	Definition	First introduced
Template	Any document with pre-made headings, sections, styles, and fields.	Page 2
Element	Headings, equations, figures, tables, and references.	Page 3
Cross-Reference	Text in Word 2013 that refers directly to other text in the document. Will update when the source text is changed (generally requires pressing Ctrl+A and F9).	Page 16
Field Codes	Text that is automatically generated by Word. Includes cross-references.	Page 40
Yellow Text	Filler text that describes the type of text that belongs in a section of the document.	Page 2
Styles	Feature in Word 2013 that can be applied to quickly change the appearance and layout of text, both per character and per paragraph.	Page 6
STREAM Tools	Collaborative writing system developed by Alexander Mamishev and Sean Williams. See *http://www.streamtoolsonline.com*.	Page 13

Symbols and notations used in this book

Throughout the book, you will encounter many instructions on how to perform various tasks in Word 2013. These tasks will often involve navigating through menus and using keystrokes, in addition to following along with examples. The formatting conventions used in this book are described in the following sections.

Formatting of menu operations

Menu options and button clicks will appear in bold. When you are required to click multiple menu options in short succession, they will be separated by double-bar arrows, like so:

Menu ⇒ **Menu** ⇒ **Menu Option**

Formatting of keystroke operations

Keystrokes will also appear in bold. Those that are meant to be pressed simultaneously will be separated with plus signs:

Keystroke + Keystroke

Keystrokes that are meant to be pressed in succession will be separated with single-bar arrows:

Keystroke → **Keystroke**

Formatting of notes

Note Notes will appear formatted like this.

Formatting of good examples

✓ Good example.

Formatting of bad examples

✗ Bad example.

Errata

We've made every effort to ensure the accuracy of this book and its companion content. Any errors that have been reported since this book was published are listed here:

http://aka.ms/670440/errata

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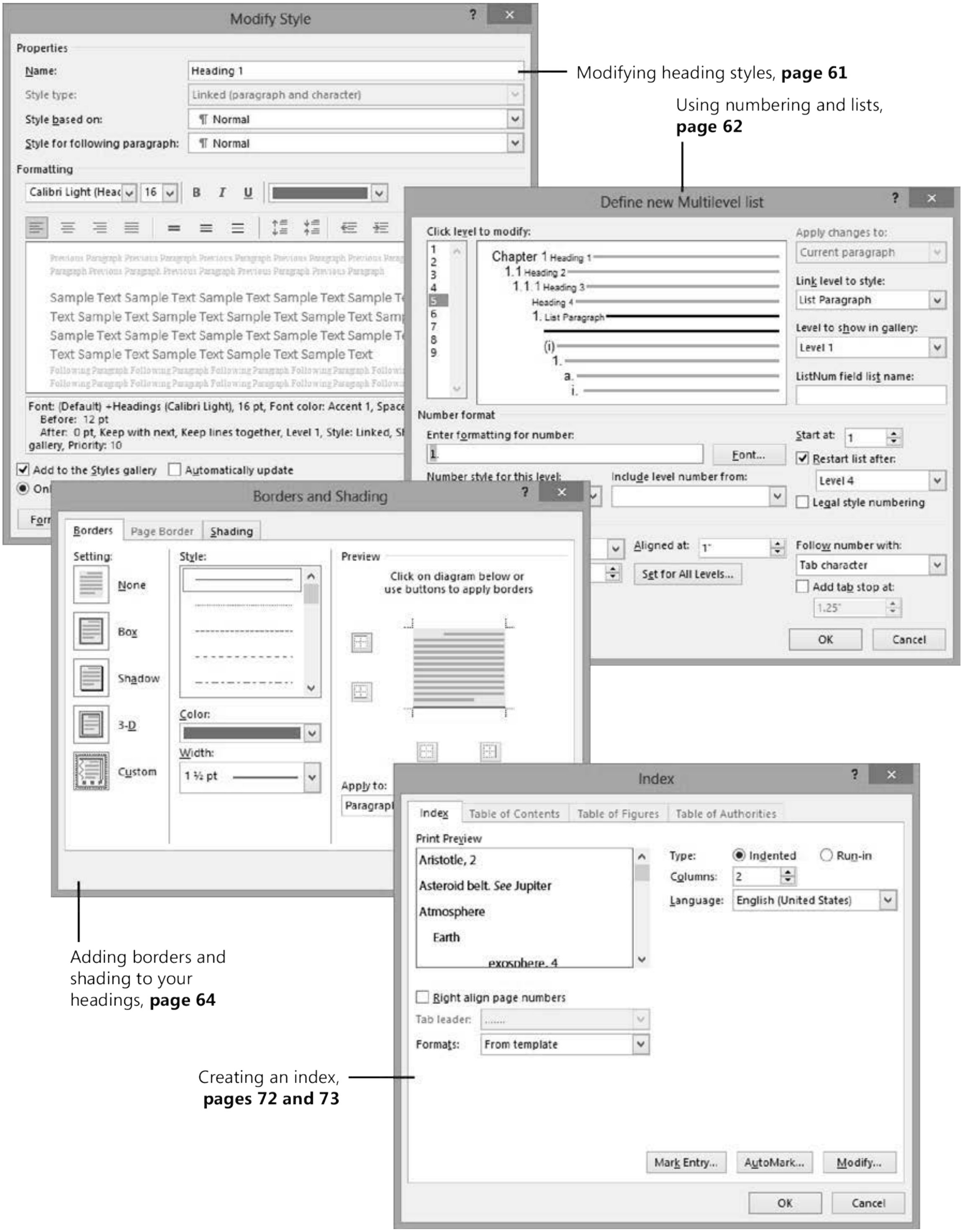


Modifying heading styles, **page 61**

Using numbering and lists, **page 62**

Adding borders and shading to your headings, **page 64**

Creating an index, **pages 72 and 73**

Modify Style

Name: Heading 1
Style type: Linked (paragraph and character)
Style based on: ¶ Normal
Style for following paragraph: ¶ Normal
Formatting: Calibri Light (Head… 16

Font: (Default) +Headings (Calibri Light), 16 pt, Font color: Accent 1, Space Before: 12 pt After: 0 pt, Keep with next, Keep lines together, Level 1, Style: Linked, S… gallery, Priority: 10

☑ Add to the Styles gallery ☐ Automatically update

Define new Multilevel list

Click level to modify: 5
Apply changes to: Current paragraph
Link level to style: List Paragraph
Level to show in gallery: Level 1
Enter formatting for number: 1.
Start at: 1
☑ Restart list after: Level 4
☐ Legal style numbering
Aligned at: 1"
Follow number with: Tab character
☐ Add tab stop at: 1.25"

Borders and Shading

Setting: None, Box, Shadow, 3-D, Custom
Width: 1 ½ pt
Apply to: Paragrap…

Index

Print Preview:
Aristotle, 2
Asteroid belt. *See* Jupiter
Atmosphere
Earth
exosphere, 4

Type: ● Indented ○ Run-in
Columns: 2
Language: English (United States)
☐ Right align page numbers
Formats: From template

Properties
Formatting
?
×
Sample Text Sample Text Sample Text Sample Text Sample T
Chapter 1 Heading 1
1.1 Heading 2
1.1.1 Heading 3
Heading 4
1. List Paragraph
(i)
1.
a.
i.
ListNum field list name:
Number format
Font...
Number style for this level:
Include level number from:
Set for All Levels...
OK
Cancel
Borders
Page Border
Shading
Style:
Color:
Preview
Click on diagram below or use buttons to apply borders
Index
Table of Contents
Table of Figures
Table of Authorities
Tab leader:
Mark Entry...
AutoMark...
Modify...

CHAPTER 3

How to work with headings

In this chapter, you will learn how to

- Create and cross-reference headings
- Use multilevel lists to organize your headings
- Enhance your headings with borders and shading
- Create page numbers and adjust their format
- Create tables of contents and limited, section-based tables of contents
- Create front matter, such as acknowledgments and forewords
- Create back matter, including appendices and indexes

Headings are the titles of chapters, sections, and subsections. You can use headings to give your document logical structure. In addition to generic, black-and-white headings, you can also create colorful, artistic headings. The effects are easy to create. This chapter will walk you through all aspects of heading creation, ensuring that your headings will be functional, powerful, and attractive.

How to create and cross-reference headings

There are two ways to make headings:

- Copy an existing heading.
- Create a new heading.

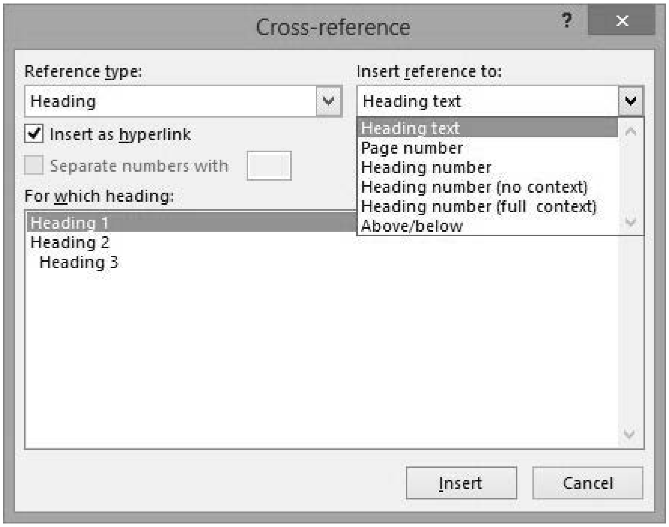
> **Note** Because headings do not require cross-references, you might find it simpler to create them from scratch.

To create a new heading

1. Type the heading text where you want it in the document.
2. Click a **Heading** style in the **Style** gallery on the **Home** tab. Alternatively, you can press **Ctrl+Alt+#**, where # is the heading level you would like to create.
3. Press **Ctrl+A**, and then press **F9** to update the numbering and table of contents.

To cross-reference a heading

1. Click **References** ⇒ **Cross-Reference** in the **Captions** group.
2. In the **Reference type** drop-down list, select **Heading**, and then select a heading for cross-referencing.
3. In the **Insert reference to** drop-down list, select what you would like to cross-reference, and then click **OK**.



Reference type: Heading

Insert reference to: Heading text

☑ Insert as hyperlink

☐ Separate numbers with

For which heading: Heading 1

Cross-reference
?
×
Heading text
Page number
Heading number
Heading number (no context)
Heading number (full context)
Above/below
Heading 1
Heading 2
Heading 3
Insert
Cancel

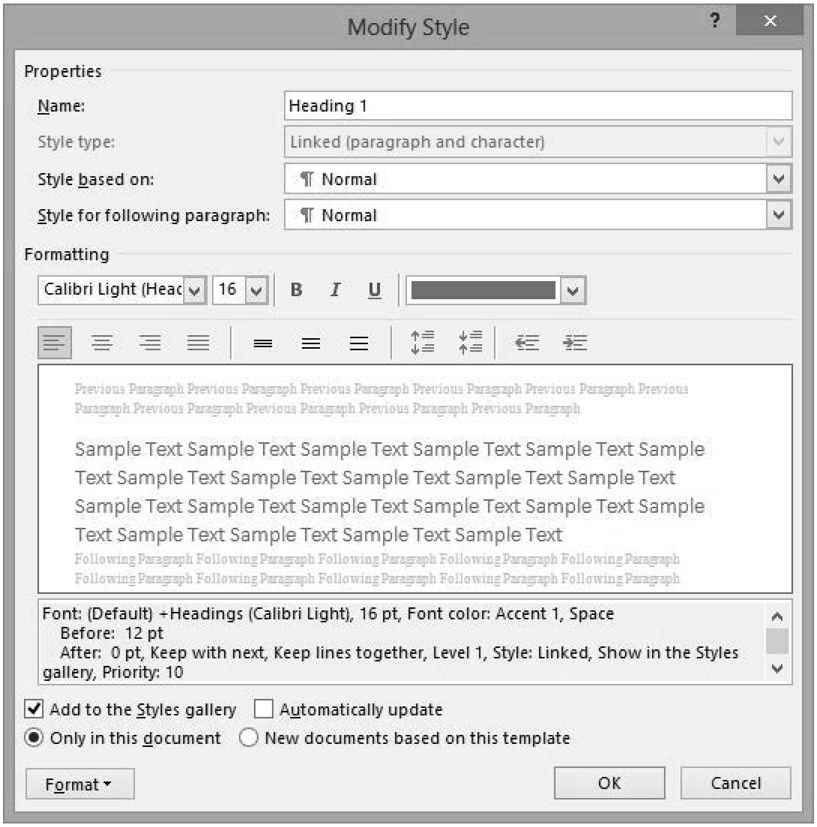
You can reference the heading number, the page number, or even the text of the heading.

How to alter headings

Writing teams will often need to change the appearance of headings to meet the needs of a particular writing situation. The two most common changes include altering style (font and size) and altering format (numbering schemes). In the procedure that follows, you will learn how to modify the style of a single heading level. To change the fonts, colors, and other properties for all the headings in your document, refer to Chapter 2, "How to design templates."

To alter the heading style

1. Click the **Home** tab on the ribbon.
2. Right-click the **Heading 1** style, and then click **Modify**.
3. In the **Modify Style** dialog box, alter the font, size, and spacing for your heading.
4. Adjust additional style properties by clicking the **Format** button, choose an element to change, and then click **OK**.



Name: Heading 1
Style type: Linked (paragraph and character)
Style based on: ¶ Normal
Style for following paragraph: ¶ Normal

Calibri Light (Heac 16

Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph Previous Paragraph

Sample Text Sample Text

Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph Following Paragraph

Font: (Default) +Headings (Calibri Light), 16 pt, Font color: Accent 1, Space
Before: 12 pt
After: 0 pt, Keep with next, Keep lines together, Level 1, Style: Linked, Show in the Styles gallery, Priority: 10

☑ Add to the Styles gallery ☐ Automatically update
● Only in this document ○ New documents based on this template

By using the Modify Style dialog box, you can alter a style without losing the manual adjustments you have made. Make sure the Automatically Update check box is cleared.

Note To avoid having to modify the style directly each time, you can select **Automatically update**. Word will then update the formatting for all your headings whenever you modify the attributes of a single one. This can be useful for specialized styles, such as headings. For more general styles, such as the Normal style, it is recommended that you not select this setting to avoid unnecessary complications.

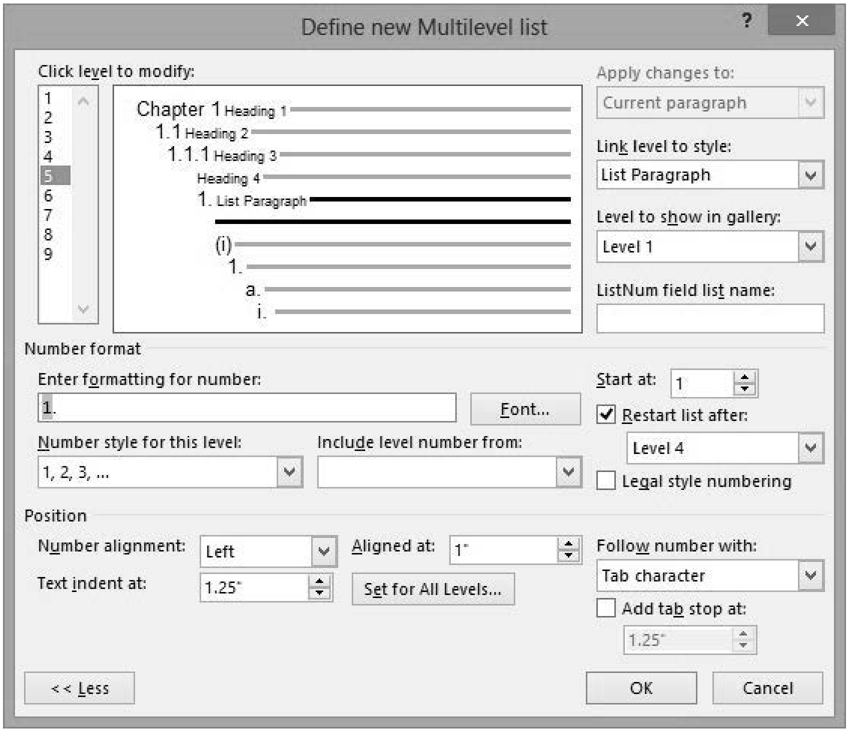
Also note that if you use the **Update Style to Match Selection** menu item, you will lose any formatting changes that you made to text that uses the same style. To avoid this, it is recommended that you use the **Modify Style** dialog box instead.

How to use numbering and multilevel lists

Numbered lists, particularly multilevel lists, are an important part of chapter and section organization. When used properly, these lists help you organize your documents, and create automatically numbering and updating references. These lists are tied directly to your heading styles, so it makes sense to adjust them at the same time.

To create a multilevel list

1. Place the cursor on a line with a heading.
2. Click the multilevel list button on the **Home** tab, and click **Define new Multilevel list**.
3. Click the **More** button to access important settings.



Click level to modify: 5

Apply changes to: Current paragraph

Link level to style: List Paragraph

Level to show in gallery: Level 1

ListNum field list name:

Number format

Enter formatting for number: 1.

Number style for this level: 1, 2, 3, ...

Include level number from:

Start at: 1

☑ Restart list after: Level 4

☐ Legal style numbering

Position

Number alignment: Left

Aligned at: 1"

Text indent at: 1.25"

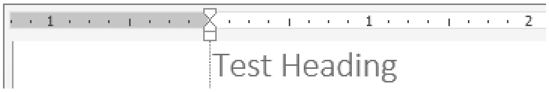
Follow number with: Tab character

☐ Add tab stop at: 1.25"

Use a multilevel list to create a cohesive numbering system by linking your styles to list levels. You can also remove the numbers for a level or include custom text.

4. Click a level to specify its settings.
5. You can choose a word for the prefix or use none at all; here, *Chapter* has been chosen. Simply type it in the **Enter formatting for number** box.
6. If you would like to use letters or roman numerals for a level, choose a different numbering scheme in the **Number style for this level** box.
7. Finally, if you want to hide the number for a particular level, simply click **Font** and make sure the **Hidden** check box is selected.
8. Click **OK** when you are finished.

By default, the numbers are linked to the heading styles, but you can choose other styles if you like. When you insert one of the corresponding styles in your document, it will be numbered automatically. If you chose to hide the number for a level, you might want to align it flush with the margin. To do so, insert the style in the document, and then click the bottom half of the ruler marker and drag it to the left.



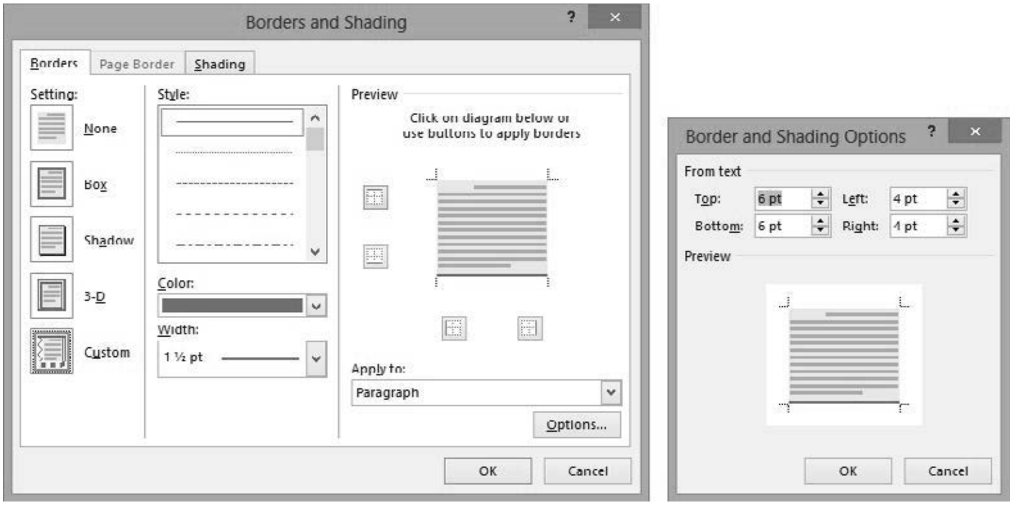
You can chose the default indentation for any style by dragging the ruler marker that appears at the bottom of the ribbon. After adjusting it, update the style in the Style gallery.

How to set borders, shading, and special formatting

If you are designing something other than a standard research report or proposal, you might consider using fancy borders and formatting for your headings.

To set up borders and shading

1. Right-click the **Heading 1** style in the **Style** gallery, and click **Modify** ( ).
2. Click the **Format** button in the lower-left corner, and then click **Border**.
3. Choose a border color, width, and style, and click the border buttons to choose where to place the border. You can use different border styles for each side; just change the line settings and click a different border button. Click the **Options** button to adjust the padding and make the shaded region larger.


Borders and Shading
?
×
Borders
Page Border
Shading
Setting:
None
Box
Shadow
3-D
Custom
Style:
Color:
Preview
Click on diagram below or use buttons to apply borders
Options...
OK
Cancel
Border and Shading Options
?
×
From text
Preview
OK
Cancel

Width: 1 ½ pt

Apply to: Paragraph

Top: 6 pt

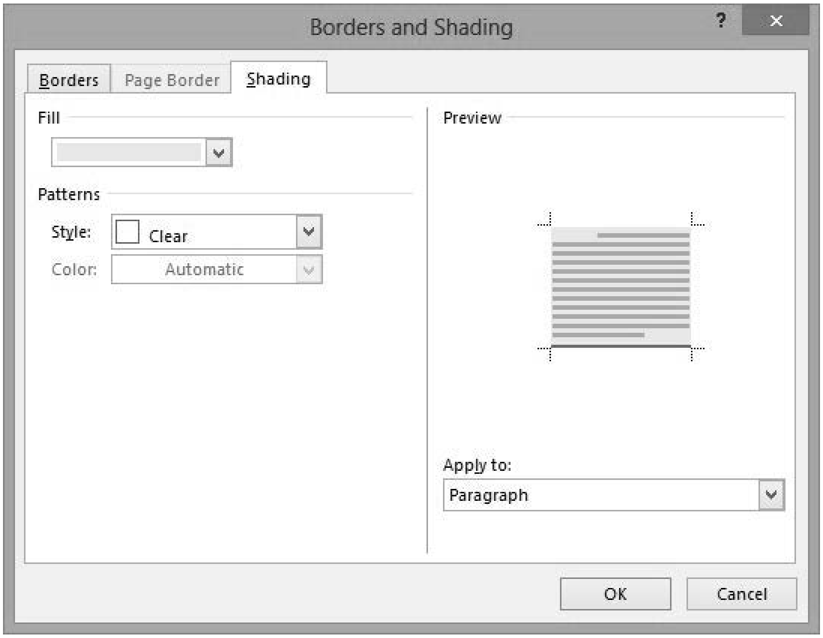
Bottom: 6 pt

Left: 4 pt

Right: 4 pt

In the Borders And Shading dialog box, you can create borders and change their placement relative to your text. To ensure that the shading extends to fit the padding you choose, add a white border (to the top, in this example).

4. To modify the shading, click the **Shading** tab. To use a pattern, select one under **Patterns**, and choose a color, if you like.


Borders and Shading
?
×
Borders
Page Border
Shading
Fill
Patterns
Preview
OK
Cancel

Style: Clear

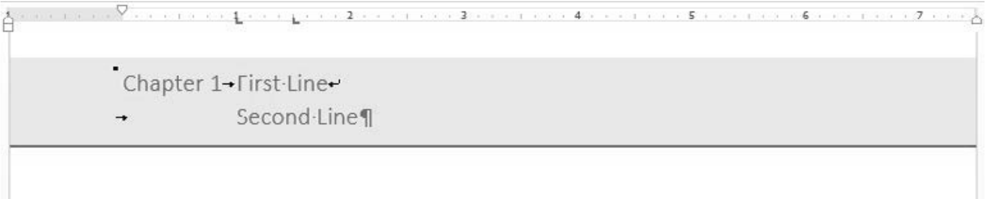
Color: Automatic

Apply to: Paragraph

You can add shading and patterns to your styles on the Shading page.

5. Click **OK** in all dialog boxes.

6. To make your border extend to the edge of the page, simply drag the parts of the ruler marker to the edges.



Chapter 1→First·Line↵
→ Second·Line¶

When you align the ruler markers to the edges of the page, your newly designed style will fill the page.

Note This method does not work well with headings of more than one line. The heading text will extend to the edge of the page. Therefore, you should use soft line breaks (**Shift+Enter**) to begin a new line before your line enters the margin, as depicted in the preceding graphic. Unfortunately, this will cause the line breaks to appear in your cross-references, and you must manually remove them before printing.

To view formatting marks such as those shown in the previous graphic, click the **Paragraph** button on the **Home** tab (¶).

How to make headings work with fields

Create front matter

A long document such as a thesis or book often requires front matter, such as a preface, acknowledgments, or a table of contents. The headings for these sections are treated differently from the main document headings, because they are numbered in roman numerals whereas the main text is numbered with arabic numerals.

Control page numbers

To insert page numbers

#
Page
Number

1. Click the **Insert** tab, and in the **Header & Footer** group, click **Page Number**.
2. Choose your preference; for example, **Bottom of the Page**.
3. Choose your desired appearance.
4. To number the beginning of your document in roman numerals, click **Page Number** again, and then click **Format Page Numbers**().

5. Under **Number Format**, choose a numbering style.
6. Click **OK**.

To create section breaks

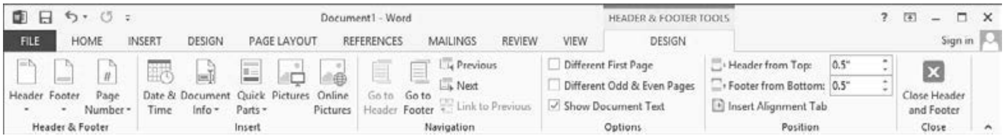
1. Place the cursor where you would like roman numbering to end.
2. On the **Page Layout** tab, click **Breaks**.
3. In the **Section Breaks** group, select **Next Page**. This inserts a section break between the two pages.

To restart numbering after a section break

1. Place the cursor after the section break (), in the section you want to renumber.
2. On the **Insert** tab, click **Page Number**, and select **Format Page Numbers**.
3. Under **Number Format**, choose arabic numerals.
4. In the **Page Numbering** text box, select **Start at: 1**.
5. Click **OK**.

Note You can manage your page numbering scheme in greater detail on the **Header & Footer Design** tool tab. To access it, double-click the page header and click the **Design** tab that appears.

From here, you can check **Different First Page**, and delete the page number that appears on the first page of the section. Additionally, you can use **Different Odd & Even Pages** to align your page numbers to the outside, for a book-like layout.


Document1 - Word
HEADER & FOOTER TOOLS
FILE
HOME
INSERT
DESIGN
PAGE LAYOUT
REFERENCES
MAILINGS
REVIEW
VIEW
DESIGN
Sign in
Header
Footer
Page Number
Header & Footer
Date & Time
Document Info
Quick Parts
Pictures
Online Pictures
Insert
Go to Header
Go to Footer
Previous
Next
Link to Previous
Navigation
Options
Position
Close Header and Footer
Close

☐ Different First Page
☐ Different Odd & Even Pages
☑ Show Document Text
Header from Top: 0.5"
Footer from Bottom: 0.5"
Insert Alignment Tab

The Header & Footer Tools Design tab will let you fully customize the behavior and appearance of your headers.

Insert a table of contents

Sometimes you want to add entries to the table of contents that are not numbered Chapter 1, Chapter 2, and so on. For example, the preface, acknowledgments, and abstract should be listed in the table of contents, but wouldn't be sequentially numbered headings. In order to include these entries, you first have to create a new style, and then modify the table of contents to include the new style.

Stage 1: Create a new style for front matter

1. Manually change the front matter heading to look the way you want (for example, Arial, 20 pt, bold, centered).

> **Note** Alternatively, you could base the front matter heading on your **Heading 1** style. This will allow the front matter heading to inherit any changes that you make to the **Heading 1** style.
>
> To do this, create a front matter heading and apply the **Heading 1** style to it (**Ctrl+Alt+1**). Then, complete the following steps, making sure to remove the numbering from the style. In the **Modify Style** dialog box, click **Format**, then **Numbering**, and choose **None**.

2. Place the cursor on your newly formatted heading and click the button in the lower-right corner of the **Style** gallery (▾).
3. Choose **Create a Style** at the bottom of the drop-down menu, and type in the style name; for example, **Front Heading**.
4. Click **Modify**, and choose **Normal** under **Style for the Following Paragraph**.
5. Click **OK**.
6. Apply this style formatting to all other front matter headings by using the **Style** gallery, as with any other heading style.

Stage 2: Add front matter sections to the table of contents

1. Place the cursor where you would like the table of contents to appear (or on the existing table of contents, if there is one).

Table of Contents ▾

2. On the **References** tab, click **Table of Contents**, and then click **Custom Table of Contents** ().
3. Click the **Options** button.
4. In the **Available styles** section of the dialog box, add a **1** in the **TOC level** box for **Front Heading**.

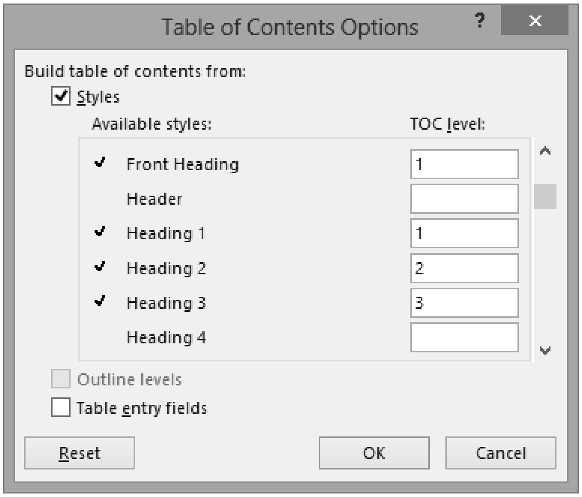


Table of Contents Options

Build table of contents from:

☑ Styles

Available styles:	TOC level:
✓ Front Heading	1
Header	
✓ Heading 1	1
✓ Heading 2	2
✓ Heading 3	3
Heading 4	

☐ Outline levels

☐ Table entry fields

You can specify which styles are included in your table of contents in addition to the hierarchy.

Note If you are using a style (such as **Appendix**) for back matter, at this point remember to put a **1** in the corresponding box as well. Detailed procedures for the back matter are discussed in the next section.

You should now have a new table of contents with the headings from your front matter listed with their respective page numbers. If you completed the first portion of the process listed in this section, then the numbers should be roman numerals for the front matter and arabic numerals for the remaining chapter and section headings.

How to create and format back matter

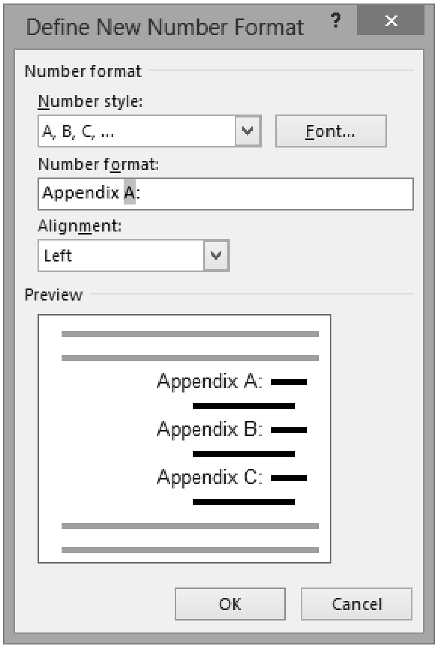
In addition to front matter, large documents also have back matter, such as appendices, an index, or a glossary. You can create and use an **Appendix** style for your appendices. The STREAM Tools template file *BasicThesisOrBookTemplate.docx* already contains appendices preformatted in this manner, but you can use the process described here to create new back matter in your document.

Create appendices

To create an appendix in your document, there are two stages.

Stage 1: Create the appendix

1. Type a title for the appendix in a new line where you want it to appear.
2. Change the style of the line to **Heading 1** (**Ctrl+Alt+1**).
3. Click the button in the lower-left corner of the **Style** gallery (▾), and click **Create a Style**.
4. Name your style (**Appendix**, for example), and click **Modify**.
5. Under **Style for following paragraph**, choose **Normal**.
6. Click **Format** ⇒ **Numbering** ⇒ **Define New Number Format**.
7. Under **Number Style**, select capital letters, and under **Number format**, type **Appendix A**, where the A is the field value already in place.



Number style: A, B, C, ...

Number format: Appendix A:

Alignment: Left

You can use the Define New Number Format dialog box to create a numbering scheme for any style.

8. Click **OK** in all three dialog boxes.
9. Now, reformat the appendix heading as necessary, including correcting the indentation and placing tab stops.
10. With the cursor on the appendix heading, right-click the **Appendix** style in the **Style** gallery, and click **Update Appendix to Match Selection**.

Stage 2: Add the appendix to the table of contents

If you followed the previous instructions, your appendix should appear in the table of contents automatically, at the same level as the **Heading 1** style. Simply press **Ctrl+A** → **F9** to update the fields, including the table of contents, and select **Update entire table** in the dialog box that appears.

If you did not base the **Appendix** style on **Heading 1**, you will need to manually add it to the table of contents hierarchy. In addition, you might want to add other styles to your table of contents. To do so, place the cursor on your table of contents, and follow these steps:

Table of Contents

1. Click **References** ⇒ **Table of Contents**.
2. Click **Custom Table of Contents** ().

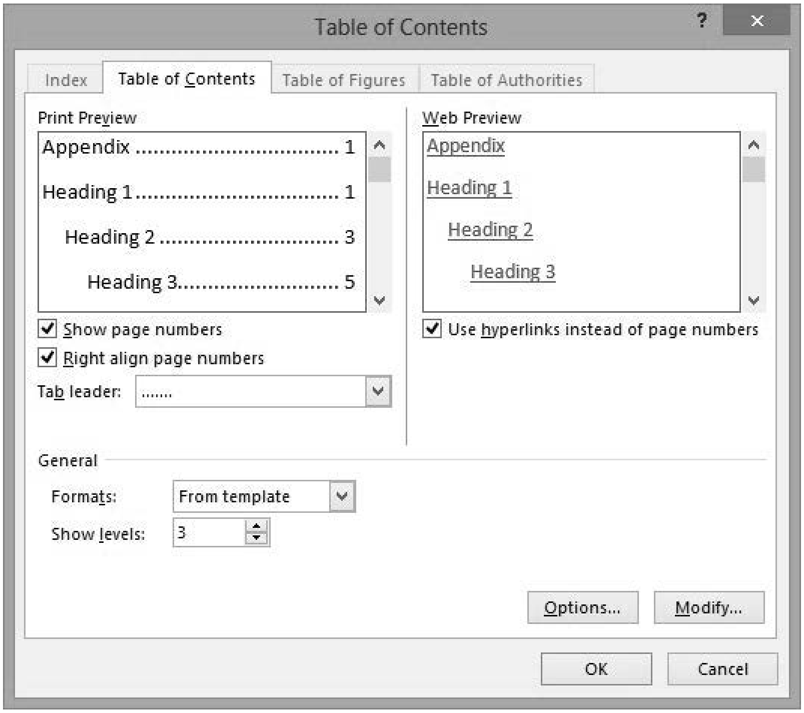


Table of Contents
?
×
Index
Table of Contents
Table of Figures
Table of Authorities
Print Preview
Web Preview
General
Options...
Modify...
OK
Cancel

Appendix 1
Heading 1 1
Heading 2 3
Heading 3 5

Appendix
Heading 1
Heading 2
Heading 3

☑ Show page numbers
☑ Right align page numbers
Tab leader: ....
☑ Use hyperlinks instead of page numbers
Formats: From template
Show levels: 3

Here you can adjust several basic elements of your table of contents, including how many levels to show and what type of tab leader to use.

3. Click the **Options** button.

4. In the **TOC level** box for **Appendix**, type **1**. If you would like to add another style to your table of contents, find it in the list, and enter a number for its **TOC level** setting.

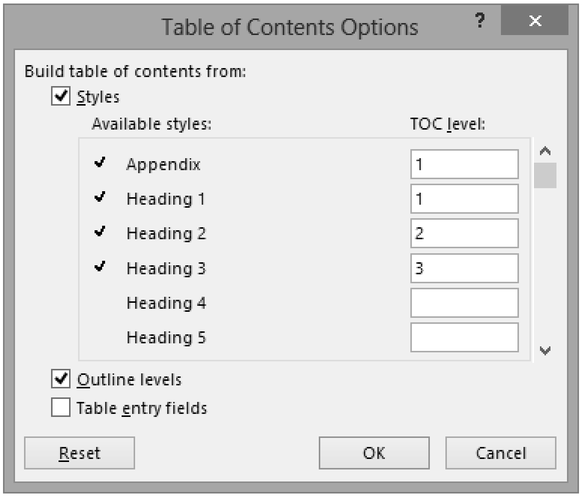


Table of Contents Options

Build table of contents from:

☑ Styles

	Available styles:	TOC level:
✓	Appendix	1
✓	Heading 1	1
✓	Heading 2	2
✓	Heading 3	3
	Heading 4	
	Heading 5	

☑ Outline levels

☐ Table entry fields

By adjusting the TOC Level setting for each style, you can select which styles to include. Their properties will be automatically adjusted to suit the table of contents hierarchy.

5. Click **OK** in all dialog boxes.

Create indexes

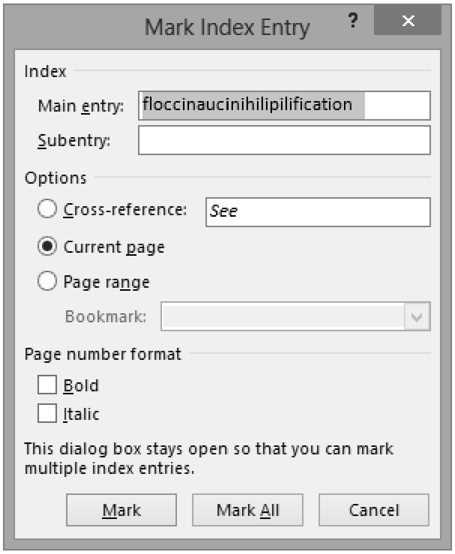
An index at the end of a book allows the reader to find the pages that mention specific words. Indexes are most frequently encountered in textbooks or manuals. Word Help provides a comprehensive description of the process of creating an index, should you need it.

However, we want to describe briefly how to create an index, because the process is relatively straightforward. First, it is best to save creating an index until near the very end of your writing project, because this step will add inline code to your document on every word that is indexed, and this code will make the text difficult to read. However, you can hide these marks by clicking the **Home** tab and then selecting **Show/Hide Paragraph Markings** (¶)**.**

When you are ready to create an index, you need to mark the entries for it and then build the index at the end of the manuscript, much like you would build a table of contents at the front.

To mark entries for the index

1. Highlight the word you want to include in your index.
2. On the **References** tab, in the **Index** group, click **Mark Entry**.
3. In the dialog box that appears, choose the options that correspond to your needs.



Mark Index Entry

Index

Main entry: floccinaucinihilipilification

Subentry:

Options

○ Cross-reference: *See*

● Current page

○ Page range

Bookmark:

Page number format

☐ Bold

☐ Italic

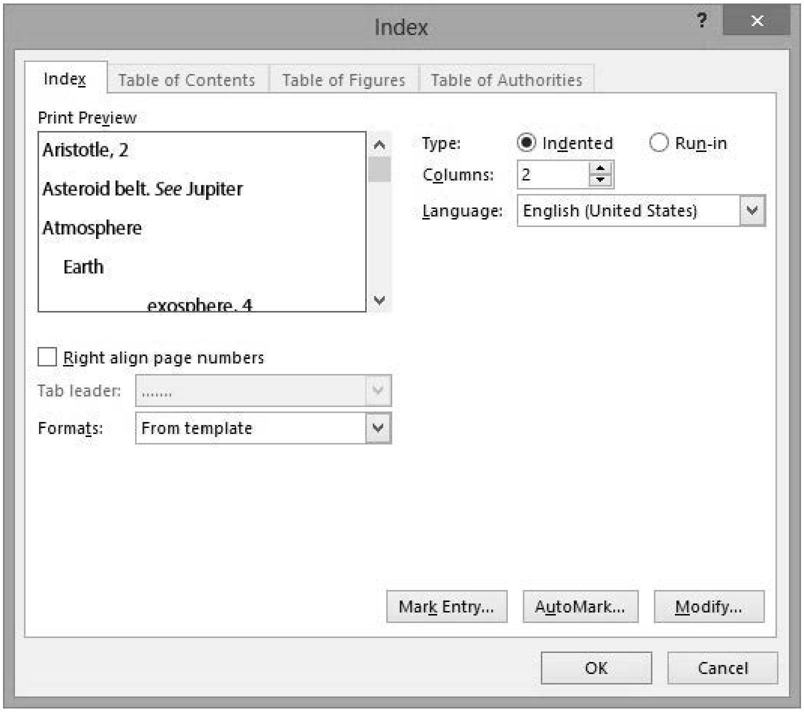
This dialog box stays open so that you can mark multiple index entries.

You can customize the index entry to include a subentry, and use Mark All to mark every instance of the selected text.

To insert the index

1. Place the cursor on the page and line where you would like the index to appear.
2. On the **References** tab, in the **Index** group, click **Insert Index** (🗎).

   Just like with any other automatically generated list, the index will be updated when you press **Ctrl+A** → **F9**.


Index
Index
Table of Contents
Table of Figures
Table of Authorities
Mark Entry...
AutoMark...
Modify...
OK
Cancel

Print Preview

Aristotle, 2
Asteroid belt. *See* Jupiter
Atmosphere
  Earth
    exosphere, 4

Type: ● Indented ○ Run-in
Columns: 2
Language: English (United States)

☐ Right align page numbers
Tab leader: ....
Formats: From template

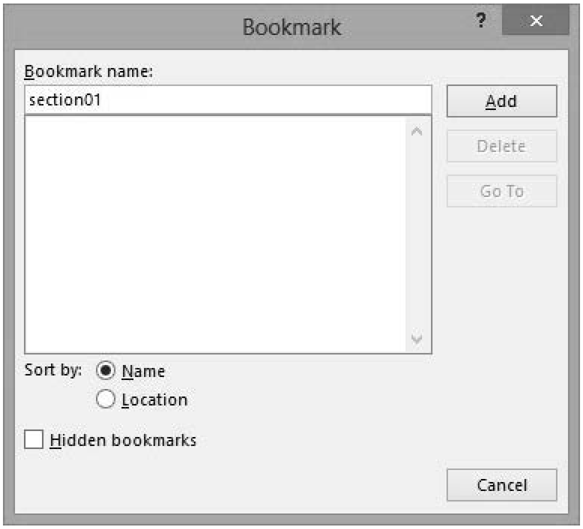
In the Index dialog box, you can choose the indentation, columns, and tab leaders for your index.

Use bookmarks for limited tables of contents

In some cases, you might want to include only a portion of text in your table of contents. For example, you might want to include a table of contents for each section of your document. You can achieve this with the table of contents feature available in Word 2013, by using bookmarks to include only a single chapter.

To create a section-based table of contents

1. Select the section of text that you want to use.
2. On the **Insert** tab, in the **Links** group, click **Bookmark**.
3. Type a name for your section, click **Add**, and then click **OK**.


Bookmark
?
×
Add
Delete
Go To
Cancel

Bookmark name: section01

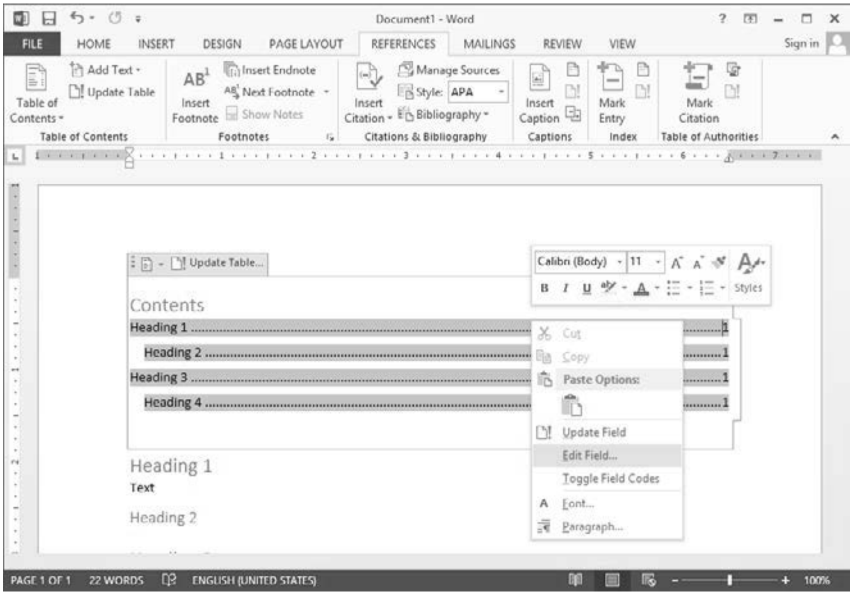
Sort by: ● Name ○ Location

☐ Hidden bookmarks

It is recommended that you choose descriptive names that will sort easily.

Table of Contents

4. Insert a table of contents where you would like it to appear (**References** ⇒ **Table of Contents**).
5. Select the entire table of contents (but not the title), right-click it, and then click **Edit Field**.


Document1 - Word
FILE
HOME
INSERT
DESIGN
PAGE LAYOUT
REFERENCES
MAILINGS
REVIEW
VIEW
Sign in
Table of Contents
Add Text
Update Table
Table of Contents
AB
Insert Footnote
Insert Endnote
Next Footnote
Show Notes
Footnotes
Insert Citation
Manage Sources
Style: APA
Bibliography
Citations & Bibliography
Insert Caption
Captions
Mark Entry
Index
Mark Citation
Table of Authorities
Update Table...
Calibri (Body)
11
Styles
Cut
Copy
Paste Options:
Update Field
Edit Field...
Toggle Field Codes
Font...
Paragraph...
PAGE 1 OF 1
22 WORDS
ENGLISH (UNITED STATES)
100%

Contents
Heading 1 1
Heading 2 1
Heading 3 1
Heading 4 1

Heading 1
Text
Heading 2

Make sure to select the entire table of contents, without the title.

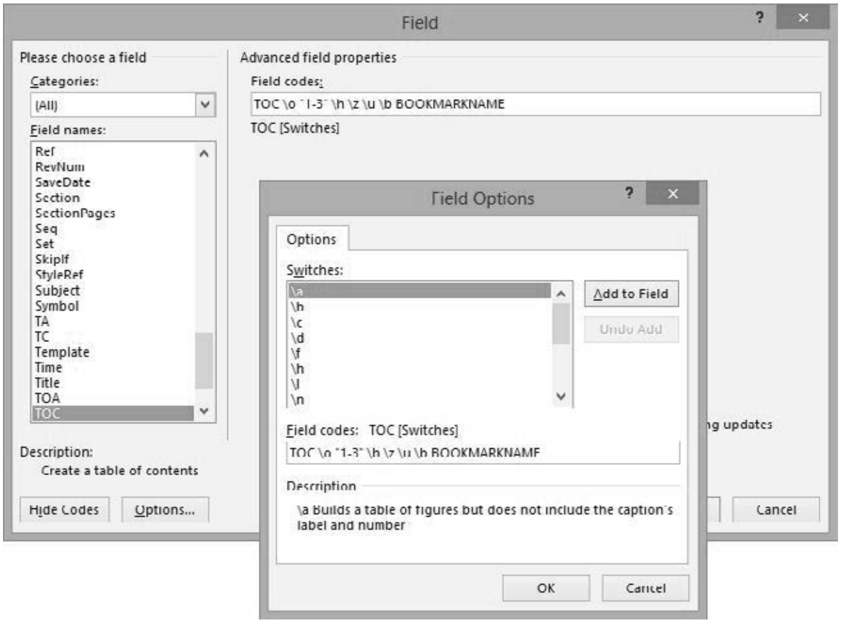
6. If **TOC** is not selected, close the window and make sure you have selected the entire table of contents (including the space at the end).

7. Click the **Field Codes** button in the lower-left corner.

8. Click the **Options** button.

9. In the **Field Options** dialog box that appears, select **\b** from the **Switches** list, and then click the **Add to Field** button.

10. In the **Field codes** box, type the name of the bookmark you created (replacing **BOOKMARKNAME**, in the example).



Field codes: TOC \o "1-3" \h \z \u \b BOOKMARKNAME

TOC [Switches]

Description: Create a table of contents

Field codes: TOC [Switches]

TOC \o "1-3" \h \z \u \b BOOKMARKNAME

Description

\a Builds a table of figures but does not include the caption's label and number

Field
Please choose a field
Categories:
(All)
Field names:
Ref
RevNum
SaveDate
Section
SectionPages
Seq
Set
SkipIf
StyleRef
Subject
Symbol
TA
TC
Template
Time
Title
TOA
TOC
Advanced field properties
Hide Codes
Options...
ng updates
Cancel
Field Options
Options
Switches:
\a
\b
\c
\d
\f
\h
\l
\n
Add to Field
Undo Add
OK
Cancel

By editing the field code switches, you can control the formatting and source of your table of contents.

11. Click **OK** in all dialog boxes.

Common formatting mistakes in headings

The most common typesetting mistakes pertaining to headings include:

- **Manually numbering headings instead of creating automated templates** Although this approach works for short documents, it defeats the idea of automatic generation of the table of contents and automatic heading numbering. It also eliminates the ability to cross-reference the heading in text.
- **Excessive switching of fonts** In most technical and scientific manuscripts, the font of the headings is the same as the font of the main text. Mixing serif and sans serif fonts in the same manuscript is generally not a good idea. Of course, if your publisher expects mixed fonts, follow the instructions.

Common stylistic mistakes for headings

The following example contains several common stylistic mistakes. An analysis of these mistakes is described after the example. This example contains intentional errors.

Design
1.1. Mechanical Design
1.2. Electrical design
1.2.1. Wiring
Software Design
Fabrication Of Parts

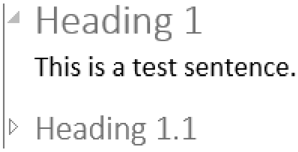
- **Problem 1: orphan headings** The term *orphan heading* means that the list of headings on a certain heading level has only one entry. For example, heading 1.2.1 in the example is an orphan. If there is no 1.2.2, then 1.2.1 should not exist. It is acceptable to have orphan headings during the writing stage, but it is important to make sure that no orphan headings exist in the final version of the manuscript.
- **Problem 2: inconsistent or incorrect capitalization** In the previous example, both words are capitalized in heading 1.1, but only the first word is capitalized in heading 1.2. Both capitalization schemes are frequently used, but writers should choose one and maintain consistency throughout the document by following a *style guide*.

  In heading 2 of the example, the word *Of* is capitalized. The American English standard is to lowercase prepositions and conjunctions (such as *and*, *of*, and *for*) and articles (such as *a* and *the*).

Tips and tricks

Collapse headings

If you use heading styles, you can hide the content below a heading by clicking the triangle next to the heading. This feature can be a quick and easy alternative to Outline view.



◢ Heading 1

This is a test sentence.

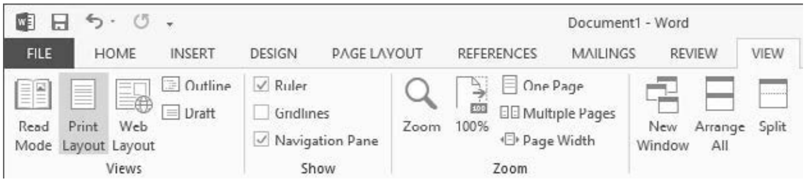
▷ Heading 1.1

Click the triangle next to a heading to collapse the heading and hide the text after it.

Maintain the table of contents until the last moment

Long journal papers and research proposals usually do not require tables of contents. However, your team might want to keep a table of contents in the manuscript until submission time. Doing so can help develop the structure of the manuscript as it evolves by presenting a navigation view of the document. You can delete the table of contents right before submission.

Alternatively, of course, you can use the Navigation pane, in addition to the Outline view, which are both easily accessible from the **View** tab of the ribbon.


Document1 - Word
FILE
HOME
INSERT
DESIGN
PAGE LAYOUT
REFERENCES
MAILINGS
REVIEW
VIEW
Read Mode
Print Layout
Web Layout
Outline
Draft
Views
Show
Zoom
100%
One Page
Multiple Pages
Page Width
Zoom
New Window
Arrange All
Split

☑ Ruler
☐ Gridlines
☑ Navigation Pane

The Outline view and the Navigation pane can help you (and your team) manage long and complex documents.

Alter the automatic spacing before and after headings

Normally, the heading styles include a certain amount of top and bottom padding. If the defaults do not suit your template, you should adjust the style settings to create the spacing you want. (You should avoid creating extra spacing by inserting blank lines.) By relying exclusively on your styles' before and after spacing, you can create a consistent and professional template that will maintain its look throughout its usage.

To adjust the spacing for the heading style

1. Click the **Home** tab.
2. Right-click an entry in the **Style** gallery corresponding to the heading of interest.
3. Click **Modify** ⇒ **Format** ⇒ **Paragraph**, and then change spacing as desired in the **Spacing** selection boxes.
4. Click **OK** in the open dialog boxes to return to editing mode.

Note Occasionally, formatting is not successful when you update your document. If this happens, try turning on the **Formatting** view in Word by clicking the paragraph symbol (¶). This view reveals hidden formatting commands in Word. From this view, confirm that you have selected all appropriate formatting elements, including those just before and just after the element you copied.

Recap

After completing this chapter, you should be quite proficient in several important aspects of document design. As you have seen, headings are tied to the structure and organization of documents, and using them properly is the key to making sure your front and back matter are assembled correctly.

By now, you should be able to

- Create headings
- Cross-reference headings
- Modify heading styles
- Use multilevel lists to organize your headings
- Enhance your headings with borders and shading
- Create page numbers and adjust their format
- Create tables of contents and limited, section-based tables of contents
- Create back matter, including appendices and indexes

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Index

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