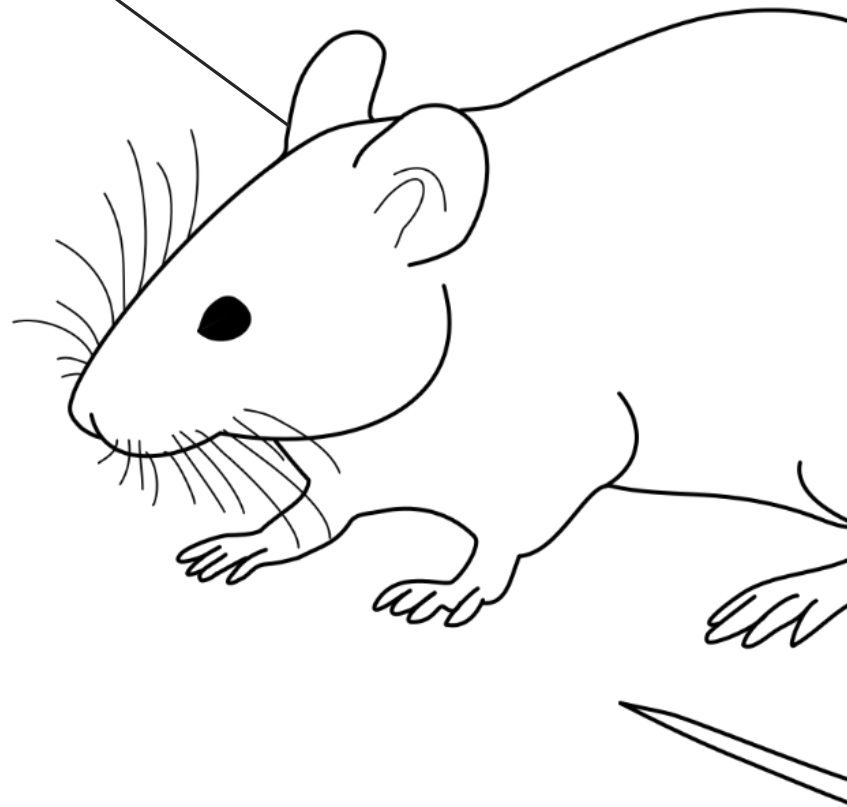# The Lab Rat's Guide to Word

By Paul Flamburis

Using Microsoft Word 2016 to Write College Lab Reports

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Acknowledgements
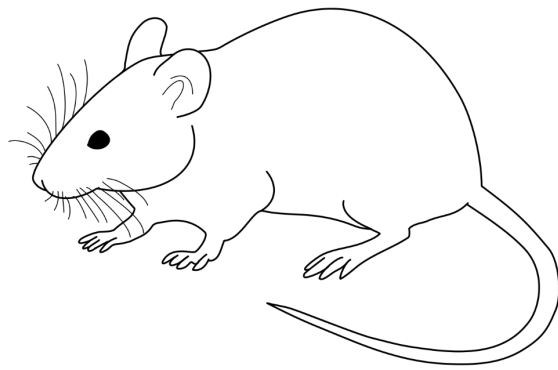
Introduction

Welcome to *The Lab Rat's Guide to Word*. This manual is designed to help college students use Microsoft Word 2016 for Windows to format their lab reports. If you're in college, you have a report due soon, and you're dreading the possibility of a coffee-fueled all-nighter, fear not: this guide shows you the quickest and easiest ways to complete various formatting tasks that are specific to lab reports. Whether you just want a quick change of font or a massive reduction of white space in your lab report, this manual has your back.

You can use this book in whatever way suits your needs. You may want to read it front-to-back, making yourself an expert on each task before you dive into your next lab report. These tasks include the following:

- Adding Page Numbers
- Inserting Equations
- Adding Captions to Figures
- Adding a Table of Contents
- (Just to name a few.)

You can also keep this book on your desk while you write, referring to it as you work through particularly frustrating formatting problems. Simply look up the type of formatting you need help with in the table of contents and flip to that section of the book to find your solution.

The Lab Rat's Guide to Word shows you the best pathways through the mazes that formatting tasks often become. With this manual, you can finish your lab reports in a timely manner without sacrificing quality or presentation whatsoever. Remember, the less time and energy you devote to formatting, the more you can devote to science.

Table of Contents

Chapter One:

Setting Up Your Document

Creating New Documents from Online Templates

Online templates allow you to start writing your lab report in a document that is already formatted in a way that meets your instructor's guidelines. For example, if your instructor requests a lab report in APA format, you can search for an APA style template and start a new document from that template.

1. Open Microsoft Word 2016. If you already have a document open in Microsoft Word 2016, save it and click the **File** tab in the upper left corner of the window.

2. Click on the **New** tab along the left side of the window that appears.
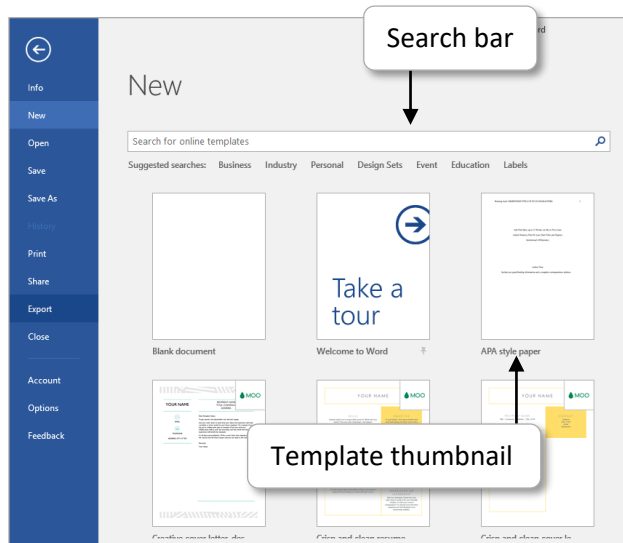
Figure 1. New Document Screen

3. Type a keyword related to the type of template you want to use into the search bar labeled "Search for online templates" (Figure 1) and press **Enter**. Thumbnails representing various online templates appear.

4. Click on a thumbnail in order to view a larger image of the template and a short description of the template.

5. Scroll through the template thumbnails until you find one that you want to use.

6. Click **Create** on the template you want to use. Microsoft Word opens a new document formatted with the chosen template.

> **Note:** To replace a template's placeholder text with your own, select the placeholder text and begin typing.

Adjusting Margin Width

Margins are areas of white space that border a page. If your margins are too wide, you won't be able to fit much text per page. If they are too narrow, your pages may appear too busy. Some instructors specify particular margin widths in their lab report guidelines.

1. Click on the **Layout** tab to display the Layout ribbon.

2. Click the **Margins** icon on the Layout ribbon (Figure 2). The Margins dropdown menu appears.

3. Click **Custom Margins** at the bottom of the dropdown menu. The Page Setup dialog box appears.

4. Select the number next to a margin you would like to adjust (Top, Bottom, Left, or Right) and type in the desired width, in inches (Figure 2). Microsoft Word 2016 automatically recognizes any number you type as a number of inches.
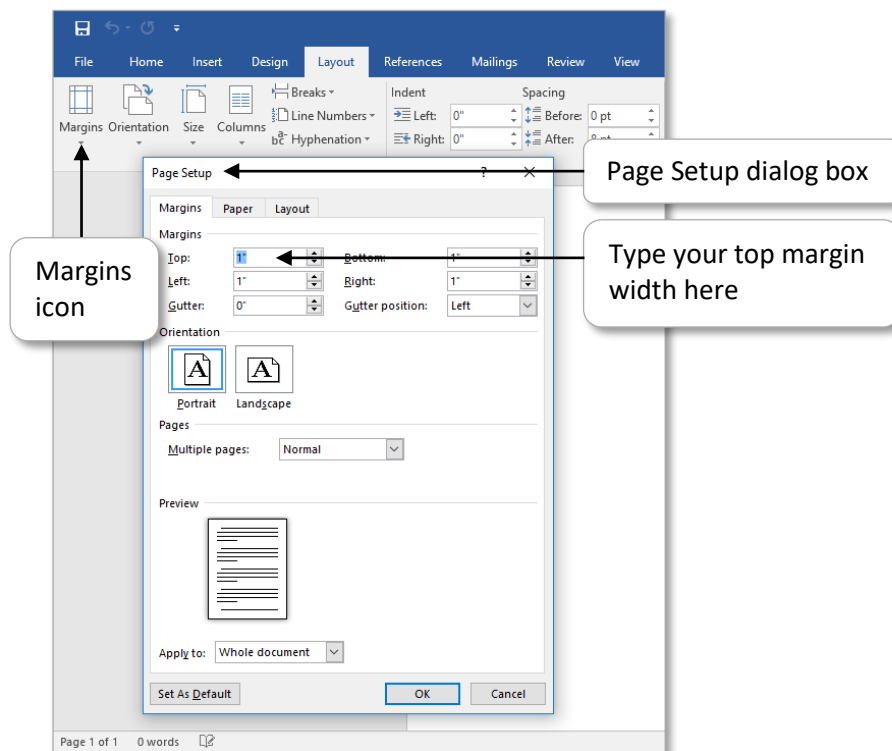
Figure 2. Page setup dialog box

5. Repeat step 4 for each margin you want to adjust.

6. Press **OK** at the bottom of the Page Setup dialog box to apply your adjustments.

Chapter Two:
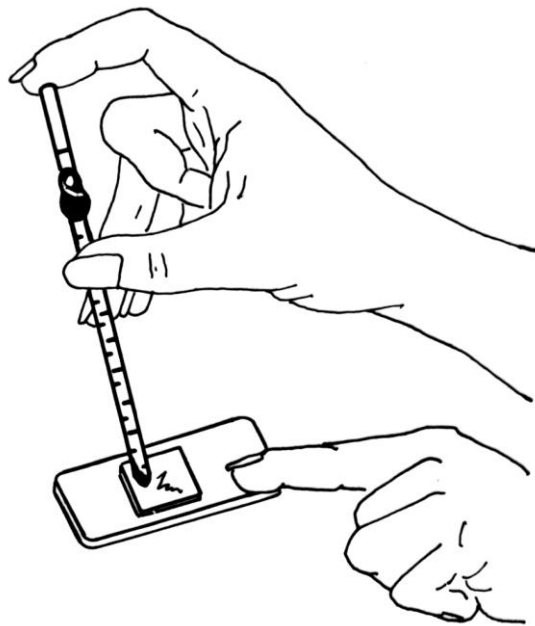
Editing Text

Changing Font and Font Size

Font is the style of your text, and font size is the size of your text. The legibility of your lab report depends greatly on the font and font size you choose for your text. Some instructors request specific fonts and font sizes in their lab report guidelines.

1. Select any text that you would like to change.

2. Click the **Home** tab to display the Home ribbon.

    > **Shortcut:** Press **Ctrl+A** to quickly select all text in the document.

3. Click on the arrow on the Font dropdown menu in the Font group of the Home tab (Figure 3). A list of fonts appears.

4. Scroll through the list of fonts until you find one you want to use. Click on the name of the font to change the selected text to that font.

5. Click on the number in the Font Size dropdown menu (Figure 3) to select it.

6. Type the font size you want to use and press **Enter** to change the selected text to that font size.

Figure 3. Font and Font Size drop-down menu locations

Changing Typographical Emphasis and Font Effects

Lab reports require the use of different types of typographical emphasis and font effects for different types of text. Scientific names of organisms, for example, are always in italic text. In chemical equations, some numbers are in subscript.

1. Select any text that you would like to change.

2. Click the icon for the corresponding font effect in the Font group of the Home ribbon (Figure 4).
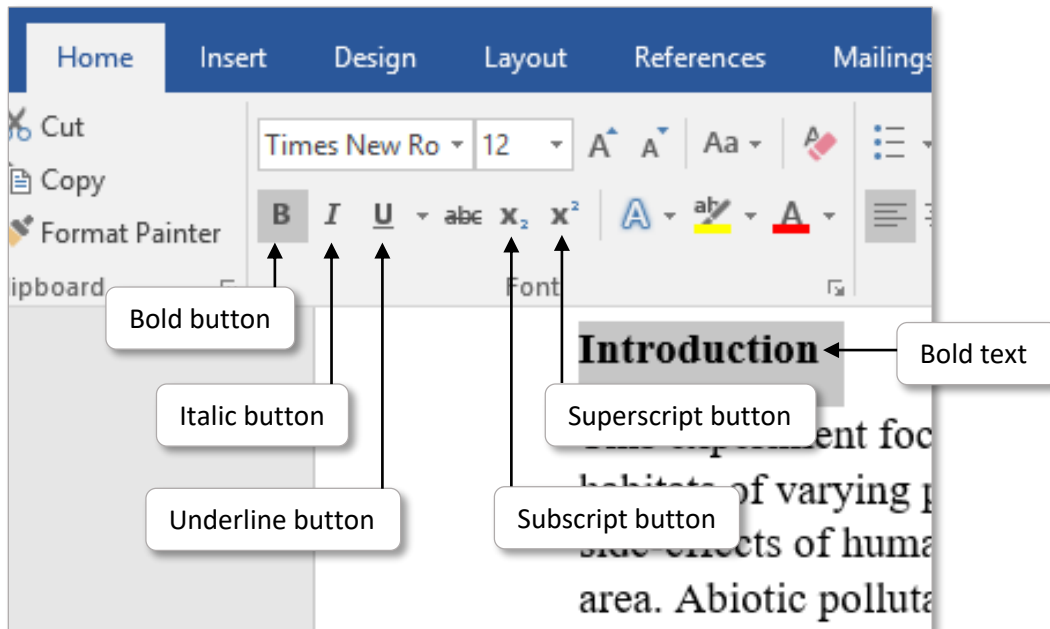
Figure 4. Example of bold text

Shortcuts:
Press **Ctrl+B** to bold selected text.
Press **Ctrl+I** to italicize selected text.
Press **Ctrl+U** to underline selected text.
Press **Ctrl+=** to make selected text subscript.
Press **Ctrl+Shift++** to make selected text superscript.

Chapter Three:

$$E = mc^2$$

Formatting Scientific and Mathematical Content

Inserting Equations

Lab reports often require you to write equations that you cannot create with the alphanumeric keyboard. For example, if you use the quadratic formula at some point during data analysis, you may have to write the quadratic formula in your lab report. You can quickly insert some equations, such as the quadratic formula, as Built-In equations, or you can write equations yourself using the Equation Tools menu.

Built-In Equations

1. Click on the **Insert** tab to display the Insert ribbon.

2. Click on the arrow next to the **Equation** icon on the Insert ribbon.

3. Scroll through the Built-In equations at the top of the Equation dropdown menu (Figure 5) and click on the equation you want to insert. The equation appears in the document.
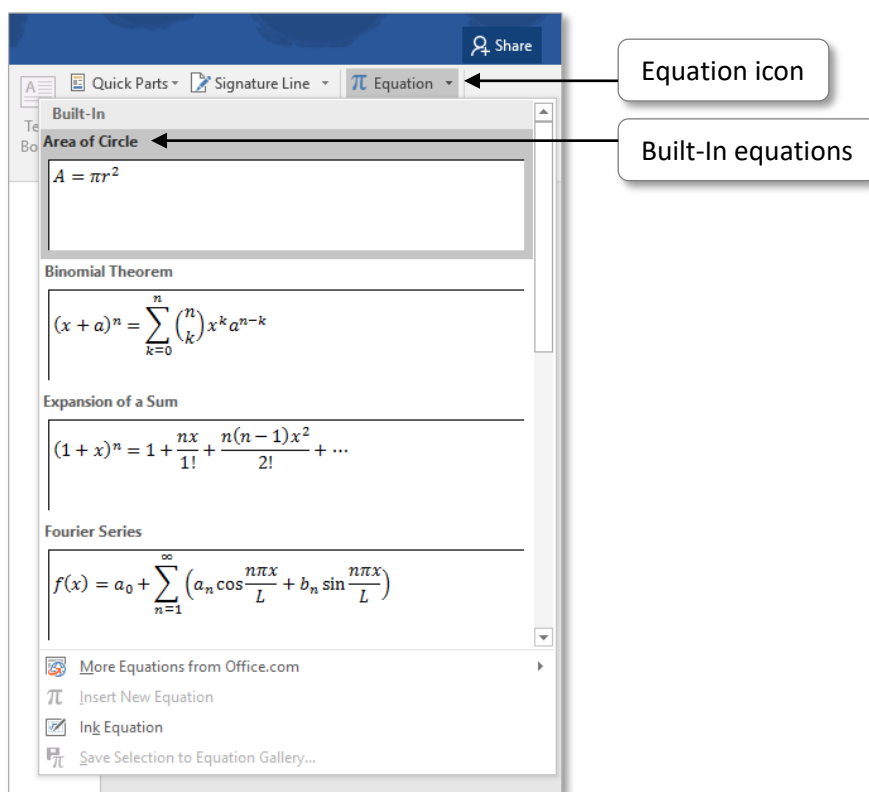
Figure 5. Equation dropdown menu

Equation Tools

1. Click on the **Insert** tab to display the Insert ribbon.

2. Click the **Equation** icon on the Insert ribbon. The Equation Tools menu appears (Figure 6). A box containing the words "Type equation here" appears in the document.

> **Shortcut:** Press **Alt+=** to open the Equation Tools menu.

3. Create your equation by writing alphanumeric characters, inserting symbols, and inserting mathematical structures.

   - To write alphanumeric characters in your equation, select the equation and begin typing.

   - To insert symbols into your equation, click on an icon in the Symbol group.

   - To insert mathematical structures into your equation, complete the following steps:

     i. Click an icon in the Structures group to view thumbnails of mathematical structures.

     ii. Click on a thumbnail to insert the corresponding structure into your equation.

     iii. Select any dotted square in the mathematical structure and begin typing to replace it with alphanumeric characters.
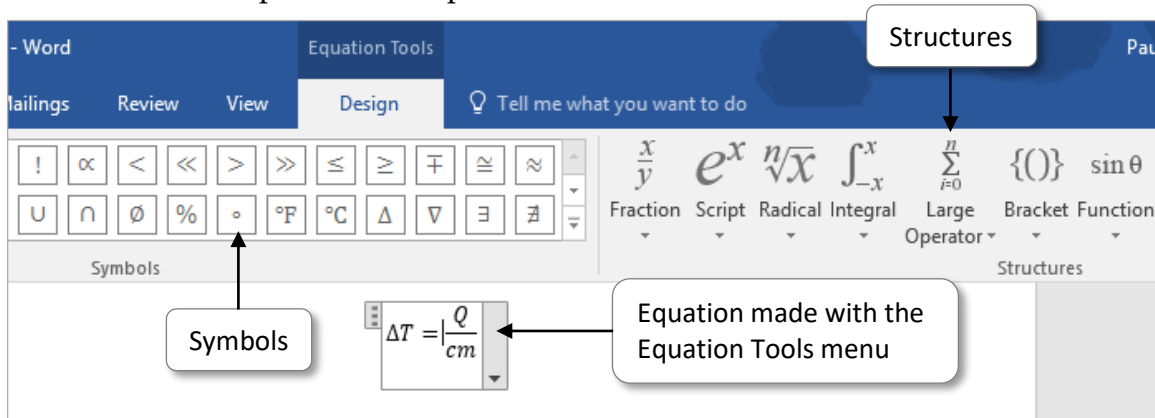
Figure 6. Equation Tools menu

Adding Scientific Terminology to the Microsoft Word Dictionary

Lab reports often require the use of scientific words that the Microsoft Word 2016 dictionary may not recognize. If the Microsoft Word 2016 dictionary does not recognize a word, it identifies it as incorrect with red markup. You can remove unnecessary red markup by adding unrecognized scientific words to the Microsoft Word 2016 dictionary.

1. Select a word in your document that Microsoft Word 2016 has identified as incorrect with red markup.

2. Make sure you have spelled the word correctly by checking it against a credible source.

Note: If the word you add to the dictionary is a common noun with the first letter capitalized, you must repeat these steps with another instance of the word in which the first letter is not capitalized.

3. Right click on the selected word.

4. Click **Add to Dictionary** (Figure 7). The red markup beneath the word disappears on all instances of the word in your document.

Scientific name which Microsoft Word does not recognize
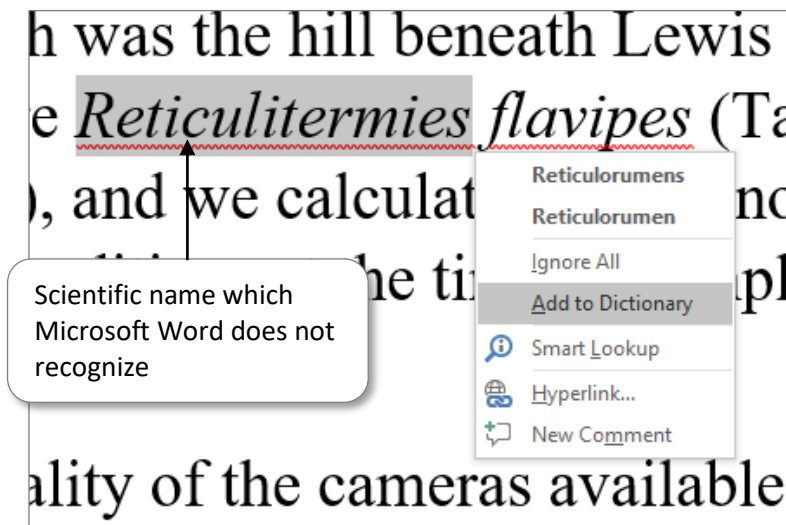
Figure 7. Adding a scientific name to the Microsoft Word dictionary

Chapter Four:
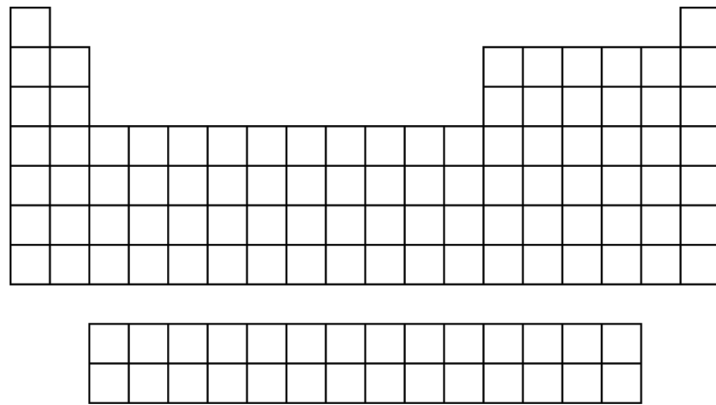
Inserting and Positioning Figures

Inserting Tables with Headers

Tables provide an organized way to present the data you gathered in your research to readers of your lab report. For example, if you are conducting a study on biodiversity in a particular region, you may want to include a table recording how many organisms of each species you counted. To create a header on your table, you must combine the top cells after you create the table.

Inserting a Table

1. Click the **Insert** tab to display the Insert ribbon.

2. Click the **Table** icon in the Tables group. The Table dropdown menu appears.

3. Click **Insert Table** in the Table dropdown menu (Figure 8). The Insert Table dialog box appears.
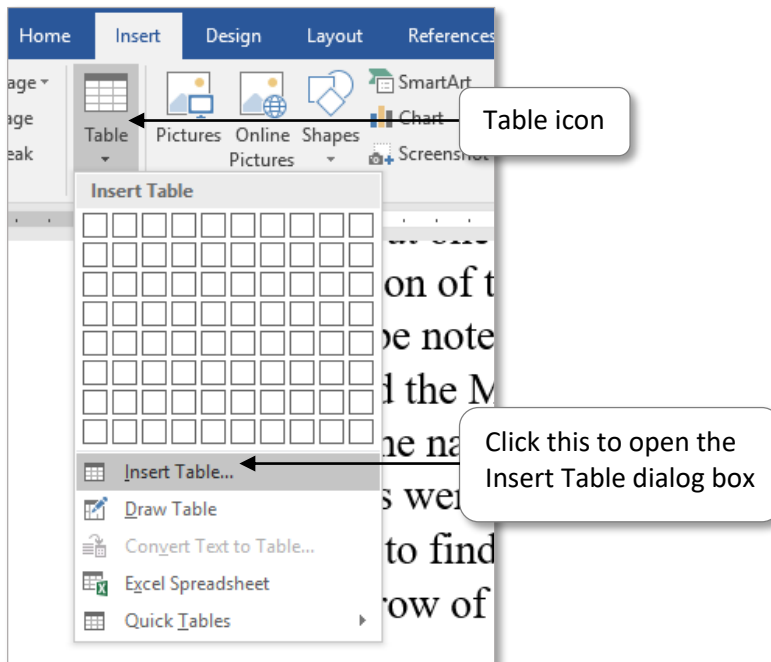
Figure 8. Table dropdown menu

4. Type the number of columns you want in your table into the **Number of columns** field under Table size.

5. Type the number of rows you want in your table into the **Number of rows** field under Table size.

6. Click **Ok**. The Table Tools menu opens and a table appears in your document.

7. Click in each cell and begin typing to write in the table.

Adding a Heading to a Table

1. Click and drag over the top row of cells to select it.

2. Click the **Layout** tab in the Table Tools menu.

3. Click **Merge** to combine selected cells into a single cell (Figure 9).

4. Click in the cell and begin typing to write in the heading.
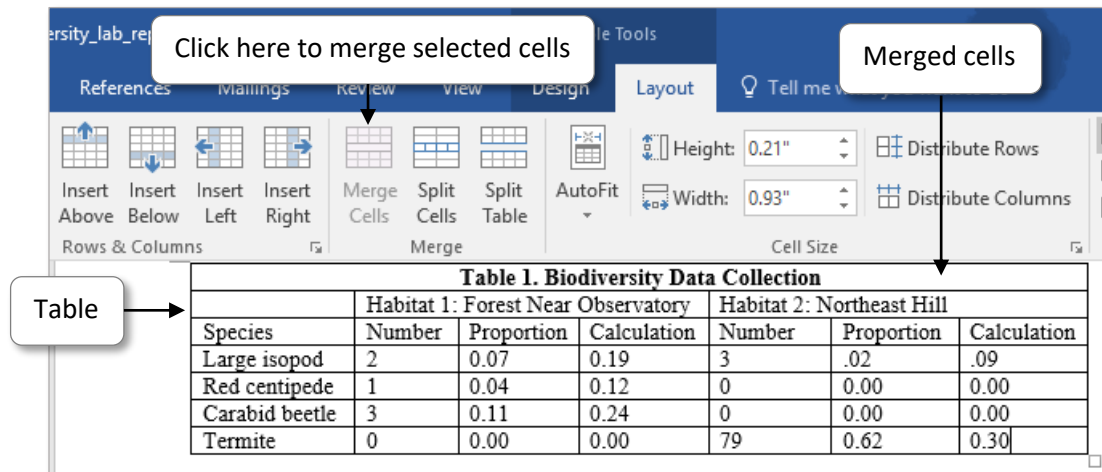
Figure 9. Table with merged cells in rows 1 and 2

Inserting Pictures

Pictures give readers of your lab reports a clearer sense of the procedures and subjects that you describe in the text itself. For example, you may want to add actual photographs of experiments in progress, microscope images, or labeled diagrams.

1. Click the **Insert** tab to display the Insert ribbon.

2. Click **Pictures** in the Illustrations group (Figure 10). File Explorer opens.

Click here to launch File Explorer
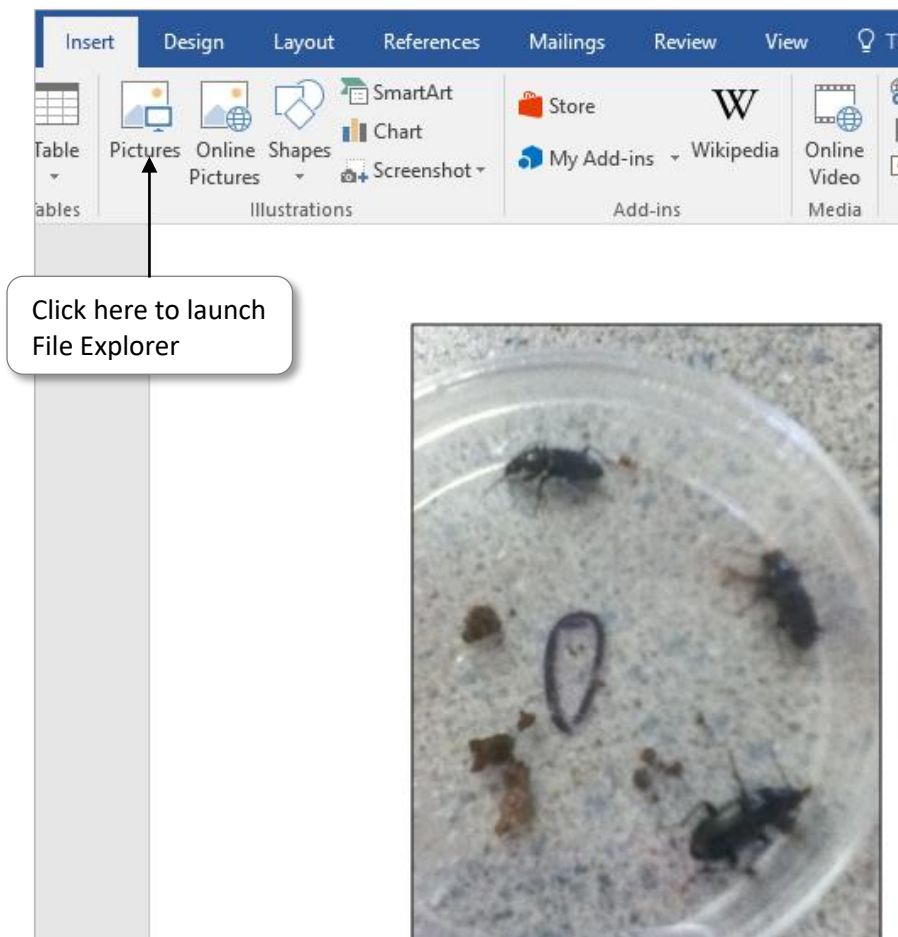
Figure 10. Photograph of insect biodiversity inserted into a document

3. Locate the picture you want to insert and select it.

4. Click **Insert**. The picture appears in your document at the location of the cursor.

Adding Captions to Figures

Lab reports often require all figures to include numbered captions which describe the figure. Numbered captions also allow you to cross-reference figures more easily in the report itself. You can insert these captions as text boxes.

1. Select the figure you want to add a caption to.

2. Click the **References** tab to display the References ribbon.

3. Click **Insert Caption** in the Captions group of the References ribbon. The Caption dialog box appears (Figure 11).
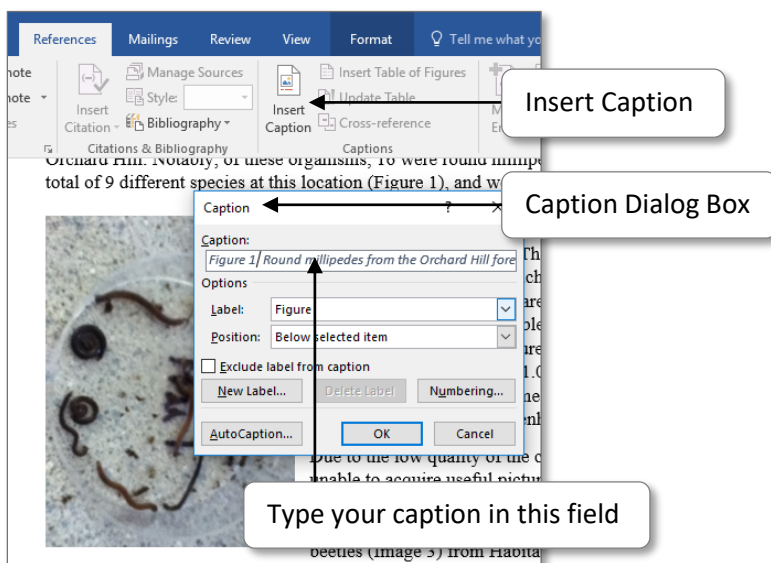
Figure 11. Adding a caption to a picture

4. Type your caption into the field under Caption.

5. Select **Figure** in the dropdown menu next to Label.

6. Select whether you want your caption to appear above or below the figure in the dropdown menu next to Position.

7. Click **OK**. Your caption appears as a text box above or below the figure.

Wrapping Text Around Pictures and Text Boxes

By default, Microsoft Word inserts pictures in line with the surrounding text, which means text stops before the image and continues after the image. Images that are in line with surrounding text can generate large amounts of unintentional white space and make your lab report look disorganized. By wrapping text around your pictures, you can use the space on each page more efficiently and make your lab report look cleaner. You may also have to wrap text around any text boxes you are using to caption your figures.

1. Select the picture or text box you want to wrap text around. The Layout Options icon appears next to the upper-right corner of the picture.

2. Click the **Layout Options** icon. The Layout Options menu appears.

3. Click **Square** (Figure 12). Nearby text flows around the selected picture.

4. Reposition the picture as needed by clicking and dragging it or by nudging it with the arrow keys. As you move the picture or text box, text continues to flow around it.
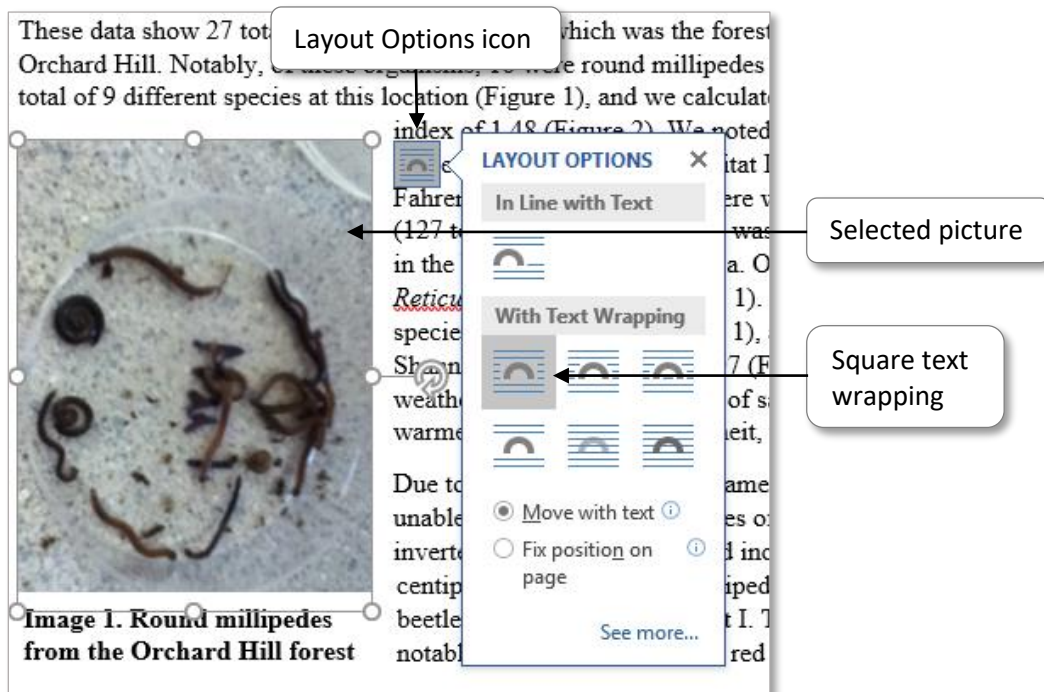
Figure 12. Picture with Square text wrapping

Chapter Five:
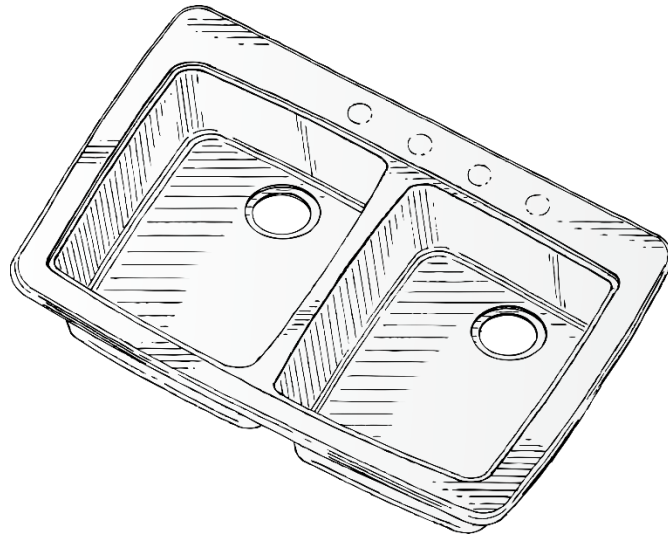
Finalizing Your Document

Adding Page Numbers

Page numbers allow you to cross-reference between sections of your lab report and allow readers to find specific sections of your lab report. If your lab report contains a table of contents, you must add corresponding page numbers so your readers can navigate the report.

1. Click on the **Insert** tab to display the Insert ribbon.

2. Click **Page Number** (Figure 13) in the Header & Footer group of the Insert ribbon. The Page Number dropdown menu appears.

3. Select whether you want your page numbers at the top of the page or the bottom of the page (Figure 13).

   - If you want to add page numbers to the top of the page, hover your mouse over **Top of Page.** A list of options for page number positioning appears (Figure 13).

   - If you want to add page numbers to the top of the page, hover your mouse over **Bottom of Page.** A list of options for page number positioning appears.
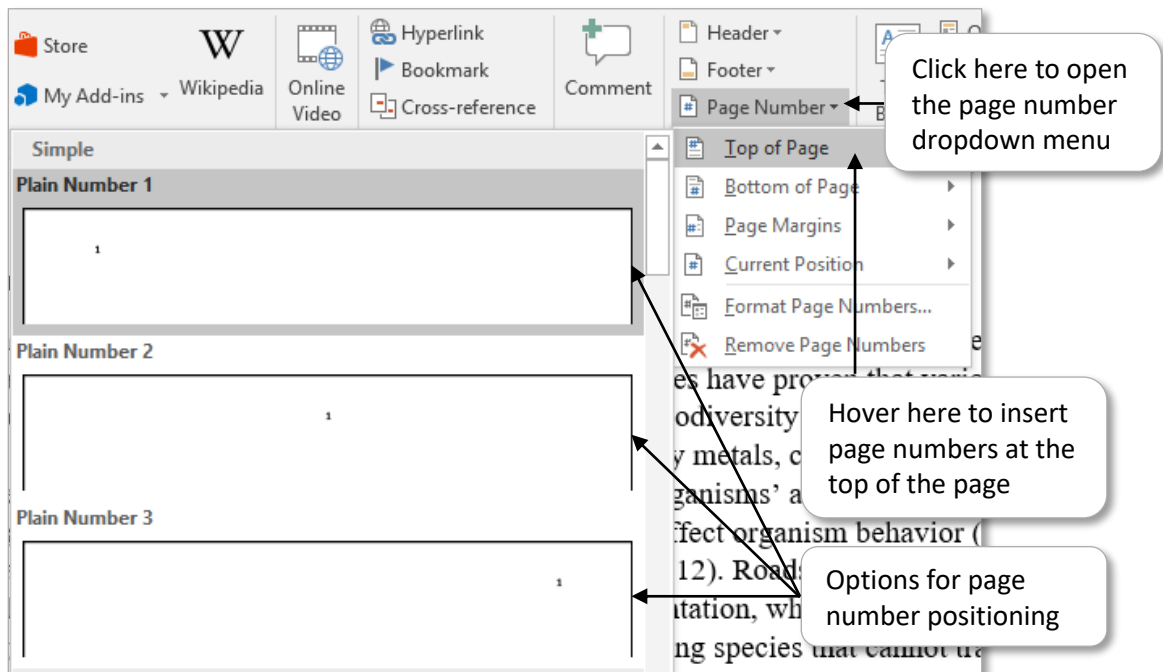
Figure 13. Selecting page number position

4. Select whether you want your page numbers to be on the left side of the page, centered on the page, or on the right side of the page (Figure 13). After you select the page number position, page numbers appear on your document and the Header & Footer Tools menu opens.

- If you want you page numbers to be on the left side of the page, click **Plain Number 1.**

- If you want you page numbers to be centered on the page, click **Plain Number 2.**

- If you want you page numbers to be on the right side of the page, click **Plain Number 3.**

5. Adjust the font and font size of your page number to your liking. For more information on this task, see "Changing Font and Font Size."

6. Double click anywhere in the body of your document to exit the Header & Footer Tools menu.

Note: You must use the Header & Footer tools menu to adjust the font and font size of your page numbers. You can re-enter the Header & Footer Tools menu at any time by double clicking on a header or footer.

Removing Page Numbers from Front Matter

Some instructors require that your lab reports include cover pages. If your lab report includes front matter before the report itself, such as a cover page, you must start your page numbering on a page that is not the first page of the document.

1. Remove any page numbers that are currently on the document.

    i. Click on the **Insert** tab.

    ii. Click **Page Number** in the Header & Footer group of the Insert ribbon and select **Remove Page Numbers**.

2. Click on the last page of your front matter, below all text on that page, to place your cursor there.

3. Click on the **Layout** tab to display the Layout ribbon.

4. Click **Breaks** in the Page Setup group of the Layout ribbon and select **Next Page**, under Section Breaks (Figure 14). The cursor moves to the next page.
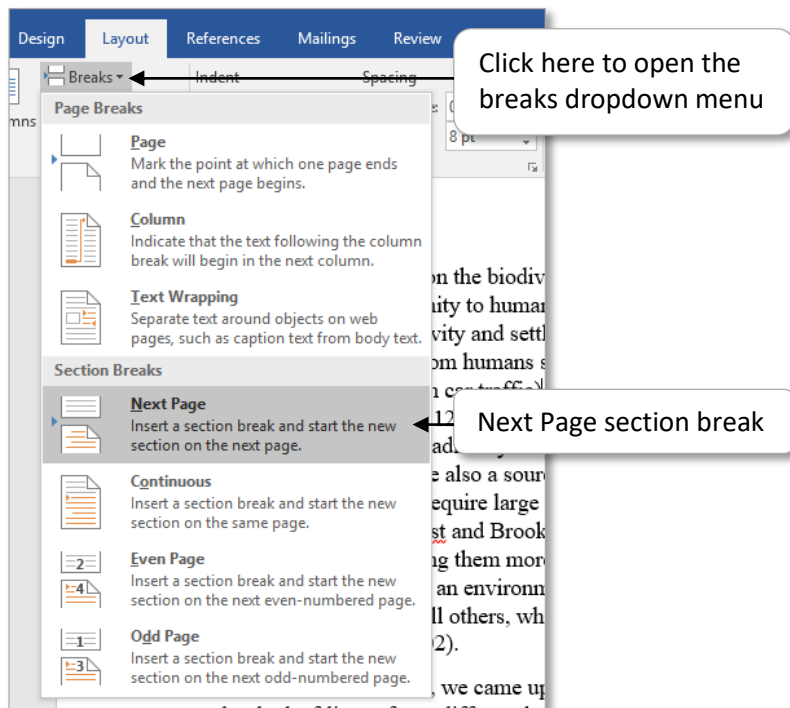

Figure 14. Creating a section break on the next page

5. Double click on the header or footer to open the Header & Footer Tools Menu.

   - If you want to add page numbers to the top of your document, double click on the header area of a page.

   - If you want to add page numbers to the bottom of your document, double click on the footer area of a page.

6. Click **Link to Previous** in the Navigation group of Header & Footer Tools menu to de-select it (Figure 15).
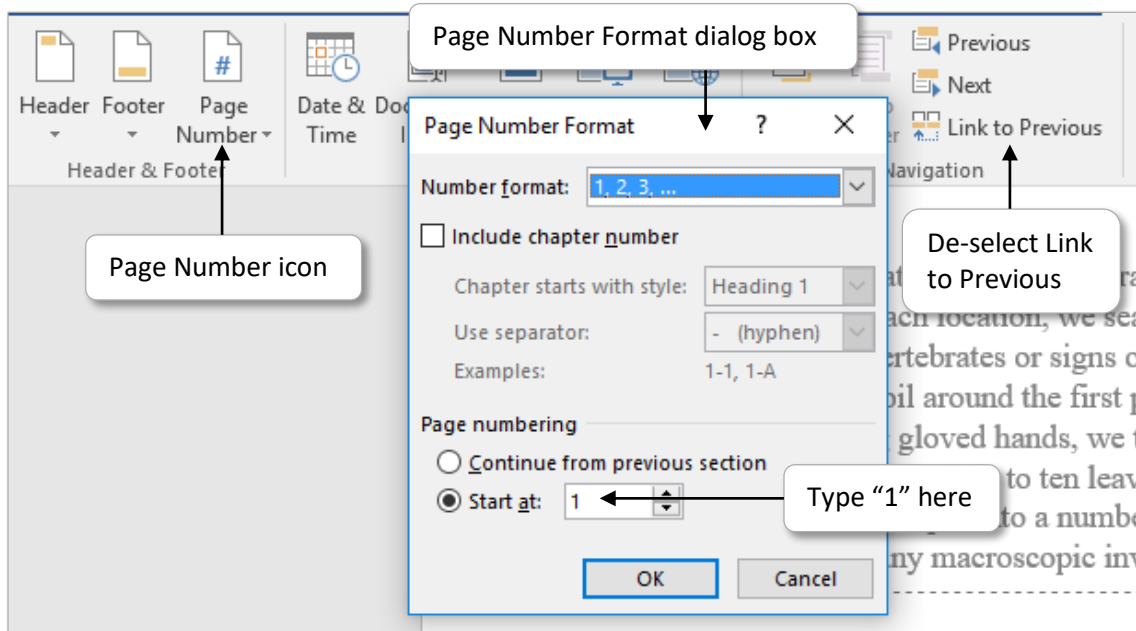
Figure 15. Starting page numbering mid-document

7. Click the **Page Number** icon in the Header & Footer group of the Header & Footer Tools menu and add a page number at the desired position. For more information on this task, see steps 3-5 in "Adding Page Numbers."

8. Click the **Page Number** icon again and select **Format Page Numbers**. A dialog box labeled Page Number Format appears (Figure 15).

9. Click the radio button next to **Start At** and type "1" into the box on the right.

10. Click **OK** at the bottom of the dialog box to apply your changes. Page numbering now begins at 1 on your first content page.

Adding a Table of Contents

Tables of contents are essential to the navigation of longer lab reports, especially if the reader wants to skip around between multiple sections. While it is possible to write a table of contents manually, it is often quicker and easier to generate one using the References tab. In order to do this, you must first apply the same style to the headings of all sections of your report.

Setting a Heading Style

1. Adjust the style of one of your section headings to your liking. For more information on this, refer to "Changing Font and Font Size" and "Changing Typographical Emphasis and Font Effects."

2. Select the heading you have adjusted.

3. Click the **Home** tab to display the Home ribbon.

4. Click the dialog box launcher on the right side of the Styles group to open the Styles menu.

> **Shortcut:** Press **Alt+Ctrl+Shift+S** to open the Styles menu.

5. Click the New Style icon (Figure 16) to open the Creating New Style from Formatting dialog box.
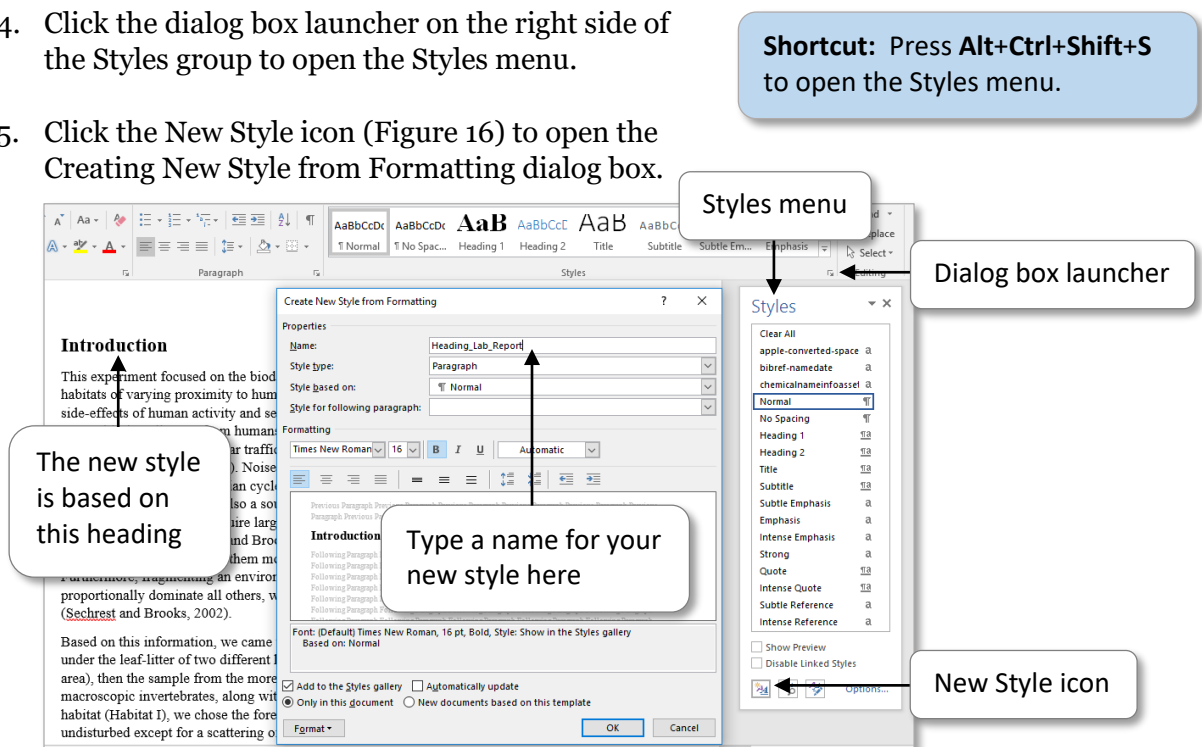

Figure 16. Creating a new style

6. Type a recognizable name for your heading style into the field next to Name.

7. Click **OK**. Your new heading style appears in the list of styles in the Styles menu.

8. Select another section heading in the lab report.

9. Click on your new heading style in the Styles menu to apply that style to the selected heading.

10. Repeat steps 8 and 9 for each section heading in the lad report.

Inserting a Custom Table of Contents

1. Click the **References** tab to open the References ribbon.

2. Click the **Table of Contents** icon (Figure 17) in the Table of Contents group of the References ribbon to open the Table of Contents dropdown menu.

3. Click **Custom Table of Contents**. The Table of Contents dialog box opens.

4. Click **Options**. The Table of Contents Options dialog box opens.

5. Delete all numbers in all fields under TOC level.

6. Scroll through the list of available styles until you find the heading style you used for your lab report.

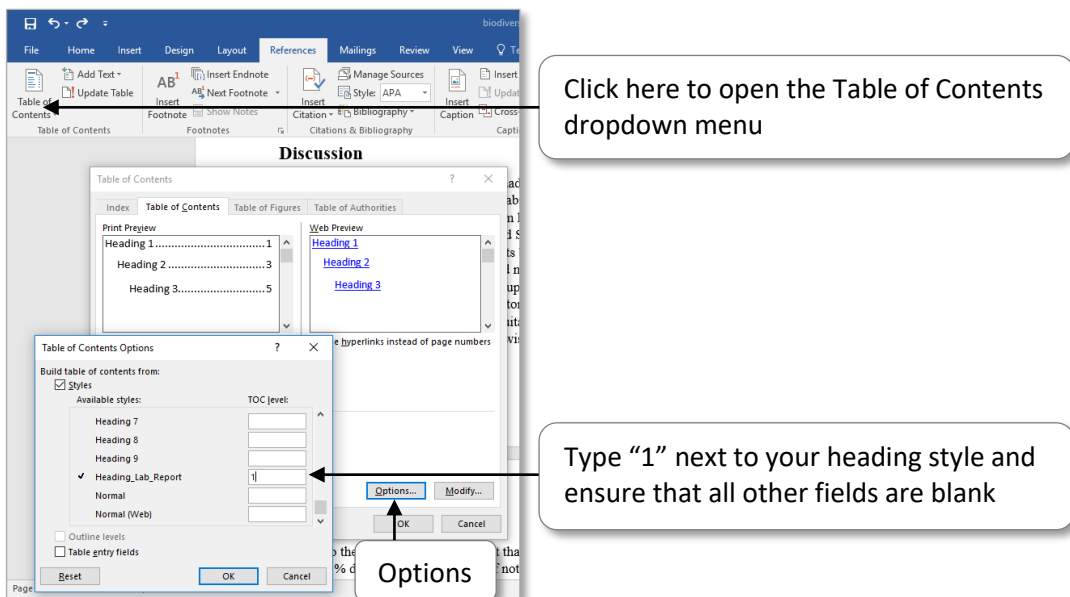7. Type "1" in the field that corresponds to your heading style under TOC level (Figure 17).

Figure 17. Table of Contents Options dialog box

8. Click **OK**. The Table of Contents Options dialog box closes.

9. Click **OK**. The Table of Contents dialog box closes and a table of contents appears in your document.

Printing Your Lab Report

Once you have finished writing your lab report, if your instructor requests a physical submission, you must print it. Before completing these steps, go back through your lab report and carefully check for errors. This saves time, paper, ink, and, if you are paying for printing, money.

1. Ensure that your computer is connected to a printer and the printer is on.

2. Click the **File** tab to open the File menu.

3. Click **Print** to open the Print menu.

   > **Shortcut:** Press **Ctrl+P** to open the Print menu.

4. Click the dropdown menu under Printer and select the printer you want to print from.

5. Click the first dropdown menu under Pages and select whether you want to print on one side or both sides of the page.

6. Click **Print** (Figure 18).
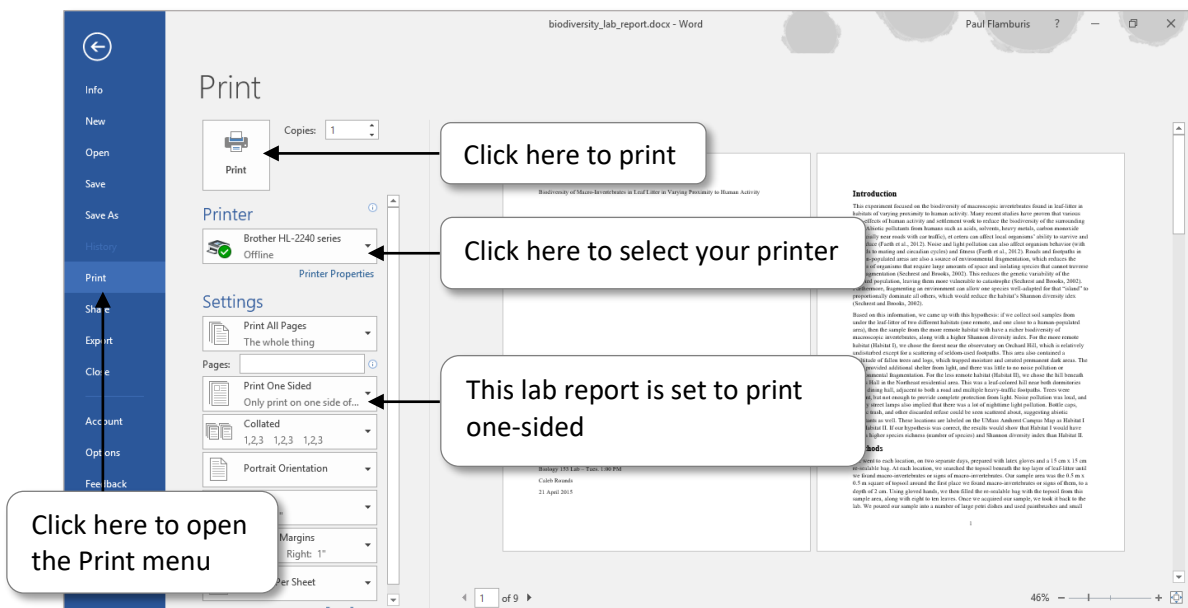
Figure 18. Print Menu

Appendix

List of Keyboard Shortcuts

Function	Shortcut
Select all text in the document.	**Ctrl**+**A**
Bold selected text.	**Ctrl**+**B**
Italicize selected text.	**Ctrl**+**I**
Underline selected text.	**Ctrl**+**U**
Make selected text subscript.	**Ctrl**+=
Make selected text superscript.	**Ctrl**+**Shift**++
Open the Equation Tools menu.	**Alt**+=
Open the Styles menu.	**Alt**+**Ctrl**+**Shift**+**S**
Open the Print menu.	**Ctrl**+**P**