

EXCEL 2016 – BASICS PART 3

Participant Guide



Professional
Development
& Training

EXCEL 2016 – BASICS PART 3

Target Audience: This class was designed to meet the needs of new Excel 2016 users.

Time Allotted: 3 hours

Objectives:

Overall: At the end of this course you will be able to create and manage data in worksheets and workbooks using Excel 2016.

Specific: Participant will...

- Create a workbook using a template
- Craft a custom template
- Identify different types of data
- Discover how to rotate cell data
- Manage data using the Data tab
- Practice Flash Fill functionality for data
- Transpose data in columns and rows
- Share and protect worksheets and workbooks

Welcome and Agenda

Notes

- Housekeeping
- Introductions
- Templates and Custom Templates in Excel 2016
- Data Types
- Rotate Cell Data
- Manage Data Using the Data Tab
- Flash Fill
- Data Validation
- Goal Seek
- Transpose Columns and Rows
- Share and Protect Worksheets and Workbooks
- Questions and Answers

Introduction Activity

Notes

Please tell us:

1. *Your Name*
2. *Your Department*
3. *What you hope to get out of today's session*

Create A Workbook from a Template

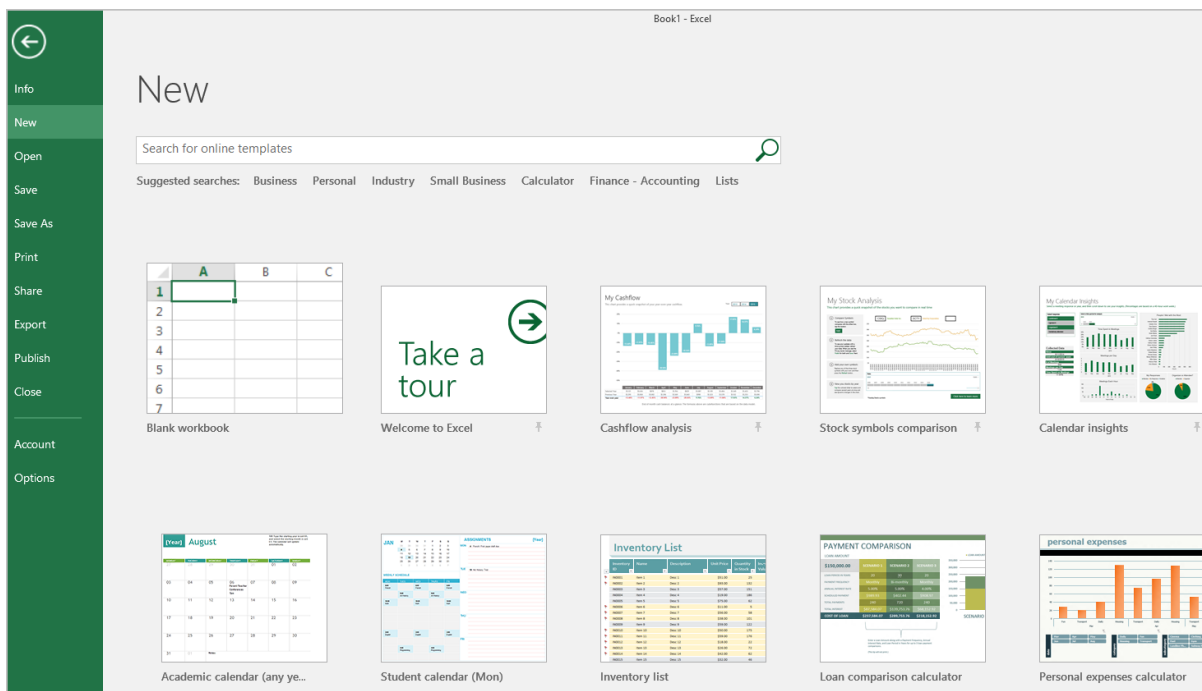
Notes

Templates are files where the hard work has been done for you, saving you from having to start with a blank page. They are a great way to save time and create consistent Excel documents. When possible, use a template that already has the look and feel that you want, with placeholders that you can change to tailor it for your current needs.

To Find and Open an Excel Template

1. Click on the File tab.
2. Scroll down and select New.

TIP: Take time to explore the available templates. You can narrow your search by clicking on the suggested searches, such as Budget, Invoice, and Calendars. You can also type in the **Search for online templates** to find additional Excel templates.



Exercise #1 : Create a Personal Template

Notes

1. Open a new Microsoft Excel workbook.
2. Merge and center cells **A1 – F1**.
3. In your new merged cell, add the title Weekly Work Hours.
4. In cells **A2** through **A6** enter Monday through Friday.
5. Highlight all of the cells **A1** through **F6** and apply a **Style** (the **Style** group is found on the **Home** tab).
6. Make other format changes as you wish.
7. Click on the **File** tab and then click on **Save As**.
8. Click on the **Browse** button.
9. In the **Save As** dialog box select **Excel Template** from the **Save as type** drop-down list.
10. Rename your work book Weekly Work Hours.
11. Select **Save**.
12. Click on the **File** tab and then **Close**.
13. Click on the **File** tab and then **New**.
14. Click on **PERSONAL**.
15. Open your saved template Weekly Work Hours.

NOTE: When using a template, use **Save As** and select the appropriate folder on your computer. If you have added data to a template and click on the **Save** icon, Excel will not overwrite your template. It will open the **Save As** dialog box.

Data Types

Notes

Data in an Excel worksheet cell will be one of three types: labels, values, or formulas.

- Labels (text) are descriptive pieces of information such as names, months, or other identifying statistics. They usually include alphabetic characters.
- Values (numbers) are generally raw numbers or dates.
- Formulas are instructions for Excel to perform calculations.

How Excel aligns the data by default depends on what type of data it is.

- **Label:** Excel aligns text to the left side of the cell. If the text is too wide to fit, Excel extends that data past the cell width if the next cell is blank. If the next cell is not blank, Excel displays only enough text to fit the display width. Widening the column displays additional text. To enter a numerical value or formula as a label, type an apostrophe before it.
- **Whole value:** If the data is a whole value, such as 34 or 5763, Excel aligns the data to the right side of the cell.
- **Value with a decimal:** If the data is a decimal value, Excel aligns the data to the right side of the cell, including the decimal point, with the exception of a trailing 0. For example, if you enter 246.75, then 246.75 is displayed. If you enter 246.70, however, 246.7 appears.
- **Date:** If you enter a date, such 12/16, Dec 16, or 16 Dec, Excel automatically returns the value in your default date format (16-Dec if you haven't changed it) in the cell, but the Formula bar displays 12/16/2016 (or the current year). Dates are aligned to the right.

If a value displays as scientific notation (such as 1.23E+11) or number signs (#####), it means the value is too long to fit into the cell. You need to widen the column.

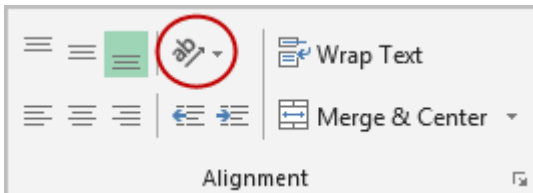
Rotate Cell Data

Notes

Use the **Orientation** button on the **Home** tab to rotate data in cells. You can rotate data clockwise, counterclockwise, or vertically. Use the **Format Cells** dialog box to set a more precise orientation by specifying the number of degrees to rotate the text.

To Rotate Cell Data

1. Select the cells you want to format.
2. On the **Home** tab, in the **Alignment** group, click the **Orientation** button.



3. Choose an option:
 - **Angle Counterclockwise:** Angles the text in the cell from bottom left to top right.

	Tomatoes	Potatoes	Corn	Beets	Carrots
Smith	53	60	48	35	95
Santis	60	75	53	30	75
Li	45	67	60	40	82
Pierre	55	59	63	38	79
Merchant	62	70	50	35	80

- **Angle Clockwise:** Angles the text in the cell from top left to bottom right.

	Tomatoes	Potatoes	Corn	Beets	Carrots
Smith	53	60	48	35	95
Santis	60	75	53	30	75
Li	45	67	60	40	82
Pierre	55	59	63	38	79
Merchant	62	70	50	35	80

- **Vertical Text:** Centers the text and places one letter on top of the other.

	T o m a t o e s	P o t a t o e s	C o r n	B e e t s	C a r r o t s
Smith	53	60	48	35	95
Santis	60	75	53	30	75
Li	45	67	60	40	82
Pierre	55	59	63	38	79
Merchant	62	70	50	35	80

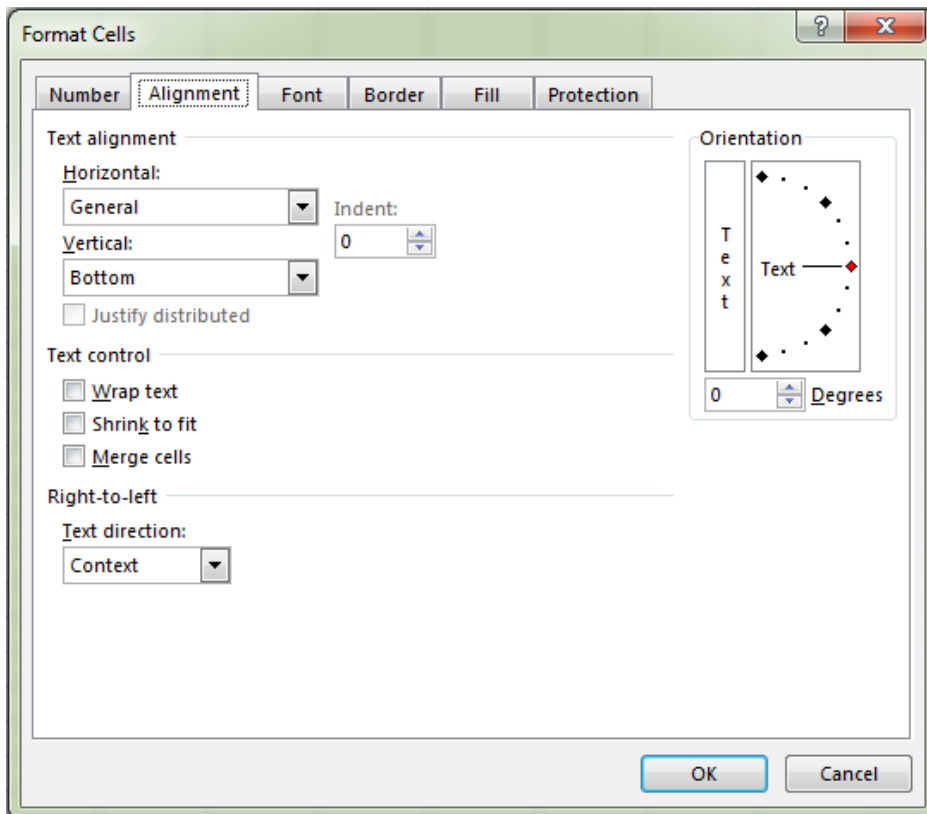
- **Rotate Text Up:** Places the text on the lower-right side of the cell and runs it vertically up the cell.

	Tomatoes	Potatoes	Corn	Beets	Carrots
Smith	53	60	48	35	95
Santis	60	75	53	30	75
Li	45	67	60	40	82
Pierre	55	59	63	38	79
Merchant	62	70	50	35	80

- **Rotate Text Down:** Places the text on the lower-left side of the cell and runs it vertically down the cell.

	Tomatoes	Potatoes	Corn	Beets	Carrots
Smith	53	60	48	35	95
Santis	60	75	53	30	75
Li	45	67	60	40	82
Pierre	55	59	63	38	79
Merchant	62	70	50	35	80

To specify the number of degrees that text is rotated, click on the **Orientation** button and choose **Format Cell Alignment**. Then use the Degrees spin box to set the degrees of rotation (from -90 to +90 degrees) and click OK.



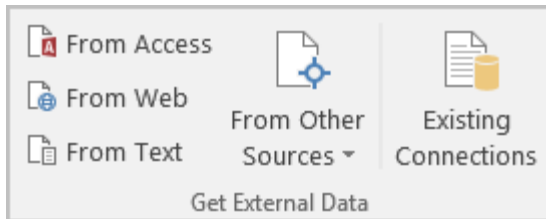
Data Tab

Notes

The **Data** tab contains commands related to entering and managing data in a worksheet. Use this tab when importing, querying, outlining, and subtotaling the data placed into a worksheet's data list.

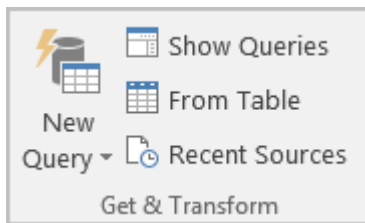
Get External Data

- Apply data from an Access file, the Web, a text file, other sources or existing connections
- Import data from common sources through **Existing Connections**



Get & Transform

- Use **New Query** to discover, connect, and combine data from multiple sources, then shape and refine it to meet your needs
- View queries in this workbook with **Show Queries**, create a new query linked to the selected table with **From Table**, and manage connections with **Recent Sources**



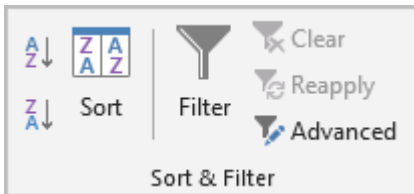
Connections

- Refresh information coming from a data source with **Refresh All**
- Display all data connections for the workbook with **Connections**
- Use **Properties** to specify how cells connected to a data source will update, what contents from the source will be displayed, and how changes in the number of rows or columns in the data source will be handled in the workbook
- **Edit Links** allow you to view all of the other files a spreadsheet is linked to so that you can update or remove the links



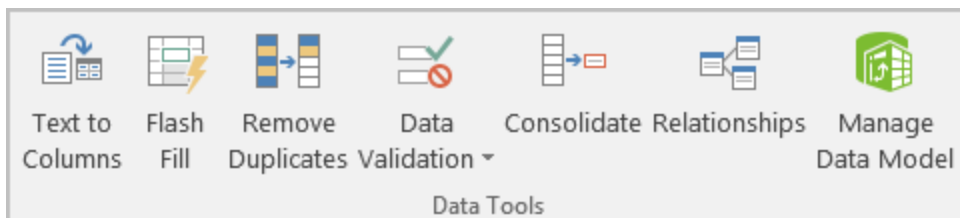
Sort and Filter

- Use **AZ↓** to sort lowest to highest
- Use **ZA↓** to sort highest to lowest
- **Sort** finds values quickly by sorting data
- Turn on filtering for selected cells with **Filter**
- Clear the filter and sort state for the current range of data with **Clear**
- Reapply the filter and sort on the current range so that changes you've made are included with **Reapply**
- Use **Advanced** for options for filtering using complex criteria



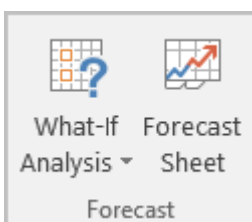
Data Tools

- Separate contents from one cell to separate cells with **Text to Columns**
- Automatically fill in values with **Flash Fill**
- Delete duplicate rows from a sheet with **Remove Duplicates**
- Set parameters to prevent invalid data from being entered into a cell with **Data Validation**
- **Consolidate** will combine values from multiple ranges into one new range.
- **Relationships** allows you to create or edit relationships between tables to show related data from different tables on the same report
- Go to the Power Pivot Window through **Manage Data Model** to add and prepare data or continue working on data already in this workbook.



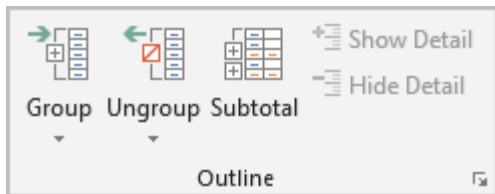
Forecast

- **What If Analysis** will allow you to try out various values for the formulas in the sheet with:
 - **Scenario Manager** - create different groups of values, and switch between them
 - **Goal Seek** - find the right input when you know the result you want
 - **Data Tables** - see the results of many different possible inputs at the same time
- Create a new worksheet to predict data trends with **Forecast Sheet**



Outline

- Tie a range of cells together so that they can be collapsed or expanded with **Group**
- **Ungroup** allows you to ungroup the range of cells that have been grouped
- **Subtotal** gives you the ability to total several rows of related data together by automatically inserting subtotals and totals for the selected cells
- Expand a collapsed grouped of cells with **Show Detail**
- Collapse grouped cells with **Hide Detail**



Exercise #2: Manage Data

Notes

Exercise #2A: Analyzing a Data List

1. In the Classwork folder select the **Digital Camera Sales 2014-20015** file.
2. In the **Sheet 1** worksheet tab, select the **Data** tab, and then click on the **Sort** button in the **Sort & Filter** group.
3. In the **Sort** dialog box make sure the **My data has headers** check box is checked.
4. Under **Column**, in the **Sort by** list, select **Country**.
5. Under **Sort On** ensure **Values** is selected.
6. Under **Order** ensure **A to Z** is selected.
7. Click on the **Add Level** button, and sort next by **Year**.
8. Add a third level, sorting by **Month**, and choosing **Custom List** in the **Order** drop-down.
9. Select the **Custom List** where the months are listed in calendar sequence.
10. Click **OK**.
11. On the **Data** tab, in the **Sort & Filter** group, select the **Filter** button. (Notice that filter arrows appear in the Country, Year, Month and Sales columns.)
12. To view data for the year 2014, click the arrow in the **Year** column.
13. In the dialogue box, uncheck **Select All**, and recheck 2014.
14. Select **OK**.
15. To remove the filter arrows from the column headings (which will also display all of the data again), click on the **Filter** button again.
16. Rotate the column headings to -45 Degrees with a **Horizontal Text alignment** of **Right**.
17. Format the **Sales** data to **Currency** with two decimal places.
18. Insert a column between **Year** and **Month** and label it **Quarter**.
19. On the **Sheet 3** tab, create a list that consists of **Quarter 1**, **Quarter 2**, **Quarter 3**, and **Quarter 4**. This list will be used as a data validation list in the Sheet1 tab.
20. Add data validation to the new **Quarter** column in **Sheet1** so only the list from **Sheet 3** can be entered.
21. In **Sheet1**, apply data validation to Column B to limit the year entered to the range 1950 to 2200.

Exercise #2B: Cleaning Up and Outlining Data in a Data List

1. To check and remove redundant data, click cell **A1**, then go to the **Data** tab.
2. In the **Data Tools** group, click **Remove Duplicates**.
3. In the **Remove Duplicates** dialogue box, under **Columns**, ensure all the columns are selected and click **OK**.
4. In the Microsoft Excel dialogue box that tells you how many duplicates were found, click **OK**.
5. To add a subtotal on this worksheet highlight cells **A1 – E49**.
6. On the **Data** tab, in the **Outline** group, click **Subtotal**.
7. Select **Country** in the **At each change in** drop-down list, and ensure the **Use function** is **Sum**.
8. In the **Subtotal** dialogue box, in the **Add subtotal to** list, ensure that the **Sales** box is checked and click **OK**.
9. Notice that subtotals appear in the selected cell range and the data in the cell range is automatically outlined.

Exercise #3: Flash Fill**Notes**

1. Open the **Flash Fill Exercise.xlsx** file.
2. In **Data Set #1**, use **Flash Fill** to create a list by Last Name, First Name, and middle initial.
3. In **Data Set #2**, use **Flash Fill** to separate the names into First Name and Last Name.
4. In **Data Set #3**, use **Flash Fill** to format the phone numbers.
5. In **Data Set #4**, use **Flash Fill** to list the dates of birth by mm/dd/yyyy.

Transpose Columns and Rows**Notes**

There are times when you have a worksheet with data listed in columns, and you want to rearrange it into rows. Or perhaps you want to transpose data from rows into columns. It is easy in Excel to make this kind of change.

To Transpose Data

1. Select and copy the data you want to rearrange, including the column and row labels.
2. Right-click the cell where you want the rearranged data to be pasted.
3. In **Paste Options** select the **Transpose** paste button.

NOTE: Once the data is pasted you can delete the original data and display only the contents that were transposed. If you use the **Cut** command instead of the **Copy** command, transpose will not work. If there are formulas in the data you transpose, Excel will automatically update the formulas to match the rearranged data. If the formulas no longer work after the data has been transposed, you may have absolute references in the formulas. Any formulas with absolute references can be manually updated.

Exercise #4: Transpose Columns and Rows**Notes**

1. Open the **Digital Camera Sales 2014-2015.xlsx** file and go to the **Sheet2** worksheet.
2. Highlight and copy the data.
3. Paste the data transposed on row 11.
4. Delete the original set of data and all of the rows 1 – 10.

Share and Protect Worksheets and Workbooks

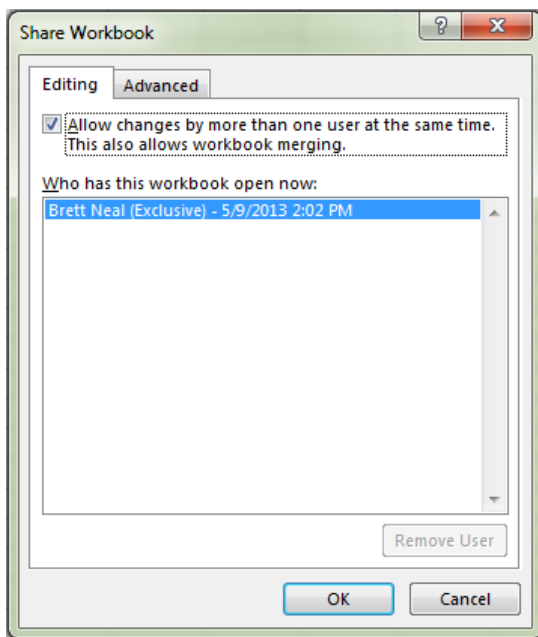
Notes

SHARE A WORKBOOK

Excel 2016 allows you to share and protect the workbooks you have created and edited. To share a workbook, it must be stored on a shared network drive or in a shared folder. Anyone with access to the drive or folder can access the file. To limit who has access to a workbook that will be shared, add a password before activating the share functionality.

To Share a Workbook

1. Go to the **Review** tab and then to the **Changes** group.
2. Click on the **Share Workbook** button.
3. In the **Share Workbook** dialogue box, check the **Allow changes by more than one user at the same time** box to allow multiple people to make changes simultaneously.
4. Click **OK**.



NOTE: You can modify advanced settings when you share a workbook by clicking on the **Advanced** tab inside the **Share Workbook** dialog box. Options include how long to keep the change history for the file, determining when changes will be updated, and what Excel should do when there are conflicting changes between users.

NOTE: Some Excel functionality is not available after a workbook is shared. This includes deleting worksheets, merging cells, data validation, conditional formatting, subtotals, worksheet protection, adding or editing charts, pictures, objects or hyperlinks, using the drawing tool, grouping or outlining data, pivot tables, scenarios, and macros. To perform these tasks, unshare the workbook. After the tasks have been performed, reshare the file.

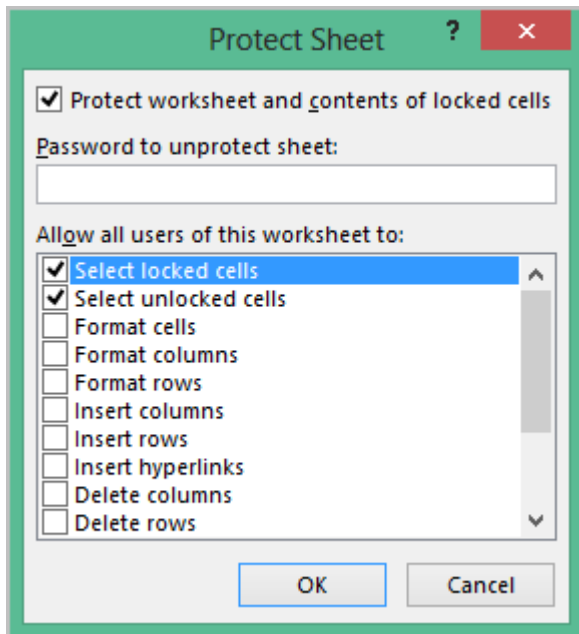
PROTECT A WORKSHEET OR WORKBOOK

You can also protect your worksheets or workbooks, or specific parts of the worksheets such as cells, rows, columns and hyperlinks. This will prevent a user from accidentally or deliberately changing, moving, or deleting important data from a worksheet or workbook. You can also specify a password that users must enter to modify specific, protected worksheet and workbook elements.

By default, when you protect a worksheet, all the cells on the worksheet are locked. People you share the worksheet with cannot make any changes to a locked cell. For example, they cannot insert, modify, delete, or format data in a locked cell. However, you can specify which elements users will be able to change when you protect the worksheet.

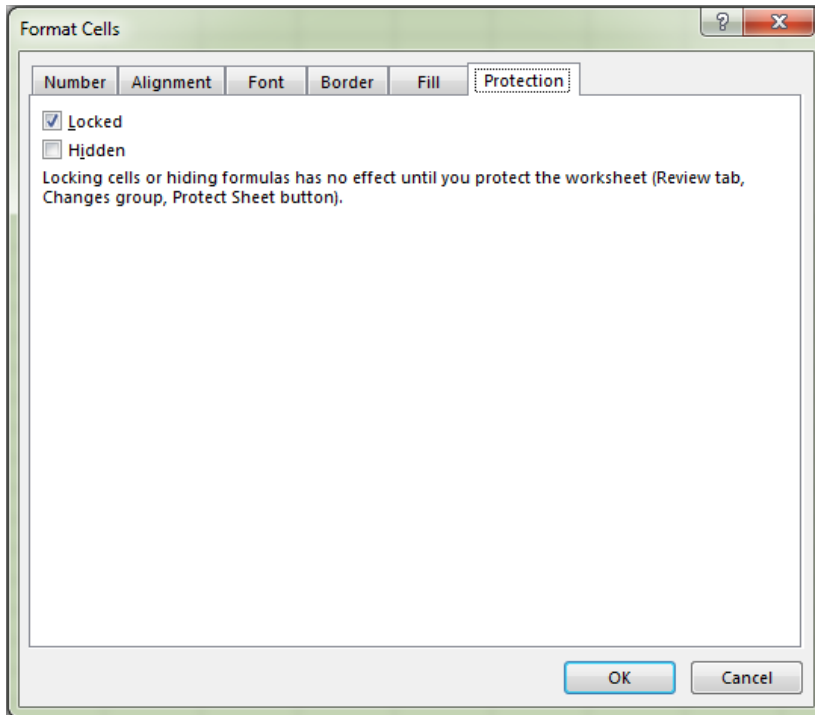
To Protect a Worksheet

1. Select the parts of the worksheet you want other users to be able to change.
2. Go to the **Review** tab and then to the **Changes** group.
3. Select the **Protect Sheet** button.
4. If you wish to apply a password to restrict who can remove the sheet protection, type a password into the **Password to unprotect sheet** box.
5. Click **OK**.
6. If you entered a password, you will need to re-enter it as confirmation.



To Un-Lock Individual Cells:

1. Open the worksheet you want to protect.
2. Highlight the portion of the worksheet you do not want to protect.
3. Right click on those highlighted cells and select **Format Cells**.
4. Select the **Protection** tab.



5. Uncheck the **Locked** check-box then select **OK**.
6. Select the cell you wish to protect.
7. Right click on those highlighted cells and select **Format Cells**.
8. Select the **Protection** tab and click on the **Locked** Box.
9. Select **OK**.
10. Click on the **Review** tab and in the **Changes** group select **Protect Sheet**.
11. Make sure the first box under **Allow all users of this worksheet** is unchecked.
12. Type in a password.
13. Select **OK**.
14. Retype the password when prompted and select **OK**.
15. Save your worksheet. Exit and return. When you return to the worksheet you should notice that you can click in any cell in the worksheet except the cell you protected. To access that cell you'll need to Unprotect the sheet through **Review > Unprotect Sheet > Enter Password > OK**.

To Protect a Workbook

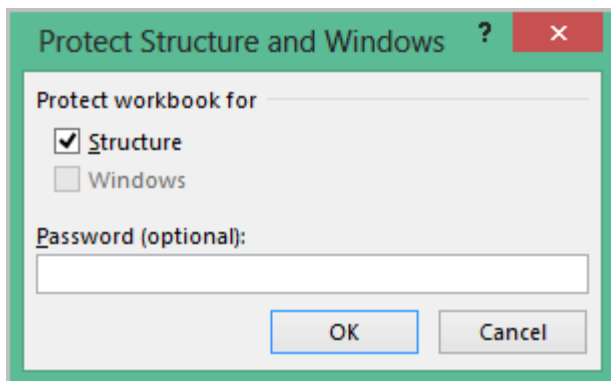
1. Go to the **Review** tab and then to the **Changes** group.
2. Select the **Protect Workbook** button.
3. Under **Protect workbook for**, do one of the following:
 - To protect the structure of a workbook, select the **Structure** check box.

NOTE: Selecting **Structure** prevents others from: Viewing worksheets that are hidden; moving, deleting, hiding, or changing the names of the worksheets; inserting new worksheets; and moving or copying worksheets to another workbook.

- To keep workbook windows in the same size and position every time the workbook is opened, select the **Windows** check box.

NOTE: Selecting **Windows** prevents others from: Changing the size and position of the windows for the workbook when the workbook is opened; and moving, resizing, or closing the windows.

4. To prevent others from removing workbook protection, type a password into the **Password (optional)** box.
5. Click **OK**.
6. If you entered a password, re-enter it as confirmation.

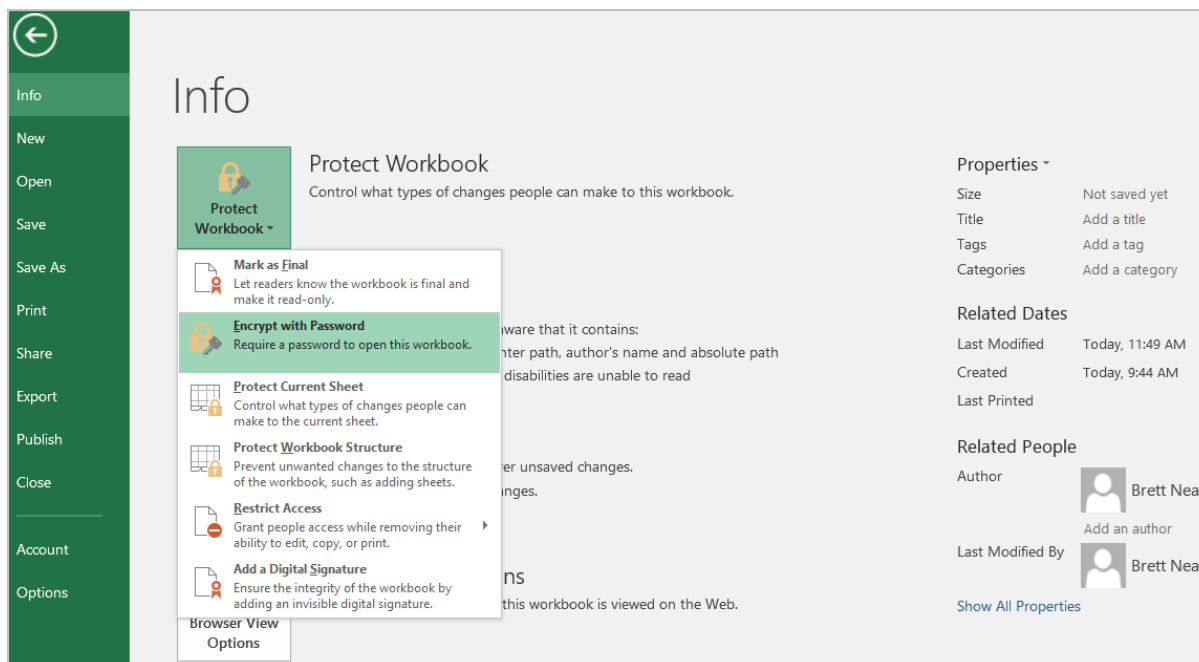


Something to Remember

Protecting a workbook or worksheet with a password as described above will allow others to see the information in the sheet, but not be able to make changes. The worksheet will appear as “Read only”. A workbook can also be password protected so that those without the password can’t even open it. To do this start by opening the workbook you wish to password protect.

1. Select the **File Tab** then select **Info**.
2. Click on the drop-down arrow on the **Protect Workbook** button.
3. Select the **Encrypt with Password** choice.
4. Type your password, and then click **OK**.
5. Retype your password.
6. Select **Save** (or **Save As**, if you haven’t named this workbook).

The workbook will now be a password protected document that only people with the password will be able to open.



Additional Resources**Notes****To contact me directly:**

Brett Neal – Professional Development & Training

802-656-0630

Brett.Neal@uvm.edu

NOTE: If you are having problems with a spreadsheet, sending me a copy will make it easier for me to help you!

Additional Resources:

To view all classes offered by Professional Development & Training, go to our website <http://www.uvm.edu/develop>. Here you can view the class schedule by date, read class descriptions, learn about the certificate programs we offer, and find PeopleSoft Mini Manuals.