Excel Basics

**PREP WORK:**

* Read handouts on Excel Basics. Each location uses a slightly different version of Excel. Make sure you are working with the correct version.
* Get to library early to test for technology failures
* Make you have enough copies of the handouts and the feedback forms

\*\*\*The library will print handouts for us.

**OBJECTIVES:**

* Understand what Excel is
* Enter text and numbers into an Excel worksheet
* Use Autofill
* Perform basic calculations
* Use AutoSum
* Understand different cursors and what they do
* Create a budget in excel

**Before class:** Record attendance, make sure there are enough handouts for class, make sure you have feedback forms for the end of the course, check computers to make sure they are on and ready to use.

**LESSON OUTLINE:**

**Introduction**

* Introduce instructor, students.
* Let students know it’s okay to take phone calls, but ask them to put their phone on vibrate and answer calls outside the classroom.
* Inform students that they can sit back and watch if the class is too advanced.
* Inform students they can go to the bathroom, they don’t need permission.
* Show order in which class will happen. Explain scope of class.
* **Icebreaker Question:** Who has used Excel before? What have you used it to do?

**I. Introduce Excel**

* *What is Excel?*

Excel is a powerful spreadsheet software that allows users to:

* + - Organize data.
		- Easily perform complex mathematical equations.
		- Link information together.
		- Create charts of data.
		- More

**II. Navigating the Program**

The Ribbon Menu System

* + - * **Home:** Where your most frequently accessed features, such as font style and size, the formula bar, and number style, are located.
			* Insert – Adds content beyond basic text and numbers to the page (e.g. graphs and pivot tables)
			* Page Layout – changes how the page prints (e.g. margins, portrait or landscape).
			* Formulas – The reason Excel is so useful. The formula tools to can perform a number of calculations that save the user time.
			* Data – Organize and summarize data in a workbook.
			* Review – Think spell check.
			* View – changes how the page looks digitally (e.g. gridlines).
			* You can tell which tab is selected because it is highlighted.
			* *Teacher’s Tip: If students don’t see the same menu options as the instructor, they can always check the tab the instructor has selected to find the right menu.*

Groups

* Within each tab, there are groups of like buttons (For example, there is a group labeled “font.”
* These are used to help you find buttons easier.
* If I tell you to click the Autosum button, you have to read through every button on the Home tab, but if I tell you to click the Autosum button in the Editing grouping, you can find it right away.

The Spreadsheet

* Rows – go horizontally across the page. Denoted by a number at the beginning of the row.
* Columns – go vertically across the page. Denoted by a letter at the top of the column.
* Cells – the intersection between a row and a column.
* Cell Address – the column letter and row number of a particular cell.
* Formula Bar – allows you to double check information. The importance of this will become more apparent later.
* Worksheets vs. Workbooks— A whole excel file is thought of as a workbook. A single page in excel is a worksheet. The tabs at the bottom of the screen allow you to move between worksheets. A workbook is made up of one or more worksheets.

Navigating a Spread Sheet

* Click in a cell
* When you open a workbook, you will automatically start with cell A1 selected.
* You can tell which cell is selected because it is surrounded by a thick black box.
* You can move to any cell in your workbook by clicking on it.
* You can tell the cell address of that cell because the column letter and row number will be highlighted.
* Enter: move one row down.
* Tab: move one column to the right.
* Part of navigating a spread sheet is understanding how each of the different ways the cursor functions in excel.



**Activity:** Demonstrate how each of these cursors are used and then ask the class to practice using all four of these cursors in excel.

III. Creating a budget

*From this point forward, everything in the lesson plan will follow the Creating a Budget activity sheet. Invite students to follow along using their handout. Students are also welcome to move through the handout at their own pace.*

 Adding Text

* We are going to build a budget to learn some of the tools Excel offers.
* *Teacher’s Tip: It may be worthwhile to demo the finished product for students in the class. Show them the setup of the spreadsheet and how as you change values in various cells, it updates the totals in others.*
* To start with, we need to create the content that belongs in our budget.

**Activity:**Data Entry

* Click in cell A1.
* Type “Personal Budget”.
* Ask students: “what keyboard key can we hit to move down on the page?”

Press Enter to move down to cell A4.

Create some sections and itemize your budget. Here’s some suggestions:

* + - Income – A4
		- Wages – A5
		- Interest – A6
		- Misc – A7
		- Income Total – A8
		- Expenses – A10
		- Home – A11
		- Mortgage/Rent – A12
		- Utilities – A13
		- Phone – A14
		- Home Improvement/Repairs – A15
		- Home Total – A16
		- Living – A18
		- Groceries – A19
		- Child Care – A20
		- Eating Out – A21
		- Living Total – A22
		- Transportation – A24
		- Gas – A25
		- Insurance – A26
		- Parking – A27
		- Public Transportation – A28
		- Transportation Total – A29
		- Expenses Total – A31
		- Over/Short – A32

IV. Resizing Cells

The text in several cells crosses over from one column to another. If you add text to the next column, it covers up some of the text. Click next to Home Improvement… and type in 200.

You can’t see the whole text anymore. We need to make column A big enough to accommodate all of our text.

*Activity:* Make column A wide enough to accommodate text.

* Put your cursor on the line separating columns A and B in the column headings.
* *Teacher’s Tip: Start by having students put their cursors over the letter A itself. The cursor becomes a black arrow pointing down. This gives them a frame of reference for where they need to move their cursor to be on the correct point of the line. Then have them move their cursor over to the line between the A and B.*
* *Teacher’s Tip: Point out that the cursor changes to a thick black line with an arrow pointing in either direction.*
* Click and drag to the right to make the column wider.
* In this workbook, it is easy to see all of our content, so we know exactly how wide we need to make our column.
* In a workbook 5000 rows long, we would have to scroll for a long time to see make sure everything fit in the first column.
* Undo making the column wider.
* Double click on the line separating columns A and B.
* *Teacher’s Tip: There will always be at least one student who tries to grab the line too low on the page. Make sure everyone understands that changing column width happens in the column headings all the way at the top of the page*

V. AutoFill

Excel has a ton of tools available to make work faster and easier. Excel has been programmed to understand cycles, like after January comes February. This means we don’t need to type in all that information on our own.

*Activity: Autofill in Months.*

* Type “Jan” in cell B3.
* Confirm the value by pressing Enter.
* Inform students that Excel doesn’t actually see any value until we have confirmed that we are done typing. We can confirm values by pressing Enter.
* Go back to cell B3.
* Click and drag the AutoFill handle in the lower right corner of the selected cell until you seen the prompt for December.

VI. Basic Math

The true power of Excel isn’t in its ability to organize data, it’s in its ability to do work for you. We can have Excel perform basic mathematical functions for us. For the sake of ease, everyone is going to make $2000/month salary.

*Activity: Prepare the document for practicing basic math in Excel*

* Step 1 – Type 2000 into cell B5.
* Ask students: “Is there something we’ve already learned today that might help us put this 2000 in for every month in this budget?”
* Step 2 – AutoFill the 2000 across to December (row M).
* Teacher’s Tip: if you have an engaged bunch of students, show them AutoFill Options. Change the autofill from Copy Cells to Fill Series. Ask students: What’s the difference between these two options? What do you think the other options do?
* Step 3 – Type 0 in cell B6.
* Step 4 – AutoFill the 0 across to M6.
* Step 5 – Type 0 into cell B7.
* Step 6 – AutoFill the 0 across to M7.

*Activity: Perform the basic math for income.*

* Start with =.
* Write on the board: “2000 + 0 + 0 = x” and “x = 2000 + 0 + 0”.
* Ask students: “Do these two things say the same thing?”
* Explain that Excel only understands this equation if it is written “= 1 + 2”.
* ALWAYS START WITH = !!

Cell References

* We don’t really want to add the values 2000, 0, and 0.
* What we want to add is whatever value happens to be in cell B5 to whatever value happens to be in cell B6 to whatever value happens to be in cell B7.
* Instead of referencing actual values in our formula, we are going to reference the cells those values are in.
* Write on the board “= B5+B6+B7”.
* Now we can add whatever value happens to be in each of those cells instead of precise values.
* Click in cell B8.
* Type in =.
* Click on cell B5.

Instead of typing in the number 2000, we tell Excel to where to find the number.

This way, if that number changes, Excel will automatically update the value in cell B8.

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* Type in +.
* Click on cell B6.
* Type in +.
* Click on cell B7.

Point out that all the cells referenced in the formula are highlighted.

confirm the value by pressing Enter.

AutoFill the formula across row 8 until column M.

VII. Number Formats

Right now, even though we are looking at a budget, it isn’t obvious we are talking about money.

Ask students: “what usually shows that we are talking about money?”Dollar signs and decimal points!

*Activity: Change the Cell Formatting to Currency.*

Select the range of cells from B5 to M8.

* Click on the Number Formatting dropdown menu on the Home Tab in the Number Grouping.
* Select Currency from the list.
* *Comprehension Check: Fill in Home Expenses, AutoFill across the screen, use a formula to determine the totals and format as currency.*
	+ Come up with values for the fields as a group. If you struggle, use:
		- Mortgage/Rent: 750
		- Utilities: 100
		- Phone: 80
		- Home Improvement/Repairs: 100

VIII. AutoSum

The math we’ve looked at already is great if you only have a few numbers, but what if you were asked to add up a range of 500 numbers? Excel understands basic commands like: Add all numbers in a range of cells.

*Activity:* Fill in Values for Living Expenses and AutoSum the total.

* + Come up with the values to put into your budget as a group. If you struggle, use these:
		- Groceries: 150
		- Child Care: 200
		- Eating Out: 60
	+ Click in cell B22.
	+ Click on the AutoSum button in the Editing grouping on the Home tab.
		- Point out that Excel automatically tries to figure out the range of cells you would like to add.
		- Inform students that you can always click and drag to select a different range of cells.
	+ Press Enter to confirm the value.
	+ Select the range of cells from B19 – B22 and AutoFill across to column M.
	+ Set the number formatting to currency.
* *Comprehension Check: Independent Practice: Students fill in values for Transportation, AutoSum or basic math the total, AutoFill across, change the formatting to currency.*
	+ Instructor walks around the room to help students who get stuck.
	+ Make sure to remind students to think about which cursor they are using.

XI. Math in Unconnected Cells

So far, we’ve only looked at putting together formulas in contiguous cells. Now we look at math performed across the workbook.

* Activity: Create the Expenses Total formula.
* Ask students: “what numbers in this worksheet do you think add up to give us our total expenses?”
* Click in cell B31.
* Type in =.
* Click on cell B16.
* Type in +.
* Click on cell B22.
* Type in +.
* Click on cell B29.
* Press Enter.
* AutoFill across row 31.

 **Conclusion**

* Review the objectives of the lesson
* Ask the class if they have other questions about excel
* Show the class the CWS website and what classes will be offered next week
* Hand out feedback forms
* Thank the students for their time!

