

Excel for Elementary Educators

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Course Description

Microsoft Excel is a powerful but underused tool for educators. While often viewed as data management tool for secondary school use, Excel has exciting application for elementary instructors. This course first familiarizes you with the basic functions of the program, including cell management and simple formulas. Then, it will look at how Excel can help instructors organize their classrooms and develop timesaving handouts and computer-based activities for students. In addition to examples produced in class, a CD of Excel files will be provided for instructors to take back for use in the classroom. From rubrics to schedules, spelling lists to arithmetic, this course will provide you with a refreshing look at teaching and technology.

Outline

1. Introduction to Excel
 2. Introduction to Cells – How many cells are there?
 3. Working with Cells – stretching, shrinking, and merging
 4. Merging Cells
 5. Color and Borders as Visual Aids
- B. Excel as an Organizer: Module A: Teacher Tools
1. The *Perfect Plan Book* *
 2. Contact List
 3. Rubric Creation
 - 4.
- D. Excel Activities for Students
- a. Module B, Activities for Elementary Classrooms
 - b. Module C, Activities for Middle and High School classrooms
 - c. Modules D-F
 - d.
- E. Further work with Excel and formulas

* Denotes an activity that will be created in class.

Additional Resources:

[Atomic Learning](http://www.atomiclearning.com) (www.atomiclearning.com)

Module A – Excel as a Teacher Tool

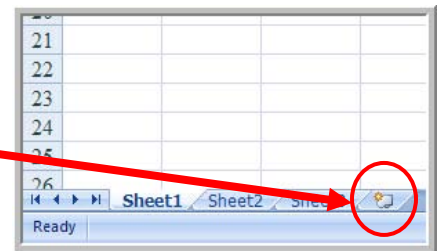
1. Introduction to Cells

Microsoft Excel works much like the game of Battleship. It is organized by columns and rows. The columns are identified by letters while the rows are identified by number. When you combine these, you can **reference a cell** with its coordinates. For example, the cell identified at the right is L10. The cell reference is also indicated in the upper left portion of the screen.

Open the Excel file *Module A.xls*.

		"FOOT" Measurements		"Ruler" Measurements			
		# of feet for length	actual measure of foot (inches)	actual length (inches)	# of rulers for length	actual measure of ruler (inches)	actual length (inches)
2	Student						
3	Avery	7.5	8.5	63.75			
4	Haley	7.5	8.5	63.75			
5	Kathy	7.5	8.4	63			
6	Susan	7.5	8.4	63			
7	Barry	8	8	64			
8	Emily	8	8	64			
9	Katie	8	8	64			
10	Kelsey	8	8	64			
11	Michael	8	8	64			
12	Phil	8	8	64			
13	Jade	8.25	7.7	63.525			
14	Alena	8.5	7.6	64.6			
15	Barbara	8.5	7.7	65.45			

The Tabs on the bottom of the screen represent different **worksheets**. To quickly insert a new worksheet at the end of the existing worksheets, click the **Insert Worksheet** tab at the bottom of the screen.



2. Working with Cells

a. Stretching & Shrinking

Cells are constrained only by your imagination. The row and column headers are used to control cell height and width.

- i. Select a column or row header with the mouse.
- ii. Select the right side (column) or bottom (row) of the selection and stretch or shrink to the desired size.
- iii. **Multiple columns or rows** can be changed simultaneously by selecting more than one with the mouse and changing the size of one of columns or rows.

b. Merging Cells

Titles or other groupings are good uses of **Merging cells**.

- i. Select the cells to merge.
- ii. Choose the **Merge and Center** button from the Formatting panel.
- iii. To undo this action, choose **Edit > Undo**.

3. Color and Borders as Visual Aids

Excel can help manage large amounts of information or design worksheets to do so. Color and borders really help organize the user.

Examine the sheet *Attendance*.

a. Color and shading

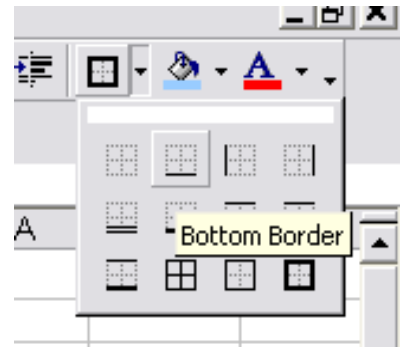
Color or shading can be used to break up columns or rows, like a checkbook register. These features are also found on the **Home Ribbon with the Font section**. Colors work well for computer projects; shading works better for printing documents.

- i. Select the cell(s) you want to shade.
- ii. Use the **Paint Bucket tool** to choose your color/shade.

b. Borders

The **Border Tool** provides many border options. Note the difference in the weight of borders.

- i. Select the cell(s) to add borders.
- ii. Make your border choice from the **Borders Tool**.



Using Excel to organize student/classroom information

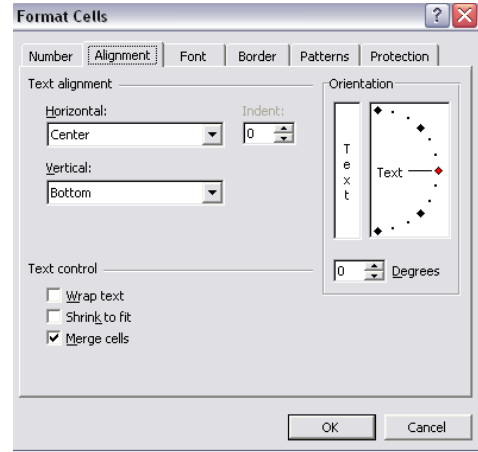
Microsoft Excel can keep you well organized. Some resources it can provide will store information on your computer. Others will provide you with the ability to customize your own student information sheets, lesson plans, and other classroom organizers. The following examples

Open the spreadsheet *Module A.xls*. The following skills will help you create some of the projects in this spreadsheet.

4. Formatting Text in Excel

Simple formatting like bold, underline, and italics can be applied to individual words within a cell or to an entire cell.

Cells, however, can take on more complex formats. Many options are available from the **Home Ribbon** accessed from **Cells > Format > Format Cells**.



Number – control the number of decimal places; conform to different types of currency, and much more.

Alignment – control vertical and horizontal alignment, wrap text within a cell, or change the orientation to a specific angle. Vertical or angled text is useful to conserve space in a table.

Font – control font specifics such as font, font size, and style

Border – control more border options than from the format bar.

Patterns – control the background color of an area, add patterns too.

Protection – Excel allows you to hide or protect formulas. These options require that you enable other security features for the spreadsheet.

	A	B	C	D	E	F	G	H	I
1	Last Name	First Name	Phone	Address	Zip	Student ID	Gender	Birth Date	Lives With
2	Albers	Victoria	571-3200	3202 S 72nd St	98406	234567	F	18-Nov	Mother
3	Bakken	Kristofer	571-4600	1202 S. 76th St.	98406	234568	M	8-Jun	Both
4	Barbour	Weam	571-4688	1302 E. 38th	98406	234569	M	19-Sep	Both
5	Black	Tyler	571-7600	1526 51st NE	98406	234570	M	21-Apr	Foster
6	Cho	Kenny	571-7500	717 S. Grant	98406	234570	M	30-Jul	Father
7	Dolan	Katie	571-2770	4901 S. 14th	98408	234571	F	7-Aug	Both
8	Donnelly	Sydney	571-4896	2502 N. Orchard	98406	234572	F	1-Jul	Mother
9	Gellner	Ruby	571-4861	5830 S. Pine	98406	234573	F	23-May	Mother
10	Harrell	Vashad	571-7598	126 E. 60th	98406	234574	M	26-Jun	Both
11	Herrmann	Alexa	571-1234	8442 Park Ave.	98406	234574	F	12-Mar	Mother
12	Howard	Gillian	571-2345	621 S. Jackson	98444	234575	F	29-Sep	Both
13	Kerrone	Kellyanna	571-9874	1078 N. Prospect	98406	234576	F	10-Dec	Father
14	Klein	Lyla	571-8524	1615 S. 92nd	98406	234577	F	15-Jul	Grandparents
15	Laske	Tanner	571-4568	4302 N. 13th	98406	234578	M	15-May	Both

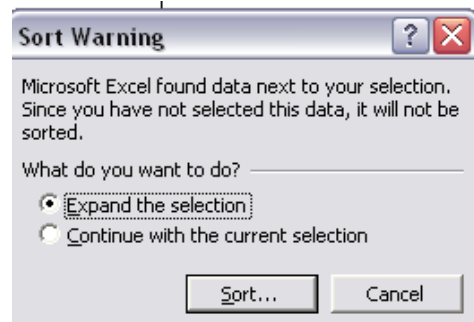
Sorting lists

Examine the worksheet *Addresses*. Add your contact information to the list. When you collect new information, it's often most convenient to store it alphabetically.

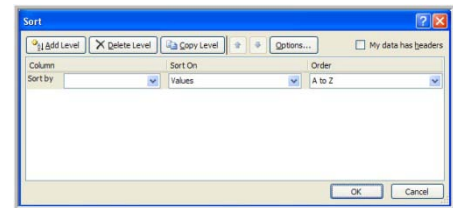
a. Select the data to be sorted. Do not include the column headers. You can either select a single row or multiple rows.

b. Choose **Data > Sort**

c. If you get a Sort Warning, the option to "Expand the Selection" will keep the data together in rows. That is, names will not be sorted separately from other information. Choose **Sort...**



d. In the **Sort** window, you can sort by a combination of the worksheet column headings. If your table had Parent, Staff, and Student information, it is possible to sort first by those groupings and then by last name.



e. Press **OK**. The list is sorted.

THE PERFECT PLAN BOOK

Rarely have I been satisfied with the layout of teacher planning books. Here's your chance to make your own. This task will have you design a single-page layout that you can then photocopy and bind at your school or at Kinko's for a minimal amount. Consider these items as you begin your task:

- ✓ How many subjects do you teach? How do you break up your day?
- ✓ What information is important to you? Objectives? Homework? Tasks?
- ✓ A week's work can cover one page or a two-page spread!
- ✓ Useful skills – vertical text, changing cell height and width.

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00 AM	Attendance/Entry Task	Attendance/Entry Task	Attendance/Entry Task	Attendance/Entry Task	Attendance/Entry Task
9:15 AM	Walk to Read	Walk to Read	Walk to Read	Walk to Read	Walk to Read
9:30 AM					
9:45 AM					
10:00 AM					
10:15 AM					
10:30 AM	Music	Language Arts	Music	Language Arts	Language Arts
11:00 AM					
11:15 AM	Lunch/Recess	Lunch/Recess	Lunch/Recess	Lunch/Recess	Lunch/Recess
11:30 AM					
11:45 AM					
12:00 PM	Math	Math	Math	Math	Math
12:15 PM					
12:30 PM					
12:45 PM					
1:00 PM					
1:15 PM	Tech Time	PE	Tech Time	PE	Library
1:30 PM					
1:45 PM					
2:00 PM	Recess	Recess	Recess	Recess	Recess
2:15 PM	Social Studies	Social Studies	Social Studies	Social Studies	Social Studies
2:30 PM					
2:45 PM					
3:00 PM					
3:15 PM	Prepare to go home	Prepare to go home	Prepare to go home	Prepare to go home	Prepare to go home
3:30 PM	3:30 Dismissal	3:30 Dismissal	3:30 Dismissal	3:30 Dismissal	3:30 Dismissal

Modules B through F – Activities for Students

Spell Check Practice:

If/then statements can be used to create fun spell checks for students. This sheet can be customized to your current word set by changing the vocabulary word in the formula bar. Use clip art to find a matching picture.

	A	B	C	D	E
1	Pictures	Word			
2		apple	Super!		
3		son	Sorry		
4		fish	Super!		
5		ball	Super!		
6		kace	Sorry		

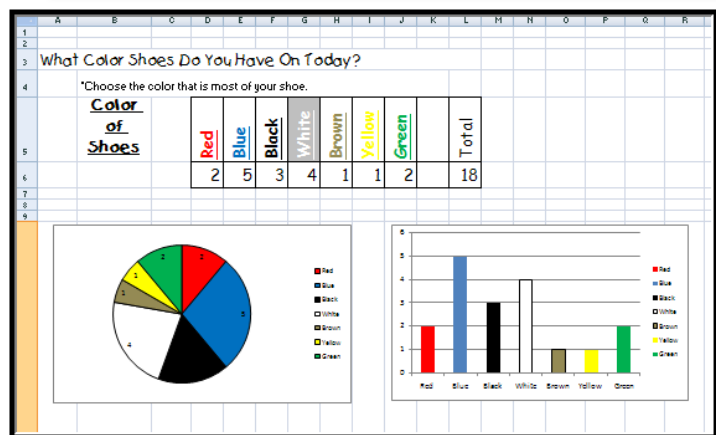
Baseball Statistics:

Students enter names of baseball players and statistics.

	A	B	C	D	E	F	G	H	I	J
1	Baseball Statistics									
2			At Bats	Hits	RBIs	Strike Outs	Runs Scored	Extra Base Hits	Batting Average	
3	Austin Collins	55	46	40	6	36	28	836		
4	Matthew Beatty	56	47	33	2	35	22	839		
5	Charan Balaji	40	22	11	11	13	7	550		
6	Daniel Cook	50	29	13	7	15	6	580		
7	Brenden Frazier	50	36	32	2	18	9	720		
8	Erik Bozard	56	44	18	0	37	15	786		
9	Devon McLean	3	1	0	1	0	0	333		
10	Sean Sims	43	18	6	5	10	4	419		
11	Brandon Harwood	50	37	29	5	25	14	740		
12	Andrew Garrett	11	1	1	7	2	1	91		
13	Sean Flanagan	47	20	17	19	6	7	426		
14	David Pratt	43	25	12	7	16	6	581		
15		504	326	212	72	213	119	647		
16										

Quick Surveys:

Just think of your student's knowledge with graphing skills when you complete quick surveys regularly. With Excel, this takes only moments, and your students can quickly learn how to do it. See the Quick Survey Questions tab in the Activities for Students Workbook for a sampling of survey questions.



Setting up your data:

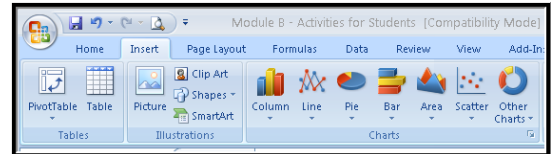
1. Insert question. You can use merged cells if you would like – but not necessary.
2. Create a header row with the data labels. In this data set, it is the color names (red, blue, black, white, brown, yellow, green, total).
3. Enter data results (2, 5, 3, 4, 1, 1, 2)
4. Use the auto sum function Σ for your total.

1	A	B	C	D	E	F	G	H	I	J	K	L
2	What Color Shoes Do You Have On Today?											
3	*Choose the color that is most of your shoe.											
4	Color of Shoes											
5	Red	Blue	Black	White	Brown	Yellow	Green	Total				
6	2	5	3	4	1	1	2	18				

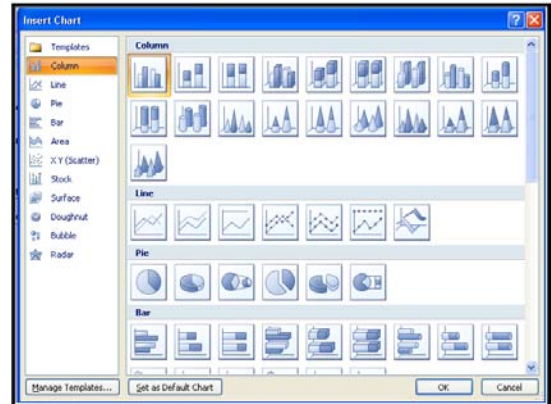
5. Select area.

Red	Blue	Black	White	Brown	Yellow	Green	Total
2	5	3	4	1	1	2	18

6. Select chart type from the insert tab.

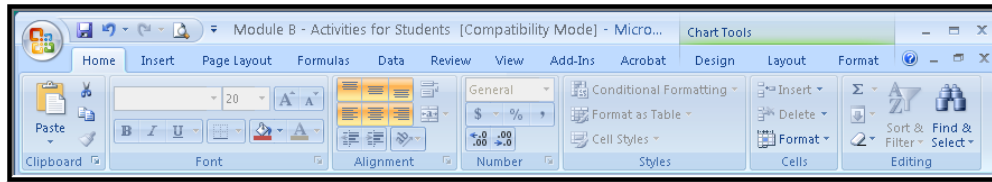


- a. Use the template topics to jump to a chart section, or scroll down to see more options for chart types.
- b. Click on the type you wish to use and it will be entered on you Excel worksheet.

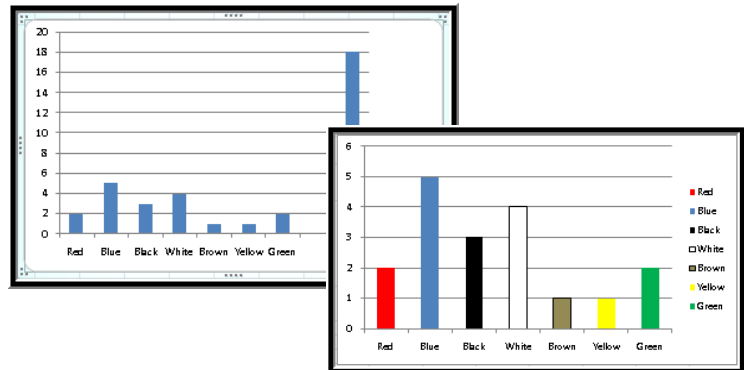


Customizing and Formatting Your Graph:

Changing Colors of Bars, Sections and Headings:

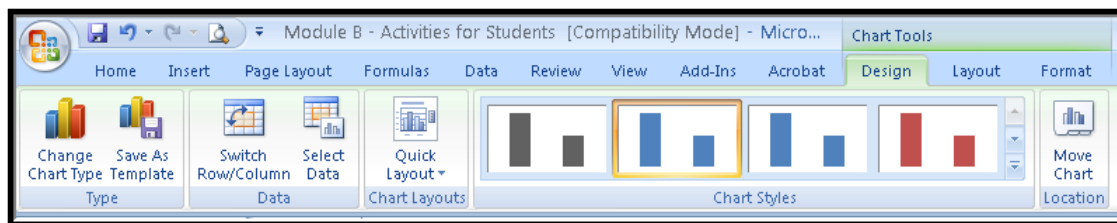


Select the item you wish to format and use the options within the Home ribbon to change the appearance of your graph. In this graph, the bars were selected and the color changed using the paint bucket (fill) tool.

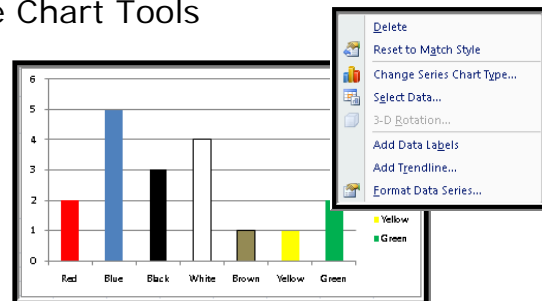


Text color was changed using the text color tool.

Adding Labels other formatting options:



1. Double click the graph to obtain the Chart Tools ribbon. This can be used to adjust your chart type, data set, layouts and styles.
2. You can also right click on a bar or section of you graph to see a list of formatting options. This was used to add the labels to this chart.



The Foot Book:

The "Foot Book" lesson activity engages students in discovery about units of measurement and the need for standardization. Students will create a spreadsheet to record how many lengths of their own feet are needed to measure the length of a person. A bar chart will be created to compare the class results. Students will enter a formula to find the conversion factor between the actual length of their foot and a standard unit of measure, in order to agree on the measurement to use for the length and width of the bed they need to make. It could be used with older learners or adapted for lower grades.

More Activities for Students:

Microsoft Excel can be a classroom tool for producing worksheets. The cell structure allows you to layout multiple rows of information while keeping columns lined up. The goal of this section is to show you **how to use some of the worksheets that have already been set up.**


1. Bingo Cards

The game of bingo has had a long history for word-identification and vocabulary familiarization. In this section, Excel has been used to help set up layout multiple bingo cards from a single set of words. To set up your bingo cards, follow these simple directions.

A	B	C	D	E
B	I	N	G	O
rectangle	polygon	octagon	line	perpendicular
square	parallelogram	supplementary	point	supplementary
triangle	kite	Free Space	acute angle	midpoint
quadrilateral	rhombus	segment	obtuse angle	vertical angles
trapezoid	Hexagon	ray	right angle	vertex

- Open the file *Module C.xls*. Select the **Worksheet "Words"**.
- Twenty-four words are currently in the list. Changing these words to words of your choice will change the bingo cards.

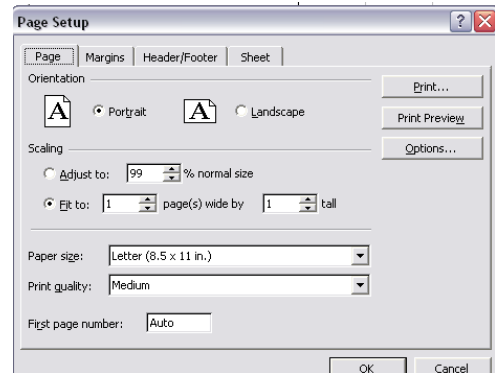
NOTE: when you change the words, previous bingo cards will be lost. If this is problematic for you, choose File > Save As... and give the current file a new name to reflect the new Bingo project.

- Worksheets "Cards 1", "Cards 2", and "Cards 3" automatically generate 6 different cards with the  same words. They have been pre-formatted to print exactly two to a page. **Print each page for use in your classroom.**
- Save your work if you desire to save this particular set of Bingo Cards.

2. Printing Worksheets

While Excel is great at helping us layout our work, our layouts can lead to printing problems. For example, if your work extends too far to the right, it will print it on two pages. **Here's one hint for printing a single page worksheet.** Follow these simple directions.

- Open the *Worksheet "Book Report"*.
- Choose **Page Layout > Scale to Fit**.
- Under **Scaling** chose the radio button in front of **Fit to: 1 page(s)...**
- Other options here include changing the orientation from **Portrait** to **Landscape**, adjusting the **Margins**, or adding a **Header/Footer**.
- Choose OK or Print if you are ready.



3. Mad Minutes Made Easy

While these activities may not be as popular as they used to be, practicing arithmetic is essential to gaining foundational math skills. Designing math worksheets is laborious to say the least. Let's practice working with a spreadsheet designed to make this task easier (almost enjoyable!).

- Open the **Worksheet "Add"**.
- The layout is setup using the skills of previous lessons. **Do not change the numbers manually.** They are set with formulas to randomly list numbers 0 → 9.
- Press the **F9 Key**. All of the numbers change.
- If you like a combination, choose **Print**.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Name:																	
2																		
3		2		2		7		4		0		2						
4		+ 1		+ 8		+ 6		+ 1		+ 1		+ 3						
5																		
6																		
7		6		3		7		1		7		5						
8		+ 5		+ 1		+ 7		+ 6		+ 8		+ 2						
9																		
10																		
11		5		2		7		6		0		7						
12		+ 3		+ 7		+ 7		+ 4		+ 8		+ 1						
13																		
14																		
15		8		0		3		1		1		4						
16		+ 4		+ 7		+ 2		+ 5		+ 1		+ 6						
17																		
18																		
19		4		5		8		7		1		5						
20		+ 4		+ 1		+ 0		+ 8		+ 3		+ 0						
21																		

The *Worksheets "Adding" and "Mult"* are more resources for developing Mad Minutes. OR change the addition signs to subtraction and you have even more opportunities.