

Microsoft Excel Session One

Welcome to your self-guided tour of Microsoft Excel. You may choose to do any or all of these lessons. There are some that must be completed before you go onto a subsequent lesson, but most are self contained.

When going through these instructions or when doing one of these activities on your own, keep in mind that some of the settings or processes are slightly different on different versions of Microsoft Word. These lessons are applicable to other versions besides Excel XP, but may have a few variations. In those cases, usually there is a similar logical route. These programs were designed by people and usually follow a general logic if you stop to look at the options.

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Introduction:

Microsoft Excel is a spreadsheet application. It is used to record, sort, and manipulate data to make it easier to understand.

This data usually involves numbers, however Excel can be used to sort other types of lists as well.

As it is so good to use with numbers, spreadsheets that show budgets, running totals, and other mathematical or quantifiable (countable) data are its strong points, however there are many ways to use it that do not directly involve numbers.

In this session, we will concentrate on using it to manipulate quantifiable data.

Inputting Data

Open up Microsoft Excel

You'll notice it is set up with letters across the headings for the columns, and numbers along the side for the rows. The very first cell is called A1.

In A1, type in **Date** and press enter. Your cursor will now be in the cell A2.

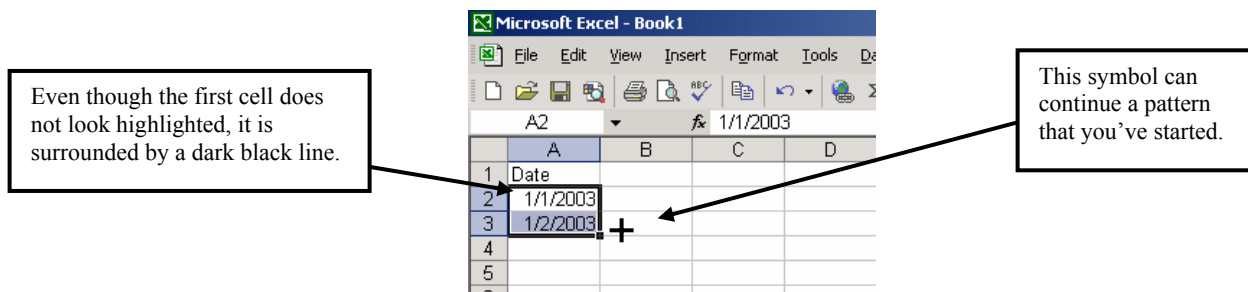
Type in 1/14/03 and enter. Type in 1/15/03 and enter.

You have now typed in enough of a pattern for Excel to recognize that you are typing in each day of the month. As a timesaver, whenever you are entering data that follows a pattern, Excel has a way of continuing the pattern as far as you'd like.

To have Excel complete the pattern, click and drag to highlight the cells that have the beginning of the pattern. (Cells A2 and A3).

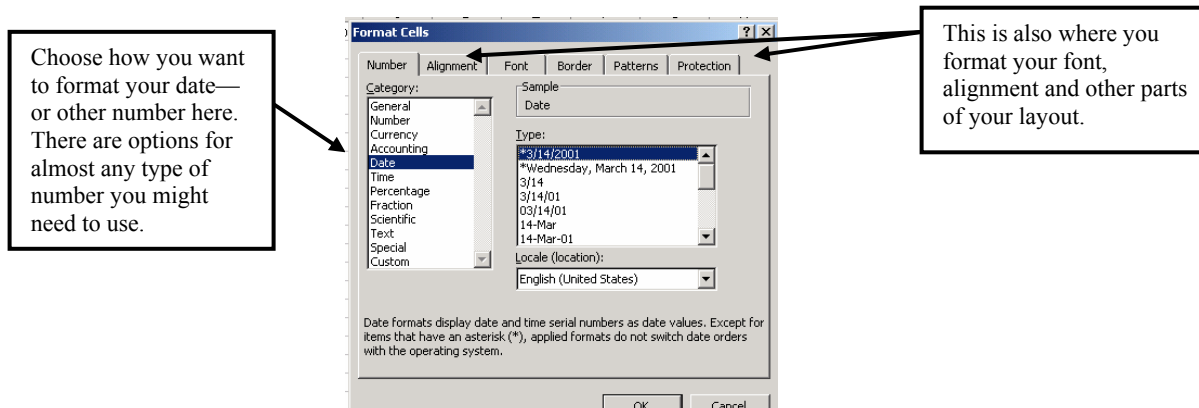
You will know it is highlighted by the darker box surrounding the cells—many get confused because the cell where you started does not look highlighted, but as long as it's in the box, it's fine.

Now put your mouse on the bottom right corner of your highlighted cells. You should see a thin plus sign—not the kind with arrows on each end.



Click and drag down to A9 and unclick. The pattern will continue through January 22nd.

To format the date differently, highlight the whole column by clicking on the A heading. Now click on **Format**→**Cells**→**Number**→**Date**. Pick one of the types of dates and click **OK**.

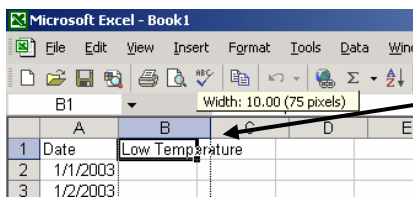


You can also format the cells to show currency symbols (without having to type them in), percentage signs, time in different formats, numbers with different numbers of decimal places (it will round or extend it to any given place value), etc.

Now click back in the cell A1. To move to the next cell to the right, you can just press tab. You are now in cell B1. Type in the words **Low Temperature**. (Let's see just how cold it has been). When you type it in, you'll see the whole word, but it will overlap into the C column.

To resize the cell to fit the whole word, first press enter.

Now move your mouse in between the B and C heading. When you see a thick vertical line with arrows on either side, click and drag the mouse till it fits the all of the text.



Put your mouse over the line and drag it to fit your text.

Now, starting in B2, type in the following temperatures. To use the keypad on the right of the keyboard, make sure the Num Lock light is on (otherwise, press the **Num Lock** key—then you can use the keypad).

Date	Low Temperature
1/15/2003	10
1/16/2003	18
1/17/2003	9
1/18/2003	-9
1/19/2003	-8
1/20/2003	14
1/21/2003	9
1/22/2003	1

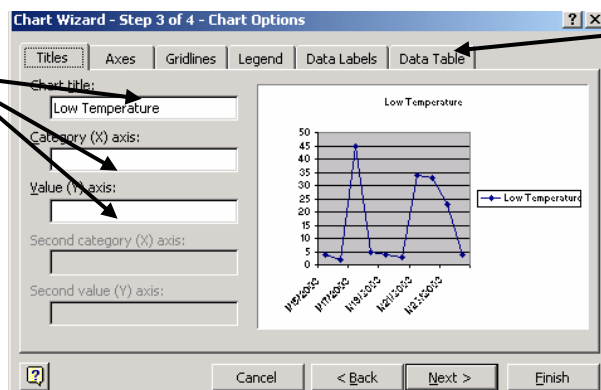
Graphing

To create a graph, highlight the data, from A1 to B10.

Click on the chart wizard on the toolbar (it looks like colorful books on a bookcase).

Pick a Column Graph and click **Next**.

Check that the **Data Source** is accurate. If you're not sure if your data is listed in columns or rows, try each and see which makes sense. Click **Next**.



Fill in the chart title, X and Y axis labels.

Sometimes you want to show your data in a neat package with the graph. Click here and select Show Data to do this.

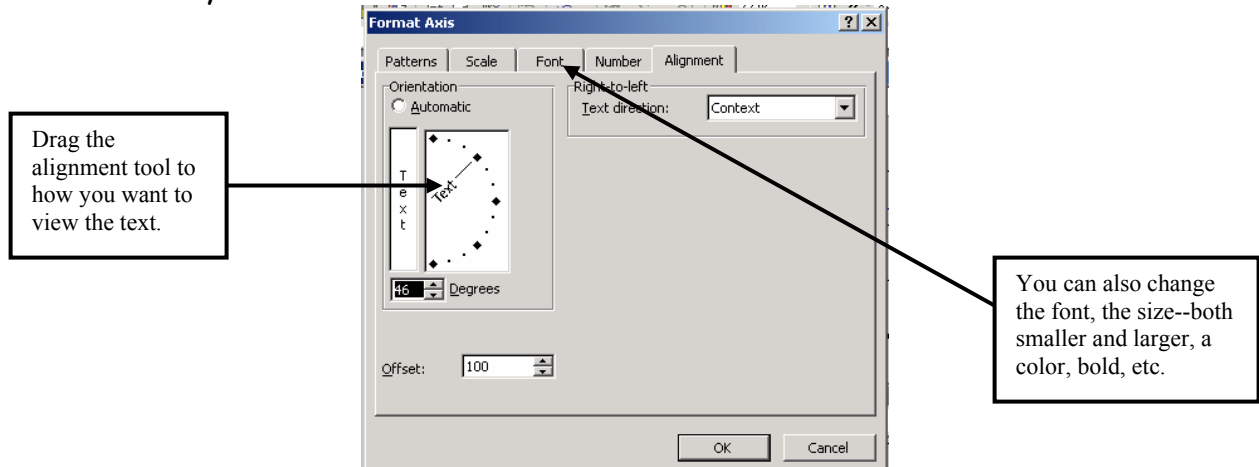
Click **Next**.

Choose to place the chart **As a new sheet** and click **Finish**.

Manipulating the Graph

To change aspects of the graph, like the color of the lines, the background, the font (size, alignment, etc.) first click on the graph area once. Double click on the data information right in the middle of the graph (had there not been negative days, these would show up on the bottom).

In the box that appears, choose **Alignment**. Sometimes because of the number of entries that you record data for, not all of the labels show up. You can align the text on it's side so that you can fit more in. Click OK.



To change the color of the background, double click on the grey area and choose from many options. Kids like the **Fill Effects** where they can blend different colors. Save this graph to the **Floppy Disk as Cold Graph**.

Graphing Multiple Series

This time you will graph multiple series of data.

Type in the following data or put in your own student data using the **Tab** to move horizontally along the rows or **Enter** to move vertically. (Do not type in the A,B,C... at the top or the 1,2,3... on the left—those are indicating the Column and Rows)

	A	B	C	D	E	F	G
1		9/23	9/30				
2	Sue Rodriguez	65	73	62	60	66	74
3	Phil Johansen	40	35	57	45	56	64
4	Mary Lind	88	75	79	77	80	75
5	Lila Gillmore	36	50	45	34	48	60
6	John Smith	84	96	80	70	84	85
7	Bill Adams	78	80	95	80	89	90

Widen the **A** Column to fit all the names—click between the **A** and **B** column and drag it to the width you need.

Notice the heading row is not complete. In addition to completing simple (+1) patterns, Excel will automatically fill in things in series - such as once a week dates. Highlight the 2 dates. Move cursor to the little square in the corner. Cursor will change from fat plus sign to a skinny plus sign. Drag to G1 to fill in the rest of the dates.

	A	B	C	D	E	F	G	H	I
1		9/23	9/30						
2	John Smith	23	28	33	39	35	40		
3	Mary Jones	12	17	22	26	26	27		
4	Sue Rodriguez	56	58	62	62	66	67		

Graphing the Class Data:

Highlight the whole chart by clicking in A1 and dragging to G7.

Click on the **Chart Wizard** icon.

Step 1 of 4 - Choose a line graph. **Next.**

Step 2 of 4 - Click **Next**

Step 3 of 4 -

On Titles tab
Fill in Chart title
Fill in Value (Y) axis.

Chart Wizard - Step 3 of 4 - Chart Options

Titles | Axes | Gridlines | Legend | Data Labels | Data Table

Chart title: Math Fact Tests

Category (X) axis:

Value (Y) axis: # Correct in 3 Minutes

Second category (X) axis:

Second value (Y) axis:

Cancel < Back Next > Finish

Click on **Axes** tab.
Click on **Category**
Click **Next**

Chart Wizard - Step 3 of 4 - Chart Options

Titles | **Axes** | Gridlines | Legend | Data Labels | Data Table

Primary axis

Category (X) axis

Automatic

Category

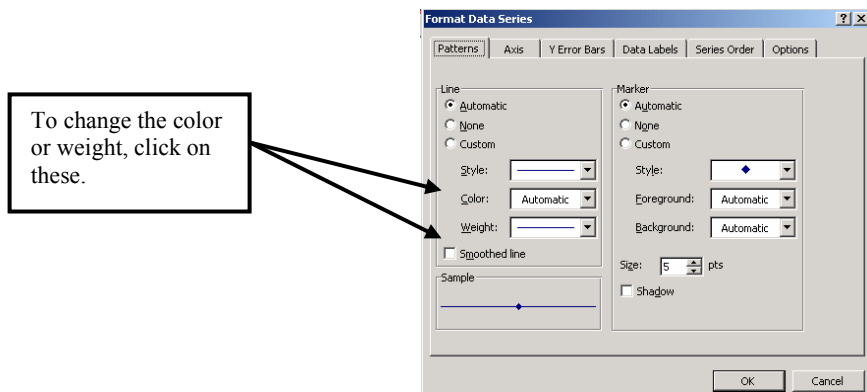
Time-scale

Value (Y) axis

Cancel < Back Next > Finish



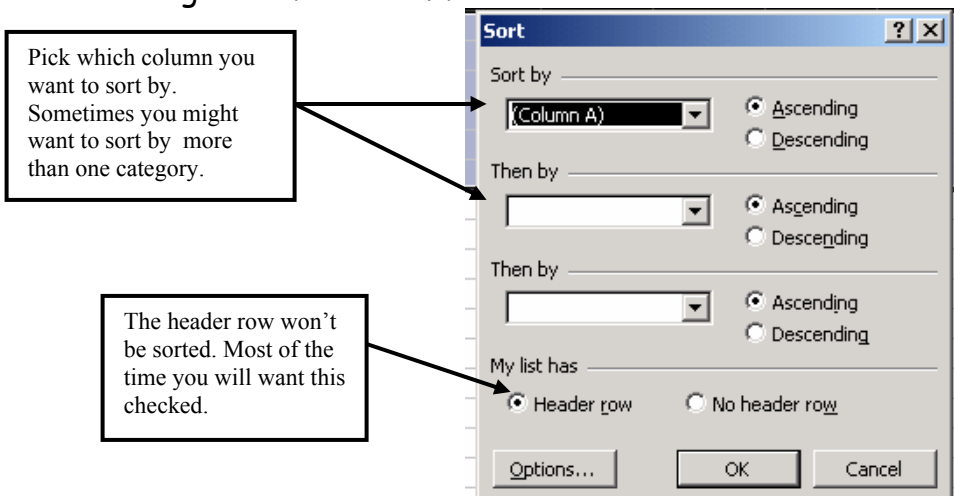
You can change the line weight (thickness) or color by double clicking on a line.



Sorting Data

You can sort data alphabetically, by score, or whatever type of field you have.

Click on **Sheet 1** (at the bottom left corner) to see the original spreadsheet again. To sort, click on **Data**→**Sort**. Choose column to sort by **Column A** (their names) and choose ascending order. Click **OK**.

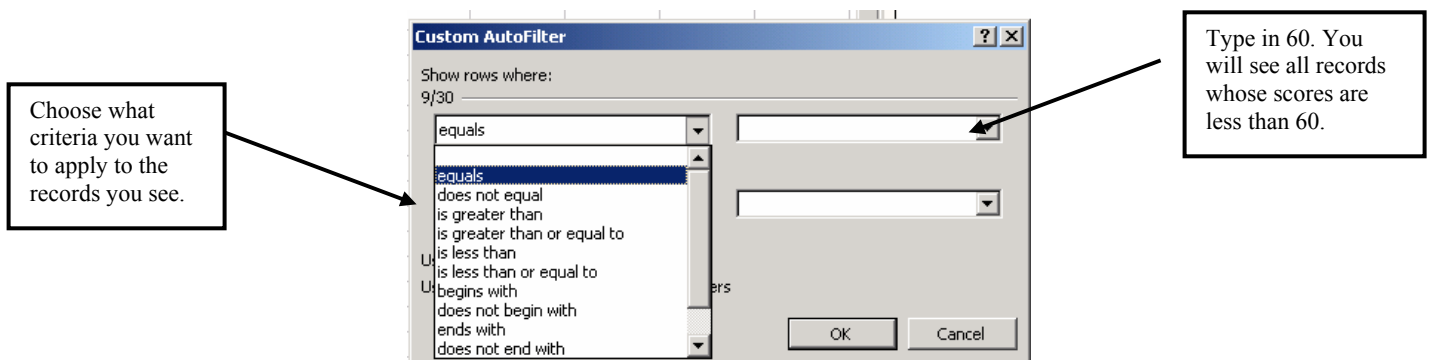


You can sort to see the rank in scores to find out who has done well on a topic, or who needs more work in an area.

Filtering Data to See Specific Entries

On the Menu, click on Data→Filter→Autofilter. When you do this, little arrows (for pull-down tabs) will appear at the top of each column. Click on the arrow in the B column. You will see a list of scores, ALL, or Custom. Pick Custom.

Pick **is less than or equal to** and type in 60 in the right field. Click **OK**.



You will see all students who scored less than 60 this test. You will see two records. Now click on the column B filter (the arrow) and choose **All**. Click on the Column A filter and choose a name to filter by.

You will now see just two rows—the heading row and the record.

Highlight this information and click on the chart wizard.

This time choose a column, bar, cylinder, cone or pyramid graph.

Make sure you check both columns or rows in Step 2 of 4 to get the correct data source.

Add chart title and label Y (or Z) axis.

Continue moving through the steps and choose to place the graph as an object in Sheet 1.

This way you can then look at the data right below the spreadsheet. Click on the filtering arrow above the name. Choose a different name—the graph changes with your choice (this is a great way to create individual progress reports for students or parents).

Creating a Graph Template for your Students

Sometimes you want the students to use a computer generated graph, but spend more time on analyzing the graph than actually creating it.

To create a template for your students, open a new excel spreadsheet.

In A1, put the title, **My Favorite Cookie.**

In A4 put the heading **Cookies.** In B4, put the heading **People.** Under Cookie, write **Oreo, Chocolate Chip, Oatmeal, Sugar, and Molasses.** Widen the column to fit the text. Under People, use the data collected on the poster in the room.

Step 1 of 4 Highlight from A5 to B9 (you don't have to highlight the *Cookie* or *People*.) Click **Chart Wizard** and pick a pie graph. Click **Next.**

2 of 4 Make sure the data range is for columns, click **Next.**

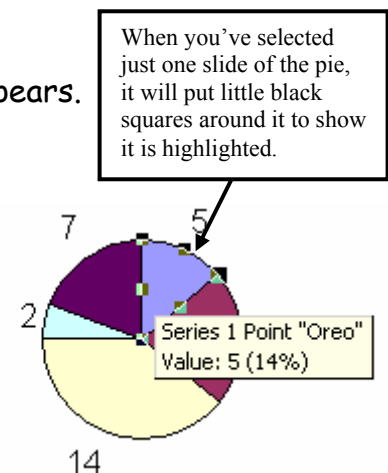
3 of 4 Put a title on the graph, and click the **Data Label** tab at the top of the box. Click on the **Value** box to show how many people liked each of the cookies. Click **Next.**

4 of 4 Choose to put the chart as an object in the sheet. Click **Finish.**

Move the graph so it is below the table you created earlier

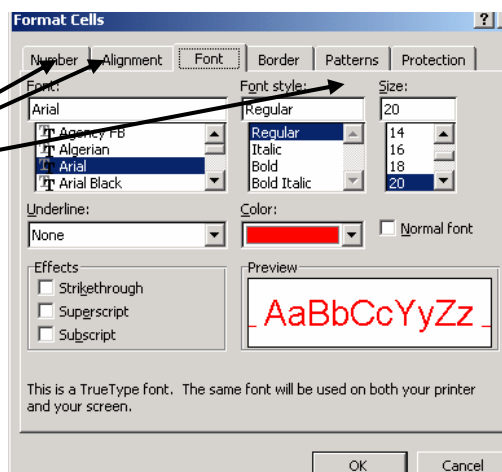
Now, erase all of the numbers in your table. Notice as the graph disappears. Put new numbers in table. The graph reappears with the new data.

Click once on the graph area, now once on one of the sections of the pie. This will select the individual slice for formatting. Now double click on that slice and change the color. Do this to at least one more slice of the pie. You could change each slice to match the cookie's color, or if you are graphing M&Ms, you can match those colors, etc.



Now you'll want to format the rest of the page so it looks inviting for students. Click on the title, click on **Format**→**Cells**→**Font**. Make the font size 20, bold, red.

You can format many aspects of the cell: font, patterns (background), border, alignment, what kind of numbers you are using, and protection (if you want to lock certain cells so they can't be changed).



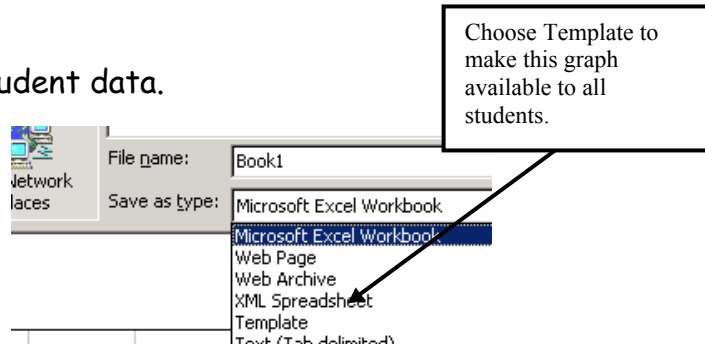
Highlight both of the headers (Cookies and People). **Format**→**Cells**→**Font**. Make them both bold and size 14.

Change the color of each of the Cookie categories in the table to match the pie graph colors.

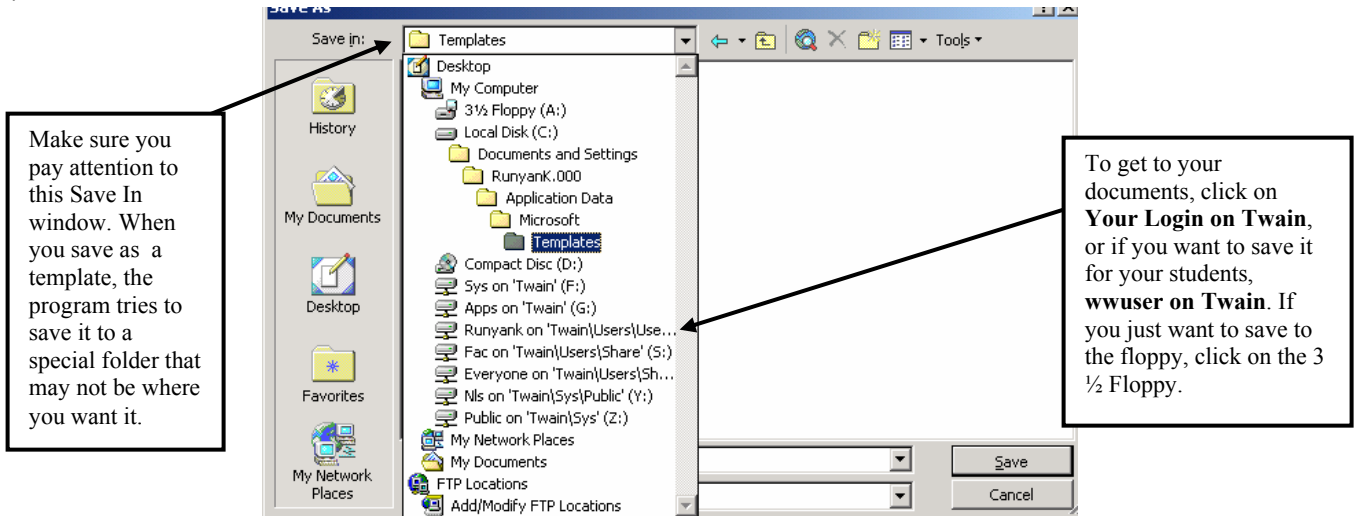
Delete all of the numbers so they are ready for student data.

To make this graph available to all of your students, **File**→**Save As**.

Below the name, choose **File Type**→**Template**.



Then choose where you want to save it. You can save it onto the disk or directly to your files.



Skills you have used in this Workshop

Inputting Data

Using Excel to Finish Series

Creating Graphs with One Set of Information

Creating Graphs with Multiple Sets of Information

Formatting Graphs for Color, Text, Alignment

Sorting and Filtering Tables of Data

Formatting Cells

Creating a Graph Template for Student Activities.

Ways to use these skills:

Create graphs to show data collected in the classroom or elsewhere—anything quantifiable. (class daily surveys, experiments, attendance, frequency of visits, etc)

Collect and view student progress in tests, assignments, homework.

Examine class data to see trends in achievement.

Set up graphs for students to analyze using real data that they can enter.