Microsoft Excel Basics

What you will learn from this lesson:

- Explore the workbook window.
- Navigate through the workbook.
- Create an Excel worksheet.
- Use automatic fill.
- Create formulas.
- Open an existing file.
- Create a chart.
- Save your work to a file.
- Quit Excel.

Starting Excel

1. Click the **Start** button in the lower-left corner.
2. Position the mouse pointer on **Programs**.
3. Click **Microsoft Excel**.

EXPLORING THE EXCEL WINDOW

When you start working in Excel, you begin using a workbook that contains screens called *worksheets*. They are identified as Sheet1, Sheet2, and so on. (Screens may vary, depending on the Office package you have.) As you become more familiar with the available options in Excel, you can customize the menus and add buttons to the toolbars.

The most recognizable difference between a word-processing document and a spreadsheet is that the spreadsheet uses rows and columns because most data entered onto a spreadsheet is numerical and is easier to read, understand, and manipulate when presented in columns. Here is the initial screen you see when you open Excel.

Use these buttons to add Web links, calculate an AutoSum, add formulas, and sort data.

The Chart Wizard helps you create charts.

The Drawing Tool helps you create WordArt and add shapes to worksheets.

Merges selected cells and then centers text in the cell.

Use these buttons to format numerical data.

The Excel 2000 **Standard** and **Formatting** toolbars includes buttons for formatting data and cells.

The **Name** box indicates which cell is selected.

The **Formula** box shows the data in the cell.

Column and **Row** numbers make it easier to know where you are on the worksheet.

Use these buttons to keep track of worksheets in a workbook

Scroll bars

Selected cell

AutoFill Handle

Click the Sheet buttons to move from one worksheet to another.

MOVING AROUND IN THE EXCEL WORKBOOK

There are a number of ways to move around in a workbook. Moving from one cell to another in Excel is quick and easy. The ways to move from cell to cell include clicking a cell or using the Go To command, the scroll bars, the arrow keys, or the HOME, END, PAGE UP, and PAGE DOWN keys.

To Move Within a Worksheet

- To select any cell, click it. For example, click cell A1.

- To move one cell to the right, press **TAB**, or to move one cell to the left, press **SHIFT**+**TAB**.

- To move one cell down, right, up, or left, use the arrow keys.

- To move to the uppermost-left cell, **A1**; press **CTRL**+**HOME**.

- To move to any cell, on the **Edit** Menu, click **Go To** and then type any cell number (for example, *J18*).

- To move down in the worksheet, press **PAGE DOWN**.

- To move up in the worksheet, press **PAGE UP**.

- To move to the first column of the worksheet, press **HOME**.

To Move From Worksheet to Worksheet

- Click the worksheet tabs in the left-bottom area on the worksheet.

CREATING A WORKSHEET

A worksheet is an effective tool for keeping track of all sorts of data. You can track student attendance, books you have read and their authors, a check register, a list of major purchases and the amounts, or student organization trips you have gone on and their dates and costs. If students are tracking any type of data, then creating a worksheet can help those students easily manage the information.

Creating a Worksheet to Calculate Data

A worksheet can also calculate data when you add formulas. Formulas in worksheets can save you time by doing many of the tedious calculations involved in record keeping for grades and attendance. It can also help you to teach students the relationships between numbers. For example, you can show students how much money can be saved in interest if you pay a loan in 36 months instead of 42 months. You can also keep track of loans, calculate averages for sports teams, determine gas mileage, or perform any other mathematical equations.

Create a car payment calculation

A car payment calculation requires a fairly simple formula. This activity illustrates the ease with which you can add formulas to your worksheets. To calculate the payment, you need a loan amount, the term or length of the loan, and the interest rate. The following activity teaches you to add a formula to calculate the monthly payment on the car loan.

To Calculate a Car Payment

1. On the **File** menu, click **New** and then double-click **Workbook**.
2. In cell **C2**, type *Car Payment Schedule* and then press **ENTER**.
3. Type the following text in the cells shown in the worksheet below:

	B	C	D
1			
2		Car Payment Schedule	
3			
4		DownPayment	None
5		Interest Rate	9.50%
6		Number of Months (term)	60
7		Loan Amount	13,500
8			
9			
10			
11		Monthly Payment	

4. Format the column width.
5. Click cell **D11**, and on the **Formula** toolbar click the **Edit Formula** button (the = sign).
6. Click the **Name Box** drop-down list and click **PMT**, if visible.
   - **Or** -
   Click **More Functions**, click **Financial** in the **Function** category, click **PMT** in the **Function** name, and then click **OK**.
7. In the **Rate** window, type *D5/12* (interest rate D5 divided by 12 months per year).
8. Click the **Nper** window and then type *D6* (the term of the loan).
9. Click the **Pv** window and then type *D7* (the principle value).
10. Click **OK**.
11. To change the months of the loan to **24**, type *24* in cell **D6**.
12. To change the interest rate to **12.5%** to demonstrate how the payment changes, type *12.5* in cell **D5**. Try several combinations on your own, and see how it works.
13. Save your work, and close the file.

Creating a Worksheet for Attendance and Grades

You can use Excel worksheets to collect and analyze information, including student records, lesson notes, school activity budgets, and professional organization information, and data. Students may use Excel for scientific data, weather journals, financial reports, nutritional diaries, or legislative voting records. Each worksheet can be easily customized and enhanced with graphics and artistic additions. This lesson teaches you to build a workbook for student attendance and a grade book.

Creating an Attendance worksheet

This activity is easier if you have a set of data available to add to the worksheet. Any type of information works. The example worksheet is a student attendance worksheet. The data used for this worksheet includes student names, student numbers, and dates.

To Create a Worksheet and Add Text

1. Open **Microsoft Excel**. A new workbook opens.
2. At the top of the worksheet, right-click the **A** (column header) and click **Format Cells**.
3. On the **Number** tab in the **Category** box, click **Text** and then click **OK**.
4. At the top of the worksheet, right-click the **E** (column header) and click **Format Cells**.
5. On the **Number** tab in the **Category** box, click **Text** and then click **OK**. This keeps the student numbers in this column exactly as you type them.
6. Click cell **A1**. Click, hold and drag to select cells **A1** through **D1**.
7. Right click within the selected cells and click **Format Cells**. The **Format Cells** dialog box opens. Click on the **Alignment** tab.
8. In the Text alignment section, click the **Horizontal:** down arrow and select **Center.** Click the **Vertical:**
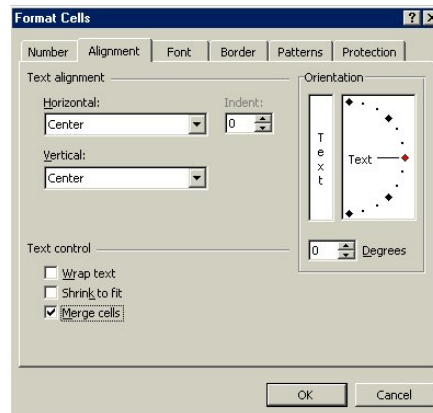
down arrow and select **Center.**

9. In the Text control section, click the **Merge cells** check box.
10. Click **OK**.
11. Click cell **A2**. Click, hold and drag to select cells **A2** through **D2** then drag down to select cells **A3** through **D3**. Release the mouse button.
12. Click the **Merge and Center** button on the **Formatting** Toolbar.
13. Click cell **A2**. Type *Teacher: and your name.* Press **Enter.**
14. Click cell **A3**. Type the class period or subject area.
15. Click cell **B6**. Type *Last Name*.
16. Click cell **C6**. Type *First Name*.
17. Click cell **D6**. Type *MI* (middle initial).
18. Click cell **E6**. Type *Student No. .*
19. Click cell **A7** and type in the number *1*. Repeat numbering down column A for the total students in class. Note: When you print this sheet these numbers will be the row numbers as in your traditional roll book.
20. Click cell **B7** and type a student last name (for example, *Jensen*).
    The words may not be entirely visible in the selected cell. The information is still there, and later, you will format the column so you can see all of the information.
21. Click cell **C7** or press **TAB**. Type a student first name (for example, *Camille*)
22. Click cell **D7** or press **TAB**. Type a student middle initial (for example, *E*)
23. Click cell **E7** or press **TAB**. Type in the student's **ID number**.
24. Click cell **B8**. Type the next student's last name then press the **right arrow**.
25. Type the student's first name, press the **right arrow** and type the student's middle initial.
26. Press the **right arrow** or **Tab** and type the **student ID number**.
27. Continue to type each of the names and student numbers for the students in one class. For this exercise, enter in data for at least five students.
28. Double-click the **Sheet 1** tab in the lower-left corner and type the *Class Period or Subject.*
29. On the **File** menu click **Save As:**. The Save dialog box opens, select the desired location to save the worksheet and then type in file name ***Attendance Template*.**

To Use Automatic Fill

1. Open the **Attendance** worksheet if it is not already open.
2. In cell **F2**, type *Monday* or *Mon.*.
3. Click and drag the fill handle to select the cells through cell **J2**. Do not save your changes.

To Add Dates to the Attendance Worksheet

1. Click cell **F2** to select it.
2. Type the first letter of the day class begins, i.e. M for Monday. Press the Tab key or right arrow to move to the next cell, **G2**. Complete the first 15 days, cells **F2** through **T2** (a traditional roll book contains 15 columns per page for recording attendance and/or grades).
3. Click cell **F3** to select it. Type the date of class in ***mm/dd*** order.
4. With the cell still selected, place the pointer over the fill handle until the pointer turns into a + sign.

5. Click and drag the fill handle across the next 4 cells in the row. Excel automatically fills in the next four dates.
6. Click cell **H2** and type in the mm/dd for the beginning of the next week. Repeat steps 4-5 to fill in the dates for the next week. For this exercise, two weeks will be sufficient.
7. On the left side of the worksheet, right-click the row 3 header and click **Format Cells**.
8. On the **Number** tab in the **Category** box, click **Date**.
9. In the **Type** list, select the date format you want and click **OK**. All the dates change to the selected format.
10. Save the worksheet.

To Adjust Column Widths

You may want or need to adjust the width of one or more columns in your worksheet in order to allow for better spacing between columns or to maximize the available space on the worksheet.

1. When "#######" appears in a cell, the cell is too narrow for the data to be displayed.
2. Select the columns in your worksheet by clicking the **A** column header and dragging across to the last column in which you have dates entered.
3. Move the pointer over the border between any two-column headers until the pointer changes to a double arrow.
4. Double-click. The columns automatically adjust the width to the longest text in their respective columns.
5. On the **File** menu, click **Save As** and type *Attendance* in the **File name** box.

Sorting Functions in Excel

Recording names and student numbers can be a full-time job. Just as soon as you have everyone in the correct order, you have a new student whose last name starts with the letter C. With Excel, sorting the names by last name, or any other order, is quick and easy. Using Excel, you can track information for each student, and then organize it according to importance or category.

To Alphabetize Names

1. Open the **Attendance** worksheet if it is not already open.
2. Select cells **B7** through **E7** and then down to the end of the list in **column B** so that all names and student numbers are selected.
3. On the **Data** menu, click **Sort**.
4. Under **Sort by**, select **Last Name** and then click **Ascending**.
5. Under **Then by**, select **First Name** and then click **Ascending**.
6. Under **Then by**, select **MI** and then click **Ascending**.
7. Click **OK**.
8. On the **File** menu, click **Save**.

Shortcut: Once the desired cells to sort are selected click the **Sort Ascending** button on the **Standard** Toolbar.

To Create the Attendance Workbook

1. Open the **Attendance worksheet** you already created.
2. On the **Edit** menu, click **Move or Copy Sheet**.
3. In the **To book** dialog box, click **(new book)**.
4. Click the **Create a copy** check box.
5. Click **OK**. A new workbook is created containing a copy of the Attendance worksheet.
6. Save the workbook by choosing **Save As…** from the **File** menu. Name this file: *Attendance 2001-2002.*
7. On the **Edit** menu, click **Move or Copy Sheet**.
8. In the **To book:** dialog box select **Attendance 2001-2002.xls.**
9. In the **Before sheet:** section select (**move to end**)
10. Click the **Create a copy** check box.
11. A new worksheet is inserted and identified as **1ˢᵗ Period (2)** on the tab.
12. Repeat steps 8 through 10 until there is one sheet for each class period.
13. Double-click the tab **1ˢᵗ Period (2)** then type **2ⁿᵈ Period**. Repeat until all tabs are labeled correctly. Save the workbook.
14. Click the **2ⁿᵈ Period** tab then click cell **B7** and type the last name of a student in this class period. Tab to **C7** and type the first name of the student then tab to **D7** and type the MI of the same student. Tab to **E7** and type the student's ID number. Save the workbook.
15. Click the 3ʳᵈ Period tab and repeat step 9 until all student names have been entered. Repeat until all student names have been entered for each class period.
16. Save the workbook.
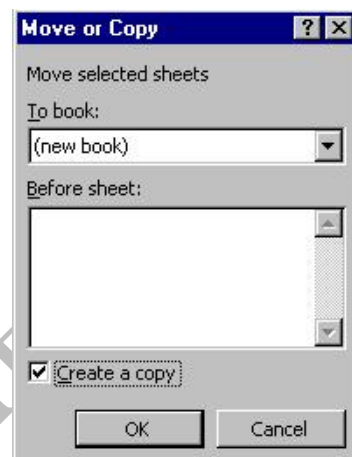
Note: If you are a self-contained or elementary teacher and teach one group of students you may want to label the tabs by subject area rather than class period (middle and high school labels).

Password Protecting the Workbook

Because this workbook contains sensitive information, you can add a password to the document. When a workbook is password-protected, no one can read or change information in it without using the password.

To Password Protect the Workbook

1. On the **File** menu, click **Save As**.
2. In the **Save As** dialog box, on the **Tools** menu, click **General Options**.
3. In the **Password to open** box, type a password and then click **OK**.
4. In the **Reenter password to proceed** box, type your password again and then click **OK**.
5. Click **Save**.
6. If prompted, click **Yes** to replace the existing file.

Building a Grade Book

The days of the written grade book, while far from gone, are rapidly changing, and educators are taking advantage of the ease of use and power of the worksheet to make tracking student achievement less burdensome. Using Excel to create and maintain your grade book can save you time and energy and eliminate clerical mistakes. Use Excel to create an electronic grade book to keep track of student achievement and do more sophisticated reporting of student progress.
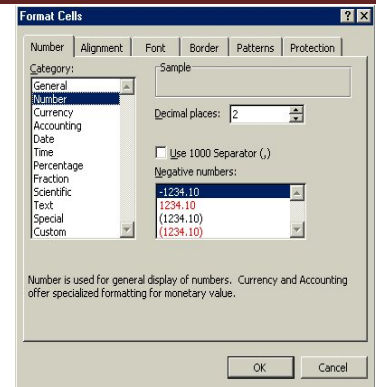
To Create the Grade Book Worksheet

1. Open the **Attendance Template** workbook.
2. Click the **1st Period** tab. On the **Edit** menu, click **Move or Copy Sheet**.
3. In the **To book** dialog box, click **(new book)**.
4. Click the **Create a copy** check box.
5. Click **OK**. A new book opens titled **Book2**.
6. Save the new book and name it **Grade Book**.
7. Right-click the row **4** header and click **Insert**. A blank row is inserted.
8. Repeat step 7 to add another blank row. There should be two blank rows inserted.
9. Click cell **A1** and type **Grade Book: 1st Nine Weeks** or put your own title**.**
10. Press **DOWN ARROW** to go to cell **A3**. Type the subject area of this class (for example, Science, English, or Math) and the class period if desired.
11. Click cell **U2** and drag to cell **U3**. Right-click within the selected cells and click on **Format Cells…**. The **Format Cells** dialog box opens with the **Alignment** tab active in the box.
12. In the Text alignment section, click the **Horizontal:** down arrow and select **Center.** Click the **Vertical:** down arrow and select **Center.**
13. In the Text control section, click the **Wrap Text** and **Merge cells** check boxes. Click **OK**.
14. Click cell **U2** and type *Total Points*.
15. Click cell **F4** and drag down to cell **F5**. Right-click within the selected cells and click on **Format Cells…**. The **Format Cells** dialog box opens with the **Alignment** tab active in the box.
16. In the Text alignment section, click the **Horizontal:** down arrow and select **Center.** Click the **Vertical:** down arrow and select **Center.**
17. In the Text control section, click the **Merge cells** check box. Click **OK**.
18. Click cell **G4** and drag to cell **G5**. Right-click within the selected cells and click on **Format Cells…**. The **Format Cells** dialog box opens with the **Alignment** tab active in the box.
19. In the Text alignment section, click the **Horizontal:** down arrow and select **Center.** Click the **Vertical:** down arrow and select **Center.**
20. In the Text control section, click the **Merge cells** check box.
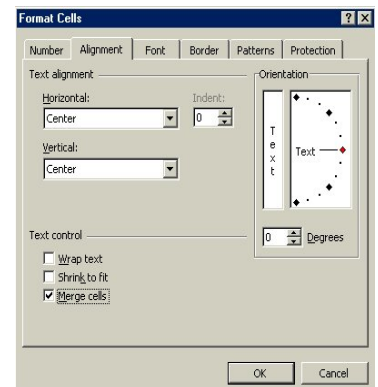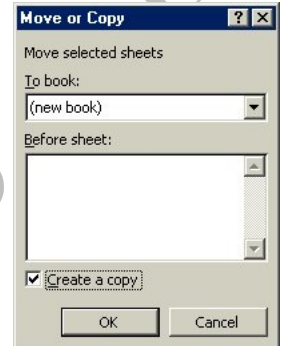
21. Click the **Number** tab. In the **Category:** box click **Number** then select the number of **Decimal places:** using the up/down arrows on the right of the box (the default is 2 decimal places). Click **OK.**

22. Repeat steps 13-17 until cells 4 and 5 in each column, **F** through **U**, are formatted.

Shortcut: Click in cell **F4**. On the **Edit** menu select **Copy** (Ctrl +C). Click in cell **G4** and then select **Paste** (Ctrl + V) from the **Edit** menu. Press **Tab** or the **right arrow** key to advance to the next cell and repeat until all cells through **U4** are formatted.

23. Click cell **V3** and type *Average***.**
24. Click cell **E4** and type *Possible Points*.
25. Save the grade book worksheet.

To Create the Grade Book Workbook

1. Open the **Grade Book** worksheet if not already open.
2. On the **Edit** menu, click **Move or Copy Sheet**.
3. In the **To book** dialog box, click Grade Book (default has this already selected).
4. In the **Before Sheet** dialog box, click **(move to end)**.
5. Click the **Create a copy** check box.
6. Click **OK**.
7. Repeat steps 2 through 6 until there is one sheet for each class period and/or subject.
8. Save the workbook.
9. Double-click the tab "*subject*" **(2)** then type the next subject and/or class period. Repeat until all tabs are labeled correctly.
10. Choose **Save As…**from the **File** menu. Name this file: **Grade Book 2001-2002** then click **Save**.

Copy and Paste from One Workbook to Another

Now that you have copied the first grade book worksheet each subject/class period has a separate worksheet. You must enter the names of the students scheduled in each subject/class period since each worksheet contains the names of the students in the 1st Period class (if you teach the same students all day then you will not need to complete this step).

1. Open the **Attendance 2001-2002** workbook or if it is already open, click the **Attendance 2001-2002** button on the task bar to switch to that worksheet. Click on the 2nd Period tab.
2. Select cell **B7**. Press the **SHIFT** key and then click in the row of column E containing the last student name and student number entered (click the down arrow to scroll down if all names are not visible on the screen). Then, release the mouse button. All selected cells are highlighted.
3. Right-click anywhere in the selected cells area and click **Copy**.
4. Switch to the **Grade Book 2001-2002** workbook. Click on the tab for the 2nd Period and select the same number of cells you selected in the **Attendance 2001-2002** worksheet, starting from cell **B7**.

5. Right-click the selected cells and click **Paste**. The names are copied.
6. Save the Grade Book.
7. Repeat steps 1-6 for each class period/subject.
8. Save the Grade Book.

Enter Grade Labels in the Workbook

9. In cell **F33**, type *Test 1 16-Oct-1999*.

10. Move to the next cell in the row and repeat the step with the following column headings (these headings are used later for an example of calculating grades):

When you are finished, cells **F33:T33** should be filled with the above titles.

11. Adjust the column widths on the worksheet.
12. Save your work.
13. To rotate text and cells, see "**Formatting rows and columns**" later in this handout.

Entering and Formatting Titles

Using titles on the worksheets makes it easier to read and understand the information shown. You can retain the existing styles, create your own styles, or customize your own workbook template. The next exercise illustrates how easy it is to enter and modify font styles and sizes in your worksheet.

To Enter and Format a Title on the Worksheet

1. With the **Grade Book** worksheet open, click cell **A1**.
2. On the **Formatting** toolbar, click the **Font** box and then click **Architect**.
3. On the **Formatting** toolbar, click the arrow next to the **Font Size** box, click **14**, and then click **Bold**.

Formatting Rows and Columns

Adjusting rows and columns so that the text within them is aligned left, centered, aligned right, or justified is quick and easy. Select the row or column and then use the buttons on the **Formatting** toolbar.

Rotating text on a worksheet is useful when you are recording grades and want to clearly label assignments. This feature allows you to format any cell on your worksheet. If you try to rotate merged cells, you may find that only the first letter displays.

To Justify Text in Rows

1. On the **Grade Book** worksheet, select cells **A2** through **E2**.
2. On the **Formatting** toolbar, click **Merge and Center** 📷 to place text in the center of a single cell or several cells.
3. Select cells **A3** through **E3** click **Merge and Center** 📷 to place text in the center of a single cell or several cells.
4. Right-click on the **E** column heading containing student ID numbers.
5. On the **Formatting** toolbar, click **Align Right**.

To Rotate Text in Rows

1. In the **Grade Book** worksheet, click cell **F33**.
2. On the **Format** menu, click **Cells** (shortcut: right-click and click Format Cells or press Ctrl + 1).
3. Click the **Alignment** tab.
4. Drag the **Orientation bar** to **90º**, or type *90* in the **Degrees** box.
5. Click the **Border** tab and click **Outline** and **Inside**.
6. Click **OK**. The text and cells are now sideways. Format the column widths.

To Change Cell Indent

1. Select cells **B7** to the last cell in the column containing a student name.
2. Click **Increase Indent** on the **Formatting** toolbar. Click again. Notice how the selection is now indented.

To Complete the Data Entry

1. To fill in the scores for the students, place the cursor in the appropriate cell.
2. Type in the test, quiz, or homework score where appropriate. Enter **100** into cells **F4** through **T4**. This will reflect the highest points possible.
3. Save your work.

Hiding Columns and Rows

Hiding columns is an easy way to "fold" away columns you need but prefer not to see for a particular process. This is helpful if you want to post test scores and grades on a bulletin board while still protecting student privacy. Hiding columns is useful in maintaining complete records in a single file.

To Hide Columns

1. Open the **Grade Book** workbook if it is not already open.
2. Click the column **B** header to select the column.
3. On the **Format** menu, point to **Column** and then click **Hide**.
4. To **unhide** your columns, on the **Format** menu, point to **Column**, and click **Unhide**.

To Hide Rows

1. Open the **Grade Book** workbook if it is not already open.
2. Select the starting row header, row **8,** and drag to highlight the names below that you wish to hide.
3. On the **Format** menu, point to **Rows** and then click **Hide**.
4. To **Unhide** the rows, on the **Format** menu point to **Rows** and then click **Unhide**.

Adding Formulas to a Worksheet

Earlier in this handout, you added a formula to a worksheet to calculate a car payment. You can also add any formula that you write yourself. Adding formulas to the grade book worksheet increases your productivity by doing the tedious grade averaging for you. The formulas, once in place, automatically calculate the grades as you type the scores. The following section teaches you how to add formulas to worksheets.

Order of Operations in Excel

There are many formulas that help you calculate or analyze everything from finances to statistical sampling plans. When you combine several mathematical steps in a formula, they are performed in a specific order. Excel starts calculating from the left to the right according to the following order of operations:

Order	Symbol	Description
1	( )	Parentheses
2	-	Negative number if used with one operand
3	%	Percentage
4	^	Exponentiation

5	* and /	Multiplication and division
6	+ and -	Addition and subtraction
7	&	Connects two text values to produce one
8		Continuous text value
9	=,<,<=, >, >=, <>	Comparison operators

For reference, the Comparison Operators are:

- =   Equal to
- <   Less than
- <=   Equal to or less than
- >   Greater than
- >=   Equal to or greater than
- <>   Not equal to

For examples and meanings of calculation operators in formulas, click Office Assistant and then type *Operators*.

Adding Formulas to Your Worksheet

Adding formulas to your grade book allows Excel to do the most difficult part of assigning student grades. You can add formulas that add the point totals, calculate percentages, and assign letter grades. It is all done with simple mathematical formulas.

In order to see the formula work, you must have numbers in the cells representing student points earned on tests, quizzes, and assignments.

To Add a Formula for Totals

1. Open the **Grade Book** if it is not already open. First you want to get a total for the points earned.
2. Click cell **U2** and type *Total Points*.
3. Click cell **U4**.
4. Click the **Edit Formula** button (the = sign).
5. Click the **Name Box** drop-down list and then click **SUM**.
6. In the **Number 1** box, type *F4:T4* (the colon indicates a series).
7. Click **OK**.
8. Click cell **U7**.
9. Click the **Edit Formula** button (the = sign).
10. Click the **Name Box** drop-down list and then click **SUM**.
11. In the **Number 1** box, type *F7:T7* (the colon indicates a series).

12. Click **OK**.

Notice that the formula itself shows in the formula bar when the cell is selected. To modify or change the formula, simply click in the **formula bar**, make the changes, and then press **ENTER**.

13. You have the total for the points possible, but you need the sum for the students' columns. You could type the formulas in cells U6 through U12. But that would take some time and you might make some mistakes. Excel can make it very easy for you. **Autofill** allows you to drag the fill handle of a cell to copy the formula from that cell to other cells in the same row or column.

To fill all of the other cells, select cell **U7**, place the cursor on the fill handle in the lower-right corner of the cell, and drag to the last cell in the row. Excel not only copies the formula into each cell, but also adjusts the formula for each column so that it is correct for that column of numbers.

To Add a Formula for Percentages

1. Click cell **V3** and type *Average*.
2. Click cell **V7**. You need a formula here that divides the number of points earned by the number of possible points. Then you'll convert it to a percentage.
3. Type *=U7/U4* (the cell with the total divided by the constant total in cell U4).
4. Press **ENTER**. The number 1 appears in cell **V7**.
5. To change the number to a percentage, click cell **T7** and then on the **Format** menu, click **Cells**.
6. Click the **Number** tab. In the **Category** box, click **Percentage**.
7. In the **Decimal Places** box, type *1*.
8. Click **OK**. You should now see 100.0% in cell **V7**.
9. Now, just as you copied the formulas earlier, you drag the fill handle to copy the formula in **V7** to the rest of the column. Because you used U7 instead of **U7**, the number does not adjust to the total in the column in which you are working. To find out more about constants, ask the Office Assistant.
10. Save your work.

Creating a Chart with the Chart Wizard

Presenting information in a chart can be a very effective way of communicating numerical data that otherwise might be too confusing or complicated. Since most people are highly visual, a chart added to text can really catch the audience's attention and help to inform and persuade them more thoroughly.

The Chart Wizard shows each step along the path from entering raw data to completing a graph. You can transform numbers into graphs, illustrating the power of visually oriented information to strengthen presentations.

To Use the Chart Wizard

1. Open the **Grade Book** workbook.
2. Select the test data in the **Grade Book** worksheet, including the headings and student numbers, but not the main title or totals (cells B8 through F13).
3. On the **Standard** toolbar, click **Chart Wizard**.
4. On the **Standard Types** tab, in **Chart type**, click **Column**.
5. In **Chart sub-type**, click **Clustered Column.** Click **Press and hold to view sample** to see a sample of your data in the clustered column 3-D format.
6. Click **Next** twice.
7. In the **Titles** tab, in **Chart title**, type *Six Week Grades*.
8. In the **Category (X) axis**, type *Number of Test, Quiz, Assignment*.
9. In the **Value (Z) axis**, type *Points*. (The Z-axis title is available but the Y-axis is not, because it extends back into the chart.)
10. Click the **Gridlines** tab to select type of lines to show on your graph.
11. In **Category (X) axis**, clear the **Major gridlines** check box.
12. In **Value (Z) axis**, select **Major gridlines** and **Minor gridlines**.
13. To move the legend to the bottom, on the **Legend** tab, click **Bottom**.
14. Click **Next** for **Chart Location**.
15. Click **As new sheet**.
16. Click **Finish** to complete the chart process.

Attaching the graph as a new worksheet makes it easier to print a chart. You now have a readable and easy-to-understand chart. Attaching the chart as an object has the advantage of providing an immediate view of changes to the chart as you change the data.

Enhancing Chart Titles

Rotating the Z-axis title gives the chart more room. The main graph title is easier to read with a larger font size. Here's how to change them.

To Rotate Z-axis Titles and Enlarge Chart Titles

1. In the chart from the previous activity, click the **chart title** (*Test Grades*).
2. On the **Formatting** toolbar, change the **font size** to **20** point.
3. Right-click the **Z-axis title** (*Points*).
4. Click the **Format Axis Title** dialog box.
5. On the **Alignment** tab, click the **text line**, and drag it up to the top of the semicircle to **90 degrees**.
6. Click the **Font** tab and then change the font to **bold** and **14-point**.
7. Click **OK**.
8. Right-click the **X-axis title** (*Student Numbers*).
9. Click **Format Axis Title**.
10. Click the **Font** tab and then change the font to **bold** and **20-point**.
11. Click **OK**.

Changing Colors of Data Bars

You can also change the data bar colors to enhance your chart or to draw attention to information. Perhaps you want to draw attention to the most recent test so students can easily compare this score with previous test scores.

To Add Colors to Enhance Data Bars

1. Right-click the first data bar.
2. Click **Format Data Series**.
3. On the **Patterns** tab, click **Dark Green** in the fourth row.
4. Click **OK**.
5. Right-click the second data bar and change the color to **Dark Blue**.
6. Right-click the last data bar and change the color to **Yellow**. The brighter color in the last bar calls attention to that bar.

Rotating Charts

Sometimes it is easier to understand a chart if it is viewed in 3-D. Using Excel you can modify your chart to show it from any view—top, bottom, right, left--or you can create 3-D charts.

To Rotate a Chart

1. Right-click in the center of the chart.
2. Click **3-D View**.
3. In the **Elevation** dialog box, type *15*.
4. In the **Rotation** dialog box, type *40*.
5. Click the **Auto scaling** and the **Right angle axes** boxes.
6. Click **Apply**.
7. Click **OK**, and save your work.

NOTE: If your image gets blurry, return to the 3-D dialog box and click Default**.** Excel returns the chart to the "normal" 3-D settings.

PUTTING IT TOGETHER

As you experiment with the worksheets in Excel, you will continue to learn more about how to use Excel worksheets and workbooks in and out of the classroom. You may want to try some of the following activities:

- You can easily insert Excel data charts and graphs into PowerPoint presentations. The next time you create a presentation, insert a data table and graph. Any changes you make to the Excel worksheet are automatically updated in your PowerPoint presentation.

- Your monthly reports can be updated as quickly as you change the data. In letters to your students' parents, you can quickly update student scores and grades.

- Use Excel in conjunction with Word to send students or parents a customized letter regarding their class progress using the Mail Merge feature in Word.

- Track club or classroom budgets.

- You can use Excel for personal record keeping, such as taxes and money management.

- With Excel you can create all kinds of graphs and charts that visually explain numerical data. Create a budget and track expenses for school projects.

- Calculate interest rates, both simple and compound.

Using Excel in the Classroom

- Students can reinforce basic mathematical processes using Excel to produce charts and tables.

- By adding well-designed charts and tables to reports, students can enhance both their understanding of the content and their presentation of the information.

- Have students plot their progress in your class. A good starting activity is to have the students create the chart on graph paper so they can get an idea of what the chart will look like. Then have students practice explaining what the chart is supposed to accomplish. If the chart doesn't help explain the data, it has not served its purpose.

- Give students a completed chart and see if they can reconstruct the underlying worksheet. This goes a long way toward helping them understand the relationship between the data and the chart.

- Insist that reports and research papers contain some type of chart to help support their findings. Encourage students to import other types of graphics and information from different electronic sources to enhance and complement their documents.

- Have students visit a Web site related to a topic you are studying currently. Have them find tables of information, download them, and plot the information in a chart.

- Have students find charts in printed publications. Discuss what the charts mean.

- Teach principles of accounting and financial management.

- Demonstrate numerical concepts—for example, showing the relationship between numbers and their concrete representation in charts and graphs.

- Demonstrate how different types of graphs can be used to represent the same series of data. Compare how the data looks in a bar graph as opposed to a pie chart.

- Store and analyze data from classroom experiments.

- Compare data collected by a group of collaborating classrooms within one school or around the world.