
Lesson 3 Making Calculations

Lesson Topics

- Using Operators to Make Calculations
- Filing Practice

Lesson Objectives

At the end of the lesson, you will be able to:

- Use the addition, subtraction, multiplication, and division operators to enter calculations;
- Save and open documents.

Student Files Used

You will not use any files from your student folder.

Student Files Created

You will save the following new files to your student folder:

- School Costs
- Take Home Pay
- Payroll
- Party

Using Operators to Make Calculations


Excel uses *operators* to add, subtract, multiply, and divide. Below are the most common operators. You have already used the first two in your formulas.

+	adds	*	multiplies
-	subtracts	/	divides

Using Addition

You are going to practice adding numbers by typing a worksheet of expenses. You are also going to learn to use a variety of methods, including the ARROW keys, to enter values and text.

1. You are going to open a new workbook.

Verify that a new workbook is on the screen – on the title bar will appear *Book1*, *Book2*, etc. If there is another name, click the New button → 

A new workbook appears.

2. **If necessary, maximize the workbook.**
3. First, you are going to type the text.
Go to A2.
4. **Type COSTS and tap the ENTER key.**
5. **In A3, type Tuition and tap the DOWN ARROW key.**

Notice how *Tuition* was entered in the cell.

6. **In A4, type Books and tap the DOWN ARROW key.**
7. **In A5, type Other and tap the UP ARROW key until you are in A1.**
8. **Go to B1.**
9. **In B1, type Susan and tap the TAB key.**
10. **In C1, type John and tap the TAB key.**
11. **In D1, type Judith and tap the LEFT ARROW key until you are back to B1.**
12. You are going to center the text in B1, C1, and D1.
B1 should be the active cell.
13. **Click the Center button.**
14. **Go to C1 and click the Center button.**

15. Go to D1 and click the Center button.
16. Go to B3 and enter the following values in your workbook. Don't type any commas. You will do that a little later.

	A	B	C	D
1		Susan	John	Judith
2	COSTS			
3	Tuition	2000	3000	4000
4	Books	85	90	95
5	Other	113	200	300

Now that you have typed the text and values, you are going to enter the formulas in row 7.

1. Go to A7.
2. Type Total and tap the TAB key.
3. In B7, type this formula: =B3+B4+B5
4. Tap the TAB key.
5. In C7, type this formula: =C3+C4+C5
6. Tap the TAB key.
7. In D7, type this formula: =D3+D4+D5
8. Tap the ENTER key. Row 7 should have these values:

7	Total	2198	3290	4395
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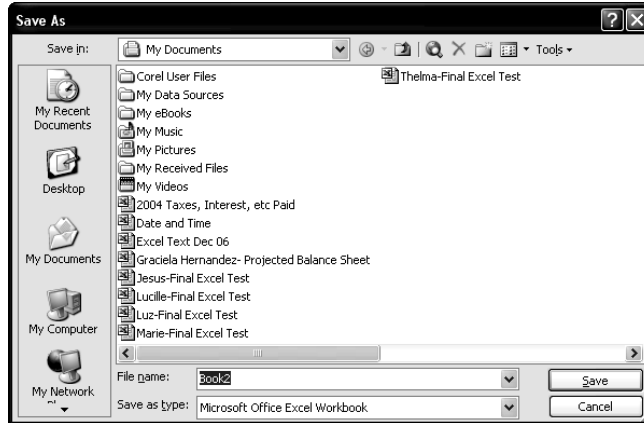
9. When finished, change some numbers and watch the results change.

Saving a Document

You are going to save your workbook and name it *School Costs*. Be sure you have followed the instructions on page viii to copy the student files on the CD that comes with this manual. When you copied the files, a folder was created on the hard disk named *C:\FLS Excel2003 Student Files*. This is the location where you will be opening and saving files throughout this course.

1. On the File menu, choose *Save*.

2. The Save As dialog box appears.



3. Click anywhere in the *Save in* drop-down list box.

4. In the list that appears, click the item with C:. You can ignore any text such as *Local Disk* that precedes it.

Notice C: in the *Save in* box. In the list is the contents of C:, which is the hard disk.


5. Double-click on *FLS Excel2003 Student Files*.

The *Look in* box should have *FLS Excel2003 Student Files*. These are the files that were copied from your CD and this is where you will be saving all new files you create.

6. Change the contents of the *File name* text box to: School Costs

7. Click the *Save* button.

Your document has been saved. Notice its name on the Title bar. It is in two places — in *memory*, which is the version on the screen, and on the hard disk in a folder named *C:\FLS Excel2003 Student Files*.

Note: When you save a document, you can also click the Save button  on the Standard toolbar or use the keyboard command, CTRL/S, which is probably the easiest method. The first time you save a document, you can use either the *Save* or *Save As* command on the File menu. Both will produce the Save As dialog box which lets you name a document and indicate its location. After the first time, the *Save* command is

used. (The *Save As* command can also be used when you want to save the document to an identical copy, but with a different name.)

Note: To learn more about saving and opening files, see the FLS manual, *Word 2003 Beginning and Beyond*.

Using Subtraction

You are going to create a worksheet that uses subtraction.

1. You are going to keep the document *School Costs* on the screen and open a new document on top of it.

Click the New button.

Notice the new workbook. As stated, Excel numbers new workbooks, *Book1*, *Book2*, *Book3*, etc. until you save the workbook and give it a permanent name.

2. **Type the following worksheet. The text *Jan*, *Feb*, and *Mar* is right-aligned. The other text is left-aligned, so you do not have to use an *Alignment* button.**

	A	B	C	D
1		Jan	Feb	Mar
2				
3	Wages	2000	3000	4000
4	Taxes	450	550	650
5	Insurance	25	50	75
6	Other	20	30	40
7				
8	Net			

3. **In B8, type the formula $=B3-B4-B5-B6$ to subtract the taxes, insurance, and other expenses from the wages. Do not forget to begin with an equal sign (=) or Excel will think that it is text.**
4. **Enter a similar formula into C8 and D8. When finished, row 8 should have these values:**

8	Net	1505	2370	3235
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5. **Change some of the original numbers and watch the results of the formulas change.**
6. You are going to save the workbook.

This time, use the keyboard command CTRL/S (Hold down the CTRL key and type S).

The Save As dialog box appears.

7. **Verify that *FLS Excel2003 Student Files* appears in the *Save in* box.**
8. **Change the contents of the *File name* text box to: Take Home Pay**
9. **Click *Save*.**

Using Multiplication

You are going to create a worksheet that uses multiplication.

1. **Click the *New* button.**
2. **Type the following worksheet. The text on top is right-aligned. The text on the left is left-aligned.**

	A	B	C	D
1		Smith	Jones	Roberts
2				
3	Pay/Hour	9	10	15
4	Hours	40	35	8
5				
6	Earnings			
7				

3. This time, you are not going to wait until you finish the workbook to save it. You are going to save it now and name it *Payroll*.

Use CTRL/S.

The Save As dialog box appears.

4. **Verify that *FLS Excel2003 Student Files* appears in the *Save in* box.**
5. **Change the contents of the *File name* box to: Payroll**
6. **Click *Save*.**

Notice *Payroll* on the Title bar. The workbook has been saved.

7. **In B6, type the formula $=B3*B4$ to multiply the hourly rate by the number of hours worked.**
8. **Write a similar formula for C6 and D6. When finished, row 6 should have these values:**

6	Earnings	360	350	120
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9. **Change some numbers and watch the results of the formulas change.**

10. **Use CTRL/S to save the changes.**

Your changes are saved. The Save As dialog box did not appear, because you already named the workbook.

Using Division

You are going to create a worksheet that uses division.

1. **Click the New button.**

2. **Type the following worksheet. Both the text at the top and on the left are left-aligned.**

	A	B	C	D
1		Tue	Wed	Thu
2				
3	Cookies	18	20	35
4	Children	6	5	8
5				
6	Each			
7				

3. You are going to save the workbook before continuing. You will name it *Party*.

Use CTRL/S.

4. **Verify that the file will be saved in the student folder.**

5. **In the *File name* text box, type: Party**

6. **Click Save.**

Notice *Party* on the Title bar. The workbook has been saved.

7. **In B6, type the following formula to divide the number of cookies by the number of children:
=B3/B4**

8. **Type a similar formula for C6 and D6. When finished, row 6 should have these values:**

6	Each	3	4	4.375
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9. **Change some numbers and watch the results of the formulas change.**

10. Use CTRL/S to save the changes.

Your changes are saved. The Save As dialog box did not appear, because you already named the workbook.

File Menu Practice

For practice, you are going to close the four documents you saved during this lesson. You will then open them, make changes, switch between them, and close them again.

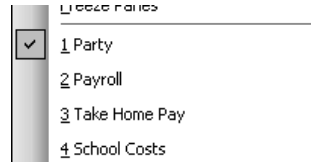
Viewing a List of Open Workbooks

You are going to view a list of all open workbooks. Notice the open windows on the Taskbar. All four workbooks are listed, either in four separate icons as below or as a single icon with the number 4.



1. Click the Window menu.

Notice the same open workbooks. There may be more than the four that you saved. The active workbook, the one on top of the other workbooks on the screen, has a check mark next to it.



2. Click anywhere in an open area of the screen to close the menu.

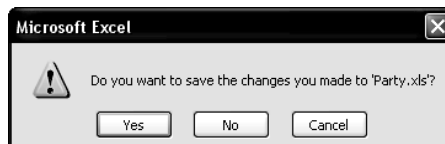
Closing Workbooks

You are going to close all the workbooks.

1. **Click the Close button. Be sure you click the document close button, not the application close button.**



If there are changes to be saved, the following alert box will appear asking if you want to save them.



Click Yes. If all changes have been saved, this alert box will not appear.

2. **Do this for all open workbooks.**
3. **If there are still workbooks on your screen, close them. There is no need to save the changes, so when asked, you can click the No button.**

When all documents are closed, only the application window remains open.

Opening Workbooks

You are going to open the same workbooks.

1. **Click the File menu and choose *Open*.**
2. **Verify that *FLS Excel2003 Student Files* is displayed in the *Look in* box.**
3. **Find *School Costs* on the list and click on it to highlight it.**
4. **With *School Costs* highlighted, click the Open button.**

School Costs has been opened. It is in two places — in memory (the version on the screen) and on disk.

5. **Change one of the values so there will be a change to save later on.**
6. **Click the File menu and choose *Open*.**
7. **Find *Take Home Pay* and click it to highlight it.**
8. **With *Take Home Pay* highlighted, click the Open button.**

Take Home Pay is open.

9. **Change a value so there will be something to save later on.**
10. **Click the File menu and choose *Payroll*.**
11. **Click the Open button.**

Payroll is open.

12. **Change a value.**
13. **Click the File menu and choose *Party*.**
14. **Click the Open button.**

Party is open.

15. **Change a value.**

Switching Between Workbooks

Notice once again that all four workbooks are listed on the Taskbar.

1. **Click a workbook button on the Taskbar and notice that the workbook of the button you clicked became the active workbook.**
2. **Click the Window menu and notice the open workbooks. The active workbook has a check mark next to it.**
3. **On the Window menu, click another workbook name and notice that it becomes the active workbook.**
4. **Change a value in the active workbook.**
5. **Close all the workbooks. For the workbooks that have unsaved changes, an alert box will appear. Click Yes to save the changes.**

This is the end of Lesson 3. Feel free to work on any of the workbooks you used for this lesson. Remember that throughout this course, files are never used in subsequent lessons, so do not hesitate to alter them.

End of Lesson 3