Lesson | 3

Spreadsheets

Activity 1: Caffeine
- Select Cells
- Change Font Formatting

Activity 2: Water Usage

Activity 3: Energy Efficiency
- Enter a Formula
- Copy a Formula
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- Insert a Chart

Activity 4: Blood Circulation
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Activity 5: Disease Statistics
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Activity 6: Force and Motion
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- Copy a Formula

Activity 7: Determining Fossil Age
- Sort Data
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Activity 8: Properties of Elements
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Activity 9: Climate Zones
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Activity 10: Electromagnetic Waves
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Activity 11: The Cell Cycle
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Activity 13: Photosynthesis

Activity 14: Force and Acceleration

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- Download Files
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Activity 16: Colors of Light

Activity | 1

Caffeine

Practice Activity

Technology Overview Spreadsheets can be used to record data in a table format in order to compare the data. In this activity, you will use a spreadsheet program to enter data in a table format.

Content Overview Have you ever made chocolate milk by mixing chocolate syrup with milk? If so, then you have demonstrated a basic principle of physical science by creating a solution. A solution is two or more substances combined to form a new substance. Coffee is another example of a solution. Coffee is a combination of coffee beans, water, and a naturally occurring substance known as caffeine. Caffeine is a substance that can temporarily increase physical activity. In this activity, you will learn about the amount of caffeine found in regular coffee and in decaffeinated coffee.

TERMS

Cell The intersection of a spreadsheet row and column, which holds an entry.

Column A vertical line of cells in a spreadsheet, identified by letter.

Font A complete set of characters in a specific face, style, and size.

Font size The height of an uppercase letter in a font set.

Font style The slant and weight of characters in a font set.

Row A horizontal line of cells in a spreadsheet, identified by number.

KEY CONCEPTS

Select Cells

- Actions and commands affect the active, or selected, **cell(s)**.
- The active cell has a bold black border around it.
- You can also select a range of cells.
- When a range is selected, the border surrounds all selected cells. The active cell has a white fill, while other cells in the range are shaded.

Change Font Formatting

- The default Excel 2003 **font** is Arial.
- The default Excel 2007 font is Calibri.
- **Font size** is measured in points. There are 72 points in an inch.
- The default Excel 2003 font size is 10 points.
- The default Excel 2007 font size is 11 points.
- When you change the font size, Excel automatically adjusts the row height but does not adjust the column width.
- The most common **font styles** are **bold** and *italic*.
- When no style is applied to a font, it is called regular.
- Font styles can be combined for different effects, such as bold italic.

PROCEDURES

Select Cells

A single cell:

- Click cell to select.

  OR

- Press arrow key ..... ↓/↑/←/→

An adjacent range of cells:

1. Drag to select adjacent cells.

   OR

   Click first cell in range ..... ↓/↑/←/→
2. Press and hold **Shift** ..... Shift
3. Click last cell in range ..... ↓/↑/←/→

A nonadjacent range:

1. Click first cell in range ..... ↓/↑/←/→
2. Press and hold **Ctrl** ..... Ctrl
3. Click next cell.
4. Repeat step 3 to select additional cells.

All cells in a worksheet:

- Click **Select All** button in upper left corner of worksheet ..... Ctrl+A

  ✓ *The Select All button is a gray block in the worksheet frame, above the row headings and to the left of the column headings.*

A row:

- Click the row heading.

A column:

- Click the column heading.

Apply Bold, Italics, or Underline

Excel 2007:

1. Select cell(s) to format.
2. Click **Home** tab ..... Alt+H

   Font Group

3. Click font style button:
   - **Bold** B 1
   - **Italic** I 2
   - **Underline** U 3

Excel 2003:

1. Select cell(s) to format.
2. Click font style button on Formatting toolbar:
   - **Bold** B ..... Ctrl+B
   - **Italic** I ..... Ctrl+I
   - **Underline** U ..... Ctrl+U

   ✓ *To remove font styles repeat steps 1 and 2.*

3. Position insertion point to left of first character you want to replace.
4. Type new text.

ACTIVITY DIRECTIONS

1. Start Excel.
2. Save the new blank workbook file that appears as **01CAFFEINE_*xx***.

   ✓ *If necessary, ask your instructor where to save this file.*

3. In cell A1, enter **Item**.
4. In cell B1, enter **Serving (oz)**.
5. In cell C1, enter **Caffeine (mgs)**.
6. In cell A2, enter **Regular Coffee**.
7. In cell A3, enter **Decaf Coffee**.
8. In cell B2, enter **8**.
9. In cell B3, enter **8**.
10. In cell C2, enter **135**.
11. In cell C3, enter **5**.
12. Select all the cells and format them in 12-point Arial.
13. Apply bold to the labels in row 1.
14. Adjust the width of columns A through C to fit the entries you made.
15. Check the spelling in the worksheet, and correct any errors. The finished worksheet should look similar to Illustration A.
16. Preview the worksheet and then print it.
17. Close the workbook, saving all changes.
18. Exit Excel.

Illustration A

F14 fx

	A	B	C	D	E
1	**Item**	**Serving (oz)**	**Caffeine (mgs)**		
2	Regular Coffee	8	135		
3	Decaf Coffee	8	5		
4					
5					
6					

Activity | 2

Water Usage

Practice Activity

Technology Overview You've probably seen data put in tables. Tables help you understand data by putting it in a visual format. Using a spreadsheet program, you can collect and organize data. In this activity, you will also use a spreadsheet program to compare data.

Content Overview How many times a day do you turn on a faucet to wash your hands, get a drink of water, or take a shower or bath? We all do this often, yet we probably don't think about where the water we're using is coming from. The water in your home may come from either groundwater or surface water. If you have a private well, you use groundwater. If you are connected to your city's or town's water lines, you may have either surface water from a reservoir or groundwater from a series of public wells. In this activity, you'll learn more about how much water you use in your home each day.

ACTIVITY DIRECTIONS

1. Start Excel.
2. Save the new blank workbook file that appears as **02WATER_*xx***.

   ✓ *If necessary, ask your instructor where to save this file.*
3. In cell A1, enter **Task**.
4. In cell B1, enter **Water Used (liters)**.
5. In cell A2, enter **Showering for 5 minutes**.
6. In cell A3, enter **Brushing teeth**.
7. In cell A4, enter **Washing hands**.
8. In cell A5, enter **Flushing standard toilet**.
9. In cell A6, enter **Flushing "low flow" toilet**.
10. In cell B2, enter **95**.
11. In cell B3, enter **10**.
12. In cell B4, enter **7.5**.
13. In cell B5, enter **23**.
14. In cell B5, enter **6**.
15. Select all the cells and format them in 12-point Arial.
16. Apply bold to the labels in row 1, and increase its font size to 14 points.
17. Adjust the width of columns A and B to fit the entries you made.
18. Check the spelling in the worksheet, and correct any errors. The finished worksheet should look similar to Illustration A.
19. Preview the worksheet and then print it.
20. Close the workbook, saving all changes.
21. Exit Excel.

Illustration A

F15 f_x

	A	B	C	D
1	**Task**	**Water Used (liters)**		
2	Showering for 5 minutes	95		
3	Brushing teeth	10		
4	Washing hands	7.5		
5	Flushing standard toilet	23		
6	Flushing "low flow" toilet	6		
7				
8				
9				