Name_____ Period _____ Date _____

Data Analysis

STEM Sims

Lesson 2: Is There A Difference?

Many times students conduct experiments and collect data. Some students go an additional step and find averages to determine whether an experimental effect exists. Can you go one step further and find out if the experimental effect was scientifically significant?

Doing the Science

1. Start the Data Analysis Simulation by clicking on the "Sim" tab.
2. Click on the "Counting" button.
3. Choose one of the factors (Fertilizer, Pesticide, Acid Rain, or Music) to study in this experiment by clicking on that particular button. Record this factor in Table 1.
4. Click the "Apply Treatment" button (you'll do this three times overall).
5. Click the "Results" button. Then click on one of the Flats, A, B, C, or D.
6. Click on one of the plants in the flat you selected. Note and record in Table 1 what factor you are counting on the plant. Count the number of "objects" (fruit, flowers, or roots) on the plant and enter that value into the data entry section on the right side of the screen. Click Enter, then select the next plant and repeat the counting and entering process.
7. When all of the plants in one flat have been observed, click on the next flat and repeat the process.
8. When all flats have been counted, click the "Data Analysis" button to continue.
9. Note and record in Table 2 the % Treatment and the Average value for each flat.

Table 1. Study Variables

What factor you tested:	
What factor you counted:	

Table 2. Experimental Data

	Flat A	**Flat B**	**Flat C**	**Flat D**
% Treatment				
Treatment or Control?				
Average Count				
Different from Control?				

Do You Understand?

1. Discuss the results of your experiment.

2. Write a conclusion for your study.