Exponential Growth

Student Worksheet

Directions

You will first experiment with materials that will model exponential growth. Then you will use the TI NSpire to find the exponential growth regression function for a sample of 7 M&M's. This function will be compared to a larger sample.

Part 1: Experiment with M&M's

1. Do not eat the manipulatives!
2. Start with a cup of 4 M&M's
3. Shake the cup and pour the M&Ms out on the paper towel. Count the number of M&Ms that have the M showing. Add an M&M for each one with an M showing. Record the total number of M&Ms enter t=1.
4. Repeat for 6 trials
5. Graph trials onto a scatter plot with trials on the x axis and the number of M&M's on the y-axis and predict a 10^{th} trial.

What type of function is your scatter plot most alike? Linear? Quadratic? Power? Exponential?

What does the 10^{th} trial produce?

What is the y intercept and how does that relate to the M&Ms?

Part 2:

Open the file M&MExponentials.tns after you record your experimental data using the M&Ms.

Explain the meaning behind each of the cell formulas:

A2:_____

C1:_____

B2:_____

Part 3:

Record your regression equation:

Explain what each of the values mean?

Part 4:

How does the regression equation found from the 100 cases differ from that of the regression equation of only 7 cases?