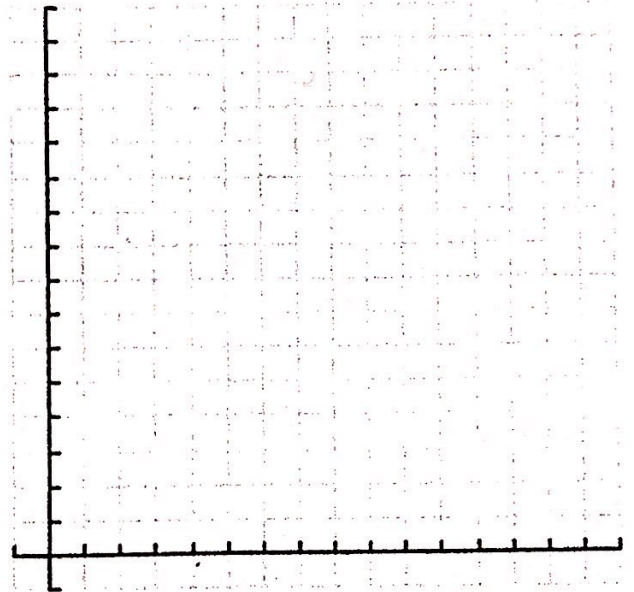


Lab Data & Analysis Sheet

Name: _____

Lab Title: Twizzler Lab

# of Bites	Length of Twizzler (cm)
0	20
1	18
2	16
3	13.5
4	12.5
5	9.5
6	7
7	5
8	2.5
9	0



Circle one for each:

Discrete or Continuous

Increasing or Decreasing

Linear or Exponential

Slope for line (with meaning) or Ratio for exponential curve

Starting Value _____

Explicit Equation _____

How well does equation fit your data?

Linear and Exponential Labs Directions

For each station, follow the directions provided to collect the data you need. After collecting ALL of the data, complete the lab write ups according to the following directions. You will need one sheet for EACH set of data.

1. Collect data according to directions. Record on data table. Label variables and be sure to include units.

Move to another station until you have collected all data. Then move on to step 2.

2. Graph the data. Be sure to include numeric and descriptive labels on graph.

3. Determine if the data should be discrete or continuous. If it is continuous, modify your graph!

4. Determine if the data shows an increasing or decreasing function.

4. Determine if the data shows a linear or exponential function.

5. Complete Part I or Part II depending on the type of function (linear or exponential).

Part I. If the relationship is linear, answer the following:

a. Draw a line that appears to fit the data well.

b. Select two points on your line (ideally, data points) and find the slope of the line. Explain the meaning of the slope in the context of the problem.

c. Identify the starting value for your problem.

d. Write the explicit equation for your problem.

e. How well do you think the equation fits the data? Could you use it to make accurate predictions?

OR Part II. If the relationship is exponential, answer the following:

a. Draw a curve that appears to fit the data well.

b. At what rate is the measured variable growing or decaying? It may help to think of the value in terms of a fraction or percent. How many ___ do you expect to keep or add each time? This is a theoretical value and may not match your data very closely.

d. Identify the starting value for your problem

e. Write the explicit equation for your problem

f. How well do you think the equation fits the data? Could you use it to make accurate predictions?

Station Directions

M&M Slinky

Have one group member hold the slinky with the empty cup attached. The slinky will need to stay in the same exact position for several minutes!!! Have another group member measure the distance from the bottom of the cup to the floor. Add several M&Ms at a time to the cup (count as you add!) then measure the distance again. Repeat at least 8 times.

Independent variable: number of M&Ms in the cup. Dependent variable: distance from the bottom of the cup to the floor.

M&M Roll

Start with 4 M&Ms in the cup. Roll the M&Ms onto the plate. For each M&M that lands with the M side facing up, add another M&M to the plate (keep count!). Record the total number of M&Ms on the plate, then return them all to the cup and roll again. Repeat until you don't have enough M&Ms to add to the plate.

Independent variable: number of rolls. Dependent variable: number of M&Ms on the plate.

Dice Roll

Count all of the dice in the tray & record this starting value. Roll the dice (or shake the tray to simulate a roll). Remove all dice that roll a 6 and recount the dice. Repeat until you run out of dice (or have at least 15 data points).

Independent variable: number of rolls. Dependent variable: number of dice in the tray.

Twizzler/Pretzel

Measure the length of the twizzler in centimeters. Take a small bite and measure the length again. Repeat until the twizzler is gone.

Independent variable: number of bites. Dependent variable: length of the twizzler.

Sand & Water

Measure the height of the water in centimeters. Add one scoop of sand to the floating cup and measure the height of the water again. Repeat until the sand is gone.

Independent variable: number of scoops of sand in the cup. Dependent variable: height of the water.

Temperature

Pay attention and record the temperatures of the water as they are called out by the teacher. For this lab, answer only questions 1-4, and 5a, c, and e. You may skip questions 5b and d.

Independent variable: time (in minutes). Dependent variable: temperature of the water.