

The M&M function
(Exponential Growth and Decay)

Members in your group (groups of two): _____

Items Needed: one 1.69 ounce package of M&Ms per student (about 55 M&Ms)
one 16-ounce plastic Dixie Cup for each group

STEP 1:

Open your package of M&Ms. Place two of them in the cup at trial "zero." Roll them on the desk. For each **M** that is displayed, add one M&M. Then record the total number in the table for trial "one." Repeat until you reach 10 trials or 60 M&Ms, whichever comes first.

Trial #	M&Ms
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

Do not eat the M&Ms .. we still need them!

STEP 2:

Now graph your results on the graph paper provided.

STEP 3:

Use your calculator to determine the exponential function which describes your data (see instructions below for using your calculator).

Write ***your*** exponential function here: _____

What is the ***theoretical*** exponential function for this experiment? _____

STEP 4:

Graph the points in your table on the calculator. Then graph your exponential function on the calculator. It should pass through most of the points that you plotted. Now graph the theoretical exponential function on your calculator. See instructions below for graphing.

STEP 5:

Start with the number of M&Ms in your Dixie cup that you finished with in STEP 1. Put this number in trial "zero." Now roll out the M&Ms on your desk. Any that show an **M** get removed (and eaten ☺). Count the remaining M&Ms and write this number in trial "one." Repeat for 10 trials or until all the M&Ms are gone.

Trial #	M&Ms
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

STEP 6:

Now graph your results on the graph paper provided.

STEP 7:

Use your calculator to determine the exponential function which describes your data (see instructions below for using your calculator).

Write **your** exponential function here: _____

What is the **theoretical** exponential function for this experiment? _____

STEP 8:

Graph the points in your table on the calculator. Then graph your exponential function on the calculator. It should pass through most of the points that you plotted. Now graph the theoretical exponential function on your calculator. See separate instructions for using a graphing calculator.