M & M's are for More than Just Eating.

Record the number of M & M's in your packet in the table below under toss number 0. Then drop (toss) all M & M's on the table making certain they do not spread out too far or interfere with other groups. Count the number of M's showing, record this number as toss #1, and remove ALL OTHERS (i.e. the candies with the blank side up) from the activity (eat, if hungry). Collect and then drop (toss) the remaining M & M's. Count and record the number of M's and remove the blank ones from the collection. Continue using this process until you have no M & M's left to toss. If you need more than eight tosses, add them at the end of the table.

Toss(t)	0	1	2	3	4	5	6	7	8
# of M & M's (m)									

When all groups have finished, we'll total the numbers m from all groups for each toss t. This is the data we will use for the rest of the activity. You may enter the data in L_1 (t) and L_2 (m), or perhaps one of you will enter the total data and then LINK to everyone else.

1. After studying the data set, do you recognize any **numerical** pattern? If yes, describe the pattern in words. If no, explain what you were looking for that didn't materialize. _____

_____

2. The parameter ½ is important in this activity. Why? _____

_____

3. Is the initial condition parameter (the number of M & Ms the total group started with) important? How?

_____

_____

4. **IF** you were to graph the data, do you think it will be linear, quadratic, neither? Explain.

_____

5. **NOW**, graph the data. What name might you give its shape? What do mathematicians call it?

_____

6. Using what you know from the above answers, find a model for the data. You may also want to try mathematical reasoning and common sense, but your pattern recognition abilities should suffice. This may take a few educated guesses with refinements as you proceed to a final model. After making an attempt at a model, graph it and the data. This should help you make a decision on how to improve the model. Hint: Use the standard form of a model.

1st Attempt _____Improvement to be made _____

2nd Attempt _____Improvement to be made _____

3rd Attempt _____Improvement to be made _____

NEED MORE? (use blank sheet of paper) _____

Final $M \& M$ model _____