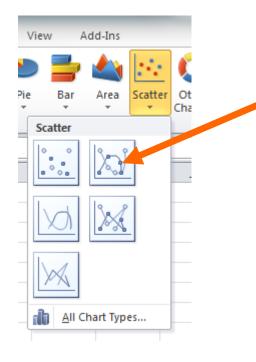
**Click Scatterplot** 



Choose 2nd image



# Modeling Exponential Growth and Decay Using M&M's

 $y = a(b)^{x}$ 

Graph on Separate Graphing paper

## The Exponential Growth of M&M's

Start with one M&M. Place it in a cup, shake it, and then empty it on the desk. If the letter M is showing, place it back in the cup. If there is no M add another candy and place both in the cup. Empty the cup again. For every candy not displaying a M, add another one and place it in the cup. Repeat for up to 20 trials or until you run out of candy. Record the data in the table below.

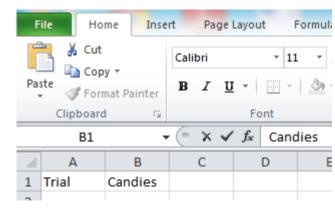
| Trial   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------|---|---|---|---|---|---|---|---|---|---|----|
| Candies | 1 |   |   |   |   |   |   |   |   |   |    |

| Trial   | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---------|----|----|----|----|----|----|----|----|----|----|
| Candies |    |    |    |    |    |    |    |    |    |    |

## **Graphing Exponential Growth**

#### Open EXCEL Spreadsheet

Type in Trial and Candies in Cell A & B and Enter data from table



| Trial |   | Candies |
|-------|---|---------|
|       | 0 | 1       |
|       | 1 | 4       |
|       | 2 | 9       |
|       | 3 | 16      |
|       | 4 | 24      |
|       | 5 | 32      |
|       | 6 | 44      |
|       | 7 | 46      |
|       | 8 | 59      |
|       | 9 | 62      |

#### Highlight Graph and Click INSERT tab

| F    | ile Ho      | me Inse   | rt Page           |  |  |  |  |
|------|-------------|-----------|-------------------|--|--|--|--|
|      | \$          |           |                   |  |  |  |  |
| Pivo | tTable Tabl | e Picture | Clip Sha<br>Art · |  |  |  |  |
|      | Tables      |           | Illu              |  |  |  |  |
|      | A1          | -         | <b>-</b> (9       |  |  |  |  |
|      | А           | В         | С                 |  |  |  |  |
| 1    | Trial       | Candies   |                   |  |  |  |  |
| 2    | 0           | 1         |                   |  |  |  |  |
| 3    | 1           | 4         |                   |  |  |  |  |
| 4    | 2           | 9         |                   |  |  |  |  |
| 5    | 3           | 16        |                   |  |  |  |  |
| 6    | 4           | 24        |                   |  |  |  |  |
| 7    | 5           | 32        |                   |  |  |  |  |
| 8    | 6           | 44        |                   |  |  |  |  |
| 9    | 7           | 46        |                   |  |  |  |  |
| 10   | 8           | 59        |                   |  |  |  |  |
| 11   | 9           | 62        |                   |  |  |  |  |
|      |             |           |                   |  |  |  |  |