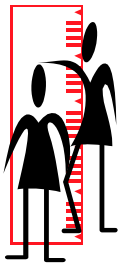
Summer Assignment for Junior Math

This project is counted as a test in Algebra II and Precalculus. The project will be turned in to your math teacher by first class day of school. ** Line of Best Fit is described below.

Experiments:



I) Height versus Arm Span

T-Chart	8 points
Graph Data Points	8 points
Line of Best Fit	8 points
Questions (4) (3 points each)	12 points

IV) Height of a Candle versus Time of Burn

T-Chart	8 points
Graph Data Points	8 points
Line of Best Fit	8 points
Questions (4) (3 points each)	12 points

VI) M&M's Remaining versus Number of Trials

T-Chart	10 points
Graph Data Points	10 points
Questions (2) (4 points each)	8 points

****After plotting all your data points use a straight edge to create a line that lays half way between your data. That means there are as many points below the line as above the line. Write an equation for that line using y = mx + b. This is known as the Line of Best Fit. It is important to decide if the slope of the line is positive or negative in order to know the direction of your line.**

Title: **Height versus Arm Span**

Objective: To determine the relationship between persons height and arm span

Materials: Seven different people
Metric Measuring Tape

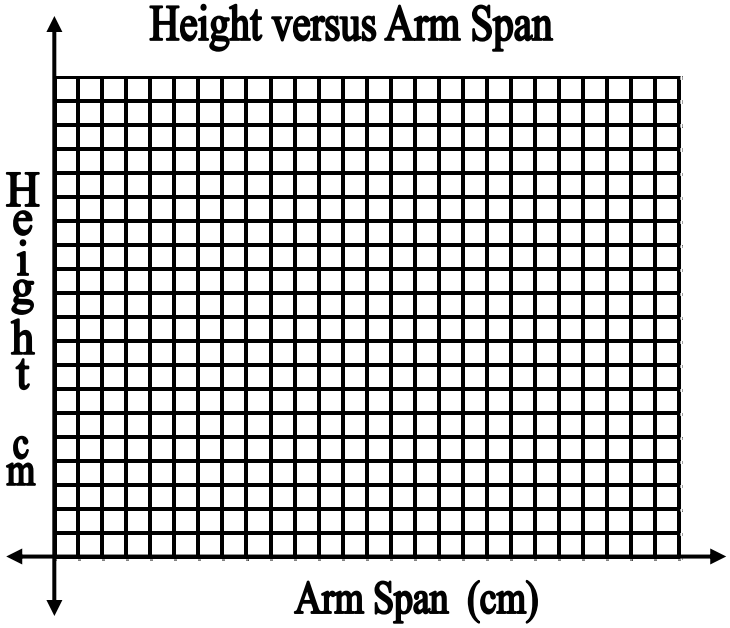
Procedure: 1. Use a metric measuring tape to measure the height and arm span for seven people, round each measurement to the nearest centimeter.

2. Compete the table below and graph the ordered pairs on the grid provided.

3. Draw the line of best fit for the ordered pairs on your graph

Results:

Arm Span (cm)	Height (cm)



Conclusion: 1. Write the equation for the line of best fit in the form y = mx + b.

2. Where does your line cross the y-axis?

3. What is the slope of your line? (Make sure you included the units!)

4. What does this slope tell you about the experiment you have just performed?

Title: **Height of a Candle versus Time of Burn.**

Objective: To determine the relationship between the height of a candle and the time of burn

Materials:

Foil	Candle
Matches	Metric Ruler
Stop Watch	

Procedure:

1. Stand a small birthday candle on a heat-resistant tile or plate (foil works well) Stand the candle up by dripping some melted wax from another candle onto the plate and then setting the unlit candle in the wax.

2. Light the candle and measure its height in centimeters every 20 seconds. Extinguish the candle before it burns all the way down.

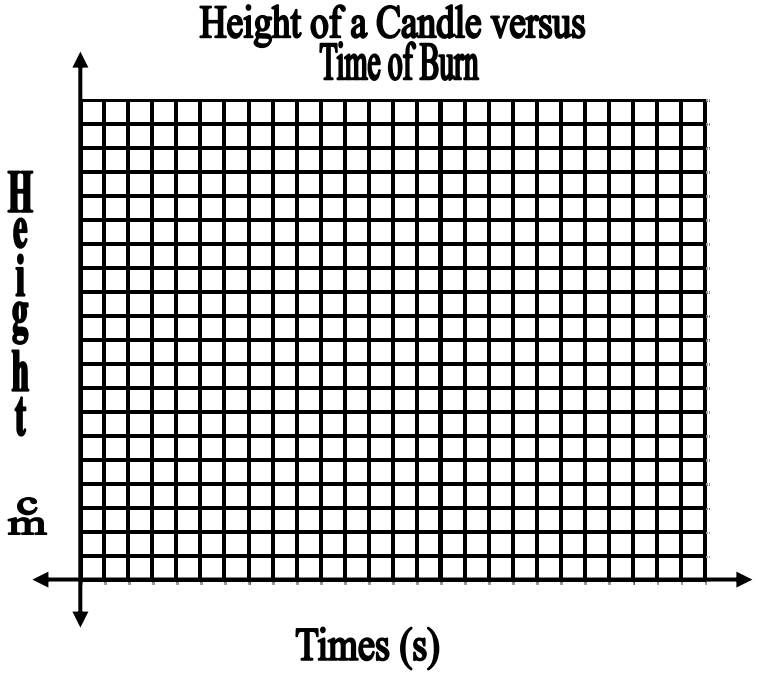
3. Record your results in the table below

4. Graph the data on the grid provided

5. Draw the line of best fit for your data

Results:

Time (s)	Height (cm)
20	
40	
60	
80	
100	
120	
140	
160	
180	
200	
220	
240	
260	



Conclusion:

1. Write the equation for the line of best fit in the form y = mx + b.

2. Where does your line cross the y-axis?

3. What is the slope of your line? (Make sure you included the units)

4. What does this slope tell you about the experiment you have just performed?

Title: **M&M's Remaining versus Number of Trials**

Objective: To determine the relationship between the number of remaining M&M's and the number of trials

Materials: M&M's

Procedure: 1. Pour out an 8 oz. bag of regular M&M's onto a plate or tray so that the candies are one layer thick. Remove all the M&M's with the m showing.

2. Count and record the number of M&M's remaining.

3. Place the M&M's removed aside and pour the remaining ones into a container. Shake the container and pour these M&M's out onto the plate or tray. Again, remove all the M&M's with the m showing.

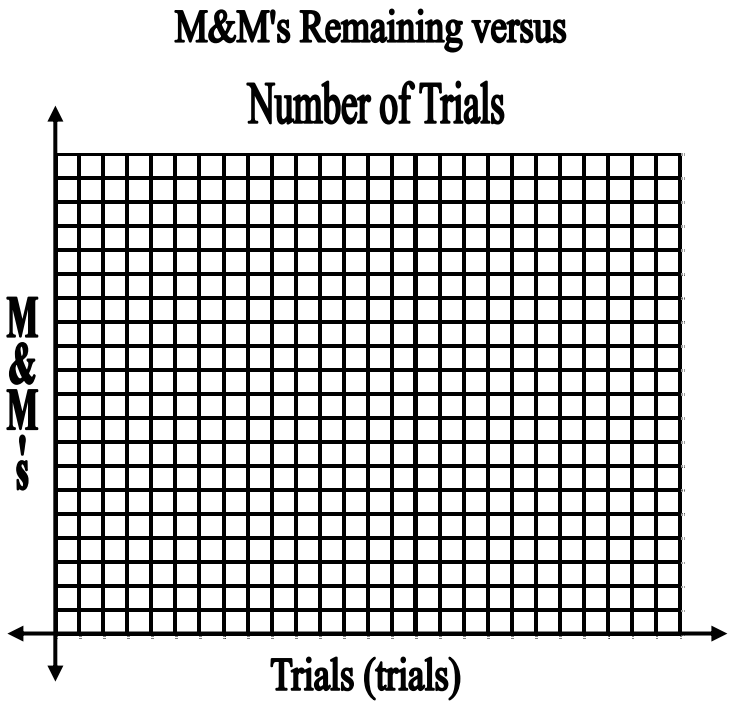
4. Record the number remaining. Repeat this process until all the M&M's are removed.

5. Record your results in the table below.

6. Graph the data on the grid provided

Results:

Trials (trials)	M&M's remaining
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	



Conclusion: 1. How does the number of remaining M&M's change with the number of trials?

2. Do you think the points on the graph will lie on a straight line, on a smooth curve, or scattered at random?