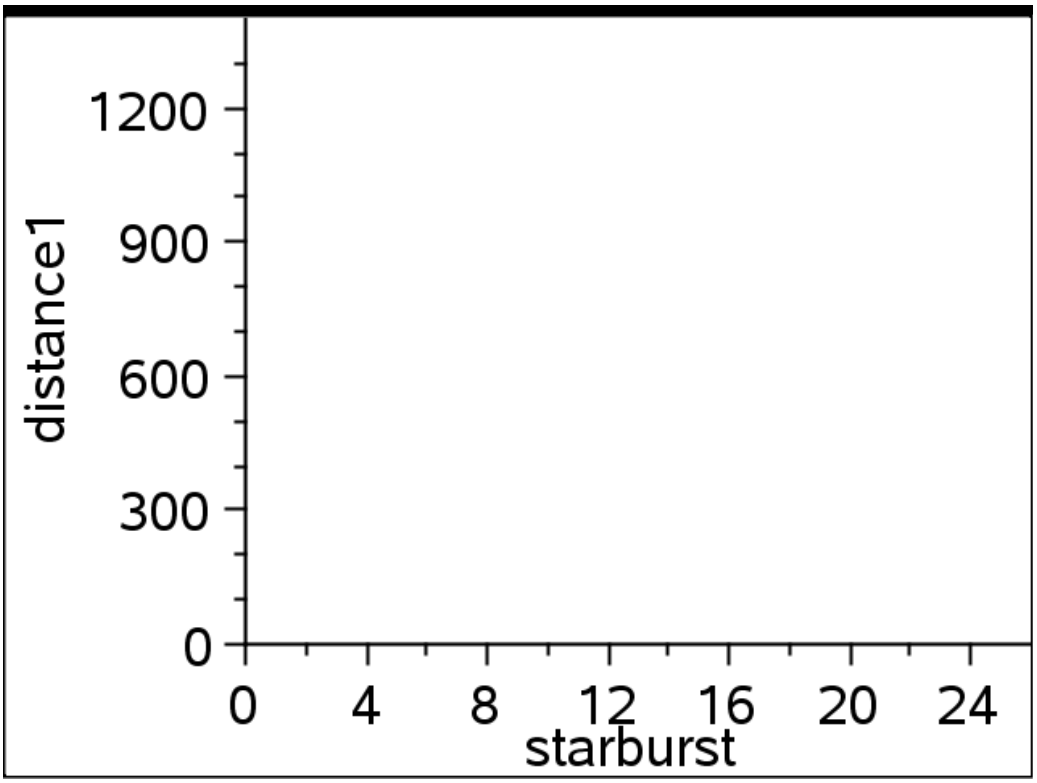
Investigating Slopes/Motion **Name: _____**

Problem 1: Starburst Experiment & Data Collection

1.5 Make a quick sketch of your graph from Page 1.4.



Page 1.6 Record and discuss with your table partner:

1. What do you notice about the plot?

2. What is the slope of the line?

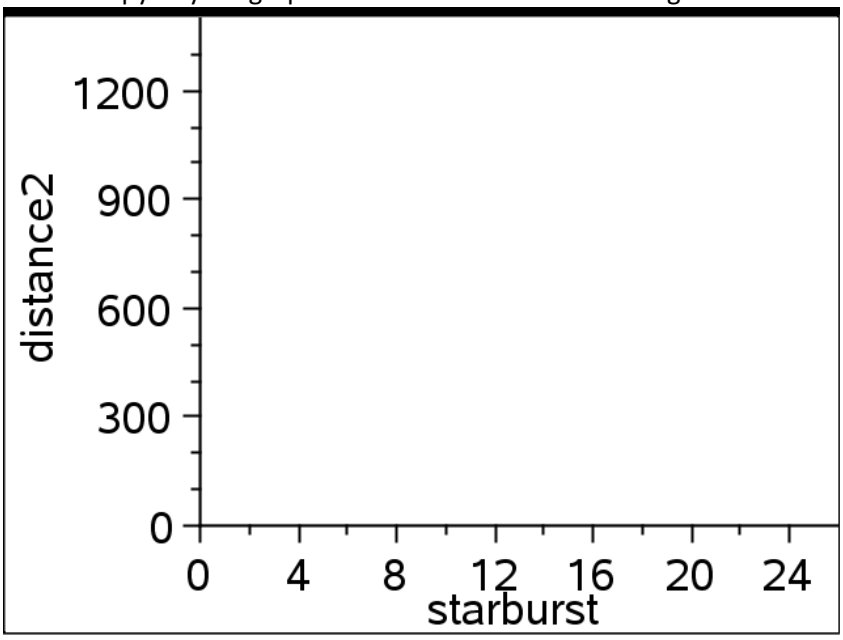
3. What is the x-intercept?

4. Write the function for this data.

5. What does the function tell you about the speed of the "dropper"?

Pages 1.7-1.9 Directions & Questions:

Predict what the graph will look like when you move at a "fast" pace. Draw on the graph at top of 1st page.
Draw a copy of your graphs and moveable lines from Page 1.9. Use different colors for each.



d. Discuss with your partner the similarities and differences between each graph.

e. What do you notice about the steepness of each line? What does this say about the "droppings" of the Starburst?

f. With using your handheld, find and defend the function for each trial. Think about the slope and y-intercept and what each means.

Trial 1: y= _____
WHY?

Trial 2: y=_____
WHY?

Problem 2: Graphs and Motion (answer for each graph)

1. What can you say about each car's speed by looking at the slope of each line?

2. What does a flat line represent? The intercepts?

3. Where is each car at 3 seconds? 8 seconds?

4. How many changes in velocity does each graph have? How can you identify these points from the graph?

5. Pick one graph and calculate the average speed over the ten second experiment.

Problem 3: Fast Finishers

Pages 3.1 & 3.2

1. Discuss, model and/or graph what would happen if the rate was slow and then changed to faster. What happens to the slope? To the graph?
2. Design your own experiment to demonstrate your own understanding of slope and graphing.
3. Create 3-4 graphs. Write a short scenario for what each graph might represent in the real world. Be sure to use different variables for each scenario.
4. Graph and discuss the data in terms of distance between each Starburst (versus distance from start as in this activity).