Egg Launch Contest (Part 1)

Vista View students are holding an egg launching contest on the field. Teams of students have built catapults that will hurl an egg down the field.

Team A: Mrs. Hoang's math students used their catapult and hurled an egg down the football field. They used a motion detector to collect data while the egg was in the air. They came up with the table of data below.

Distance (x) of egg from starting point (in feet)	0	1	2	3	4	5	6	7	8
Height (y) of egg from the ground (in feet)	0	7	12	15	16	15	12	7	0

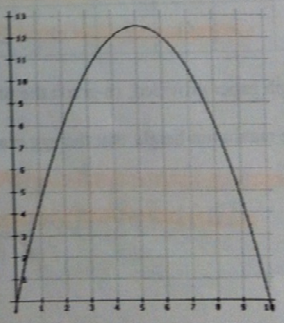
Team B: Mrs. Preciado's math students' egg flew through the air and landed down the field. The students tracking the path of the egg determined that the equation

$$y = -2.0x^2 + 12x + 0$$

represents the path the egg took through the air, where x is the distance from the starting point and y is the height of the egg from the ground. (Both measurements are in feet.)

Team C: Mrs. Photoglou's math students launched an egg with their catapult. His students created a video of the trajectory of the egg and found that the graph to the right shows the path of the egg.

The x-axis represents the distance (in feet) of the egg from the starting point. The y-axis represents the height (in feet) of the egg from the ground.



Adapted from http://illuminations.nctm.org

Egg Launch Contest (Part 1)

Team A

1. On the graph paper provided, graph the path of Team A's egg.

2. What is the maximum height that the egg reached? How far was the egg hurled?

The maximum height that the egg reached was 16 feet and the egg went 8 feet.

Team B

3. Using the equation from Team B, generate a table of values that shows different locations of the egg as it flew through the air.

Distance (x)	0	1	2	3	4	5	6	7				
Height (y)	0	10	16	18	16	10	0	-9				

4. On the graph paper provided, graph the path of Team B's egg.

5. What is the maximum height that the egg reached? How far was the egg hurled?

The maximum height the egg went is 18ft and it hurled 6 feet.

Team C

6. Using the data from Team C, generate a table of values that shows different locations of the egg as it flew through the air.

Distance (x)	0	1	2	3	4	5	6	7	8	9	10	
Height (y)	0	4	8	10	12	12.9	12	10.9	8	4	0	

8. On the graph paper provided, re-graph the path of Team C's egg.

9. What is the maximum height that the egg reached? How far was the egg hurled?

The maximum height the egg reached is 12.9 feet and the egg went 10 feet.

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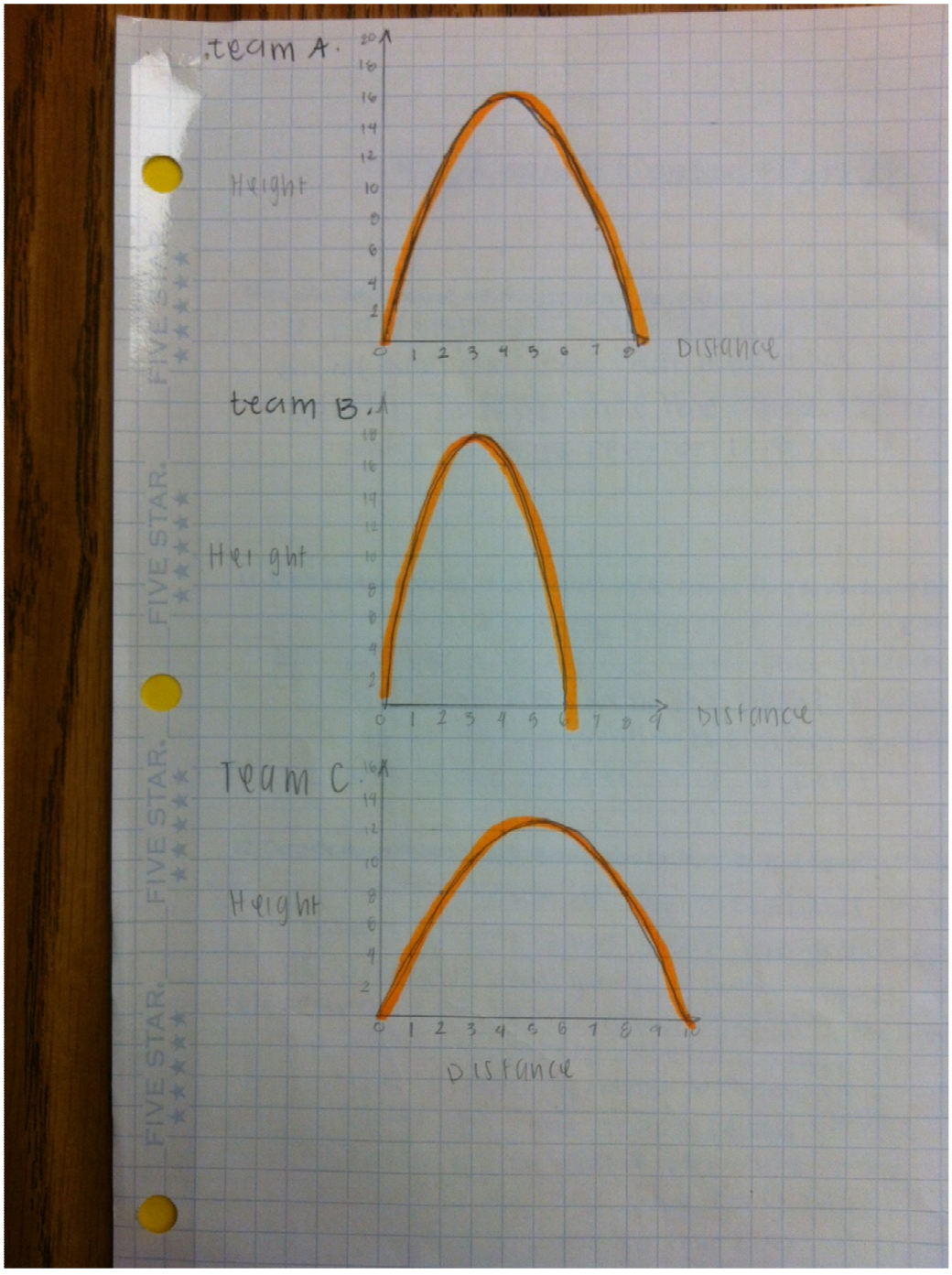

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Egg Launch Contest (Part 2)

10. If it is a height contest, which team will win the contest? How do you know? Explain.

If it is a height contest, Then team B will win because on the graph and on the chart it went the highest which is 18 feet, while the other teams only went 16 feet or 12.5 feet.

11. If it is a distance contest, which team will win the contest? How do you know? Explain.

If it is a distance contest, then team C will win because on the chart and graph, their egg launcher went the furthest with is 10 feet, while the other teams only went 6 feet and 6 feet.

12. Describe the usefulness of each representation (table, equation, and graph) of the data.

I think each of the methods is all useful in it's own way. The graph gives us a visual image but sometimes you can't see the numbers and it's not accurate. The chart is pretty useful, when you use x and y, and because of the chart you can graph really easily. The equation is useful because you can sub in x-values and solve for y which is the one you want to find out, but if the equation is long and hard it's very time consuming.