**Water Balloon Launch Activity**

*In this activity you will take the previously constructed water balloon launcher and explore how launch angles relate to distance.*

**Tools Needed:** Tape measures, water balloon launcher, TI calculator

1) Using the given length of the launcher and by measuring the heights of launching determine the angle that you are launching at.

2) Launch the water balloon and measure the distance it has traveled

3) Repeat steps 1 & 2 and complete the table

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| --- | --- | --- |
| **Height of Launch** | **Angle of Launch** | **Distance Traveled** |
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4) Enter the data for the “Angle of Launch” and “Distance Traveled” into your TI calculator and create a scatterplot

5) What do you notice about the relationship between the “Angle of Launch” and the “Distance Traveled” ?

6) What type of function could you use to model this data?

7) Run a regression to get this function; use it for question 9

8) Use the given Angle of Launch & Trigonometry to determine the “Height of Launch” in the table below

9) Use your function to determine the distance the balloon will travel, put into your table

10) Launch the water balloon and compare it to your prediction.

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| --- | --- | --- | --- | --- |
| **Angle of Launch** | **Height of Launch** | **Predicted Distance** | **Actual Distance** | **Difference** |
| **25** |  |  |  |  |
| **35** |  |  |  |  |
| **45** |  |  |  |  |
| **55** |  |  |  |  |
| **65** |  |  |  |  |