Name_____ Date _____

Water Rockets

STEM Sims

Lesson 1: How Does the Launch Angle Affect Rocket Flight?

The angle at which you launch a rocket plays a role in determining how far the rocket will go. In this study you will find out whether it is better to launch a rocket parallel to the ground (0 degrees), perpendicular to the ground (90 degrees), or somewhere in between. Blast off into this investigation!

Doing the Science

1. Start the Water Rockets Simulation by clicking on the "Sim" tab.
2. Make the following selections:

   Angle: 0° Fluid Volume: 200 mL
   Pumps: 4 Fluid Type: Glycerin
   Air: Off Wind: Off
3. Click on the "Launch" button.
4. Record the flight distance in meters in Table 1.
5. Click on the "RESET" button.
6. Repeat steps 2-5 increasing *only the angle* by 10° until you have completely filled out Table 1.

Table 1.

Launch Angle	Flight Distance (m)
0°	
10°	
20°	
30°	
40°	
50°	
60°	
70°	
80°	
90°	

Do You Understand?

1. What launch angle resulted in the longest distance traveled for the rocket?

2. Look at the two angles in your table that resulted in the longest flights and test the 5° angle in between the two. What distance does that angle produce? Does your answer to #1 change?