



Water Rockets

STEM Sims

Lesson 2: How Does the Number of Pumps Affect Rocket Flight?

Pumps are the mechanism by which a water rocket is propelled forward. You will complete your investigation to find out if more pumps equals more distance flown by the water rocket? It's time to get pumped up and start your flights.

Doing the Science

1. Start the Water Rockets Simulation by clicking on the "Sim" tab.
2. Make the following selections:
 - Angle: 30° Fluid Volume: 200 mL
 - Pumps: 2 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 number of pumps* by 2 until you have completely filled out Table 1.

Table 1.

Number of Pumps	Flight Distance (m)
2	
4	
6	
8	
10	

Do You Understand?

1. What number of pumps produced the longest flight distance for the rocket?

2. Make a prediction for the distance flown by the rocket if you would have applied 12 pumps.

Your predicted distance traveled by the rocket = _____ m