Name_____ Period _____ Date _____

Water Rockets

STEM Sims

Lesson 4: How Does the Type of Liquid Affect Rocket Flight?

The type of liquid used can make a big difference in the physics of a rocket launch. Liquids have many different properties, some that can affect how a rocket performs. Fill up your tank and start this investigation of liquids and rockets.

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: 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 changing *only* the Fluid Type to Water, and then Methanol so that you have completely filled out Table 1.

Table 1.

Fluid Type	Flight Distance (m)
Glycerin	
Water	
Methanol	

Do You Understand?

1. What liquid type produced the longest horizontal distance traveled by the rocket?

2. What is the relationship between viscosity and flight distance?

3. What is the relationship between a liquid's density and flight distance?