Lab 1.6 Fluid Dynamics

Task 1 – Who Will Win?

If two soda bottles are filled with two fluids (water and vegetable oil) to Mark 1, which soda bottle will drain to Mark 2 more quickly?

How did you make your decision?

Let’s test and see!

Who won?

Task 2 – Fluid Draining from a Bottle

A soda bottle is filled to Mark 1 with water. A hole is cut in the bottom of the bottle and a straw is attached. How long does it take for the water level to reach Mark 2?

- What strategy can we take to solve this problem? Write the equation(s) and concept names below.

- What information do we need to know in order to solve the problem? For the identified information, record the measurements your class takes.
• Using equations from class, calculate the time it should take for water to drain from Mark 1 to Mark 2.

• How close were your calculations and measurements? To what can you attribute the differences between your calculations and measurements?
Task 2 – Different Fluid Draining from a Bottle

A soda bottle is now filled to Mark 1 with VEGETABLE OIL. A hole is cut in the bottom of the bottle and a straw is attached. How long does it take for the VEGETABLE OIL level to reach Mark 2?

- What is different about this problem and the previous problem?

- How will this difference affect the time it takes for the fluid to drain?
  A. Longer to Drain
  B. Faster to Drain
  C. Same Time to Drain

- Using equations from class, calculate the time it should take for VEGETABLE OIL to drain from Mark 1 to Mark 2.

- Do your calculations match what you observed? Why or why not?