

Name:
Period:

LAB 7.5 - CLAY BOATS DATA VERIFICATION
(or Gathering Evidence to Support or Refute Bill Nye's Hypothesis)

BACKGROUND

Any time a scientist presents results from an experiment, it is important that other scientists be able to repeat the experiment and replicate the results (do it again and get the same thing), otherwise the results are not valid. In Bill Nye's video, the boy carried out an experiment similar to ours, but he got different results than we did. This means that either his results are wrong, ours are wrong, or there is some other explanation. We must determine which is correct.

PROBLEM

1. Is Bill Nye's data correct, or is ours?

HYPOTHESIS

Think about the Clay Boat experiment. What variables are we comparing here?
Hint: it's more than just mass and volume.

Write a hypothesis (in proper hypothesis format) about this experiment.

MATERIALS

- ◆ Clay
- ◆ Overflow Container
- ◆ 600mL beaker (for testing whether or not the clay floats)
- ◆ 250mL beaker (for collecting water out of the overflow container)
- ◆ Triple-beam balance
- ◆ Apron & Goggles
- ◆ Water
- ◆ Paper towel
- ◆ Graduated Cylinder

PROCEDURE

1. Obtain some clay and measure the mass. For best results, clay samples should be between 10 and 40 grams. Record the mass here _____
2. Form the clay into a shape that sinks.

3. Measure the water displaced by the clay. Record your results in table 7.5-1.
4. Dry your clay with a paper towel.
5. Form the clay into a shape that floats and repeat step 3.
6. Clean up your lab station and enter the data on the class data table.

DATA

Table 7.5-1: Mass & Volume of Water Displaced by Clay

Mass of Clay (g)		Volume of Water Displaced (mL)
Sinking		
Floating		

SUMMARY

Summary and Challenge Questions must be typed or neatly written on a separate piece of paper.

1. Graph the class data from Lab 7.5. Include both the floating and sinking clay on the same graph. Use a different symbol/color to indicate which is floating and sinking, and include a legend. Your graph will be most useful if it is computer generated.

RESULTS

Write 4 or more sentences that explain your results and how they support or refute Bill Nye's assertion that floating and sinking objects displace the same amount of water. Use specific examples and evidence from the **graph** to support your statements.

Summary and Challenge Questions must be typed or neatly written on a separate piece of paper.