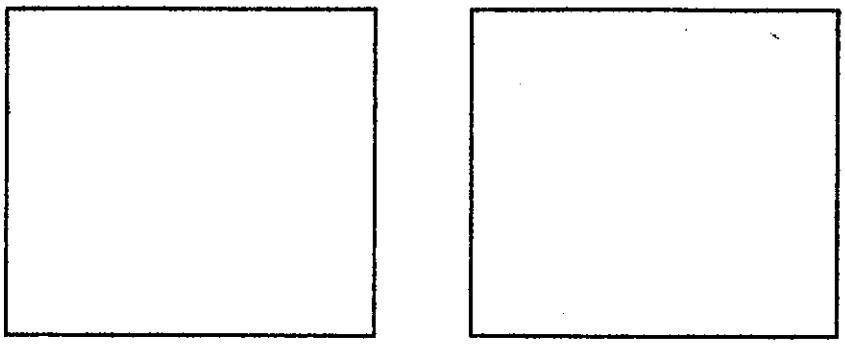
# Density Lab
## A Physical Property of Matter

### What is density?

Your instructor will provide you with equal amounts of water and mercury. Hold both samples in your hands. What's the difference? How can you explain this difference? Draw what you think the molecules of water and atoms of mercury look like in the squares below.



Water Mercury

If you put a nail into water, it sinks. We say that the nail is more dense than the water. However, consider that ocean liners and naval vessels are made of iron or a metal alloy. Why do these ships float?

### PROCEDURE

1. Your teacher will provide you with a set of unknown solids and liquids. Your instructor will specify how many of each you are to use.
2. Record the number or letter of each unknown. Write a description of each substance.
3. The formula for density is D = M / V. Use this formula to determine the density of each substance. It is very important that you do this as accurately as possible.

4. Make a data table that includes - unknown letter/number, calculated density, description, identity, actual density.
5. Use the CRC Manual to try to identify each of your unknowns using the density and any other physical properties you observe. Record it's identity and actual density into your data table.

## BONUS! BONUS! BONUS! BONUS! BONUS! BONUS! BONUS!

So, you think you understand density? Try this challenge.

Your instructor will provide you with a specific mass of clay. Your job is to construct a boat that will hold more mass than any other groups in class. The winning group will receive extra credit points.

The question is - WILL IT FLOAT?