Name Period Date

**Determining Densities Inquiry**

Today I have a great variety of different objects for you to determine their densities. Some of the materials have what scientists call “known densities.” In other words, their densities have been calculated to a high degree of accuracy in a lab, using sophisticated measuring devices.

After you have determined the densities of the objects, you can compare your results to the known densities. So, your challenge is to measure and weigh your objects very carefully, so your results are very close to the known densities.

**Density is**

**Part 1: Regular Shapes**

Determine the densities of each of the objects in the Regular Shapes group and record your answers on the Determining Densities Datasheet. Round your answers to the nearest one-hundredth.

***How to determine the densities of regularly shaped objects:***

**Part 2: Irregular Shapes**

Determine the densities of each of the objects in the Irregular Shapes group and record your answers on the Determining Densities Datasheet. Round your answers to the nearest one-hundredth.

***How to determine the densities of irregularly shaped objects:***

**Part 3: Graphing**

Before graphing your data, you will need to first figure out the density of water.

Density of Water:

Create a scatter graph for the objects. The mass (in grams) is on the x-axis, and the volume (in cm3) is on the y-axis.

Add in the diagonal dashed line that represents the density of water.

1. What do all of the object have in common that are above the dashed line?
2. What do all of the objects have in common that are below the dashed line?
3. Why did different groups often get slightly different densities for the same objects?
4. If an object has a density greater than 1.0, will it float or sink in water?
5. If salt is added to water, will the water become more dense or less dense?
6. Why did the regular cola sink and the diet cola float?