# Open Chemistry Online – Post Quiz #1 (OpenStax Ch. 1)

A solid object is placed into a graduated cylinder containing water, to calculate its volume using a technique called water displacement. See the following diagram for context on the method **(but ignore the measurements in the image!)**

1. Initially, an object of an unknown metal is placed into a graduated cylinder containing 35.14 mL of water. When placed into the graduated cylinder, the water level rises to 64.19 mL. Calculate the volume of the object.

Measuring cylinder with gold nuggets

Description automatically generated

1. The object from part a is then placed on a balance (aka. a scale) and a mass of 0.53 lbs is obtained. Calculate the density of the object in g/mL. **(1 kg = 2.205 lbs).**
2. See the table of metals and their densities below. Based on this information and the calculations in b, predict the most likely identity of the metal. **Metal = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Metal** | **Density** |
| Aluminum | 2.60 g/mL |
| Iron | 7.87 g/mL |
| Silver | 10.5 g/mL |
| Lead | 11.3 g/mL |

1. Based on your results, would you consider this experiment precise? Would you consider the experiment accurate? Explain both precision and accuracy of the experiment, and include at least 1 step to consider for a follow-up experiment.