

Density

Background Information: In the course of the day, you will pick up many different objects; some large and some small. You may notice that these objects have many different weights. If you pay close attention, you may find objects of about the same size that are vastly different weights. For example, you know from experience that a gallon of milk is much heavier than a pillow you may sleep on, even though the pillow is larger.

Why is this? After all, if two objects are the same size, shouldn't they be the same weight? It all depends upon the material from which the object is made. This property is called *density*.

1. How do you find volume of a cube?
2. What property would you use a scale balance to determine?
3. The formula for density is:

$$\mathbf{D} = \underline{\hspace{2cm}}$$

Data Table

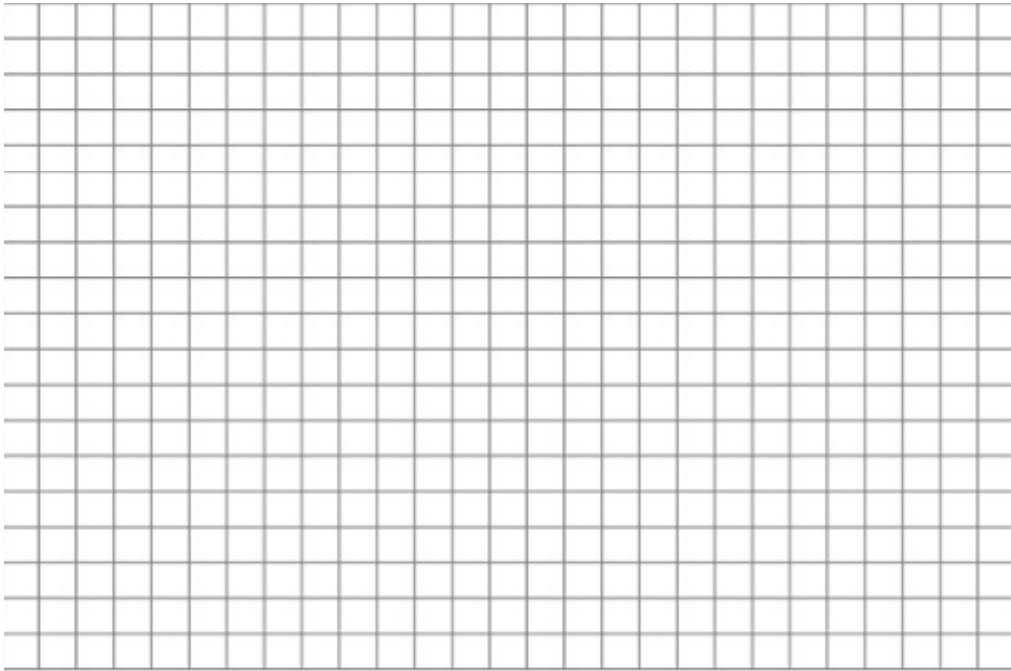
	Volume	Mass	Density	Mystery Material?
Station 1				
Station 2				
Station 3				
Station 4				
Station 5				
Station 6				

Procedure

1. Use the balance to determine the mass of the mystery material located at your station. Record this in your data table.
2. Use a ruler to determine the length, width and height of the mystery material. Record this in your notebook.
3. Use the formula for **DENSITY** to determine the density of your mystery material.
4. Each material or element has a unique density. Use the identification key to determine the name of your mystery material.
5. Move to the next station, and repeat steps 1-4 for all 6 stations.

Analysis

Create a graph that includes demonstrates the relationship between mass (g) and volume (cm³).



1. What is the relationship between mass, volume and density? Provide evidence.