Density	Grade 8: Understanding Matter and Energy

ρ = Density ρ = m │v   Density = Mass/Volume

m = Mass   m = ρ · v   Mass = Density x Volume

v = Volume   v = m │ ρ Volume = Mass/Density

Mass / Density | Volume triangle diagram
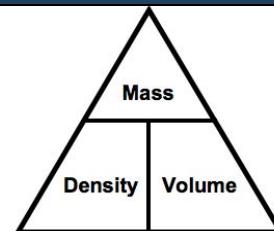
1. Generally, which one has the higher density (circle one).

Liquid	Gas	Solid
or	or	or
Gas	Solid	Liquid

2. How can you use water to determine the volume of an irregularly shaped object?

    When an object is placed into water, it displaces water equal to its volume. To determine the volume of the irregular object you need to subtract the original volume of the water from the volume when the irregular object is fully submerged in the water.

3. Why do the straw and paper clip float differently in each of the liquids tested?

    The straw and paper clip float differently because each liquid has a different density (therefore buoyancy is different), while the density of the straw and paper clip remain the same.

4. Determine the density, mass or volume of the liquids in the following questions.

    a. If the mass of the liquid is 200g and the volume is 50mL what is the density?

Equation Needed	Answer
ρ = m │v	ρ = 200g │ 50mL ρ = 4g/mL Therefore, the density of the liquid is 4g/mL.

    b. If the density of a liquid is 10g/mL and the volume is 70mL what is the mass?

Equation Needed	Answer
m = ρ · v	m = 10g/mL · 70mL m = 700g Therefore, the mass of the liquid is 700g.

5. CHALLENGE: Figure out the density of two random items in your home using the method shown to you in the video.

Object	Mass	Volume	Density
1	N/A	N/A	N/A
2	N/A	N/A	N/A