Density Chapter 8 Review

1. Define Density, Mass and Volume.
2. **Using Particle Theory, compare the density of solids, liquids and gases and be able to describe why.**

Be able to calculate density, mass and volume. Review pages 312-314 **Calculating Density**

1. What is displacement? What does it have to do with volume?
2. What is the relationship between temperature and density?
3. What are some applications of different densities?

**Density**.

Substances with lower density will float on substances with higher density.

**Mass** – the amount of matter in a substance

**Volume** – the amount of space taken up by a substance.

**Density and the Particle Theory**

**General rule** : solids are more dense than liquids and both are more dense than gases.

Solids particles are closer together and held with attractive forces, Liquids are slightly further apart and gases are the furthest apart.

**Exception:** Water ; Ice is less dense than liquid water. This is because the particles move slightly further apart as they become fixed in position.

Density is determined using a mass to volume ratio. In other words

**Density (D) = mass (m)**

**Volume (V)**

Mass can be obtained by weighing the object in grams

Volume can be obtained by finding:1 the mathematical formula EX: v= l x w x h for regular shaped objects

2. by displacement for irregular shaped objects where the object is placed in a known amount of water and the amount of water displaced gives the volume.

**Displacement –** the amount of space taken up when an object is placed in a fluid

Review pages 312-314 **Calculating Density**

Density is affected by

**Evaporation-** Water has a higher density and when it is replaced by air its density is decreased. Example: Fresh cut wood when it dries.

**Temperature –** heating causes particles to speed up and spread out making it less dense. The air inside a hot air balloon becomes less dense when heated.