

What do you already know about density?

*If a sample of matter has high density (or is described as “more dense”), its atoms/molecules are packed tightly together.

Note: This is ALWAYS true when comparing samples of the same type of matter - like air in the atmosphere or water. But, this is just one of the factors that influences density.

*Temperature of matter can affect its density.

If heat is transferred to a sample of matter, its energy of motion is increased. The molecules move more & spread out (become less dense).

This is why we measure the density of matter at room temperature.

*Matter that is **less dense** will **float** upon **more dense** matter.

Think of the warm, less dense, water in the summer floating on top of the colder, denser water below, or the warm, less dense, air rising in convection currents.

*The formula for measuring density is Mass divided by Volume.

$$D = \frac{mass}{volume}$$

(The fractional line is a division line!)

*The unit for density is usually g/cm³. Read as grams per cubic centimeter.

*The density of water is 1 g/ml. (a liquid)

**New: Density of a material is affected not only by how tightly packed the atoms are, but also by the mass of the atoms, the size of the atoms and the arrangement of the atoms.

Related to a 6th Gr. Math Concept: **Density is a **unit rate!!**