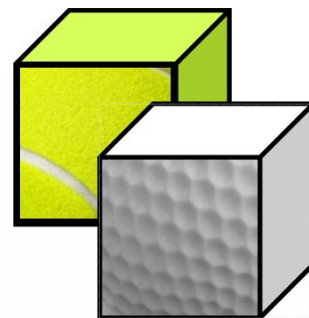


DENSITY

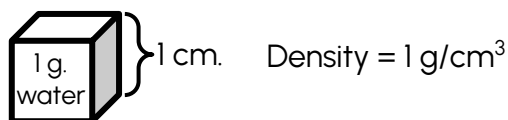
What happens when you put a golf ball in water? It sinks. What happens when you put a tennis ball in water? It floats! Why do some objects sink and some objects float? It has to do with **density**. Density is how tightly packed the matter is inside an object. Dense objects have more mass per volume than less dense objects. That means there is more matter packed into a smaller space.



Think of the golf ball and the tennis ball. A tennis ball is larger than a golf ball. But if you were to hold them both at the same time, it actually feels lighter. A golf ball is more dense than a tennis ball. It has more "stuff" packed inside it. A tennis ball is hollow inside. It is full of air which makes it less dense.

Density is measured by dividing the object's mass by its volume. **Mass** is the amount of matter that makes up an object. It is usually measured in grams. **Volume** is how much space the object takes up. It is usually measured in cubic centimeters. So density is measured in grams per cubic centimeter or g/cm^3 .

The density of water is 1 gram per cubic centimeter. What is a cubic centimeter? Think of a cube made of squares with sides measuring 1 centimeter. If you filled that cube with water, it would hold 1 gram of water.



If an object is more dense than water, it will sink. If it is less dense than water, it will float. Imagine cutting a cube out of the golf ball with sides measuring 1 centimeter. This cube of golf ball would have a mass greater than 1 gram. The golf ball is more dense than water and will sink. If you could cut a cubic centimeter sized piece out of the tennis ball, it would have a mass less than 1 gram and will float.