

QUESTION:

What is the relationship between an object's density and its ability to float?

CLAIM:

Objects float if their density is less than that of the substance they are in. If the object is more dense than the substance it is in, it will sink.

EVIDENCE:

Object/Substance	Density	Sink or Float
Ping Pong Ball	0.10 g/cm ³	Float
Rough Cork	0.25 g/cm ³	Float
Smooth Cork	0.51 g/cm ³	Float
Wooden Block	0.52 g/cm ³	Float
Wooden Dowel	0.67 g/cm ³	Float
WATER	1.00 g/cm ³	--
Clear Plastic Block	1.19 g/cm ³	Sink
Golf Ball	1.36 g/cm ³	Sink
Dice	1.66 g/cm ³	Sink
Marble	2.66 g/cm ³	Sink
Silver Metal Block	2.75 g/cm ³	Sink
Gold Metal Block	8.5 g/cm ³	Sink

**Substances with densities greater than water sink in water.
Substances with densities less than water float in water.**

JUSTIFICATION:

Density is a measure of how tightly packed the particles are in a substance. It compares the amount of matter (mass) to the amount of space it takes up (volume), and is calculated with the equation:

$$d = \frac{m}{V}$$

where "d" is density, "m" is mass, and "V" is volume.

The density of solid substances is usually measured in g/cm³, while the density of liquids is usually measured in g/mL.

When substances are placed in a fluid (liquid or gas), they will either sink or float.

The density of water is 1 g/mL.

Name: _____
Pd: _____
Ast: _____