

Pretest

Density Worksheet

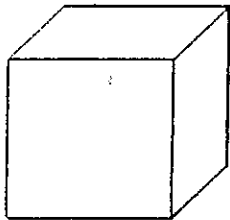
Name: _____

Section: _____

Date: _____

1. Write the Density formula below.

2. Calculate the density of the metal cube listed below. The mass is 8 grams and the volume is 4 ml.
What is the density? Write the problem and answer below.

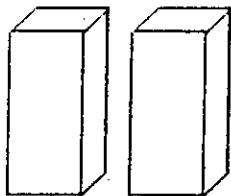
 $D =$

3. Imagine that the cube is split in half exactly. (Use the numbers for mass + volume at

What is the mass of one half of the cube? _____

What is the volume of one half of the cube? _____

Calculate the density. Write the problem and the answer below.

 $D =$

4. Does size affect density?

5. Circle the less dense item.

a. wood or water

b. steel or water

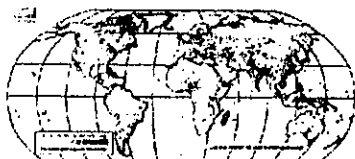
c. helium or air

d. oil or water

Density is...
the amount of _____ in a
given area.

Ex. population density

(Alaska has 1 person/mi², New Jersey has 1174 person/mi²)



Density

For science... density is equal to the mass
of a thing divided by its volume.

$$D = \frac{m}{v}$$

- Mass – amount of _____ – measured in _____ (g)
- Volume – amount of _____ something occupies – measured in _____ or _____
- Mass = D(v) v = m/d

Volume

For regularly shaped objects-

$$\text{_____} \sim (\text{cm}) \times (\text{cm}) \times (\text{cm}) = \text{cm}^3$$

For irregularly shaped objects- use

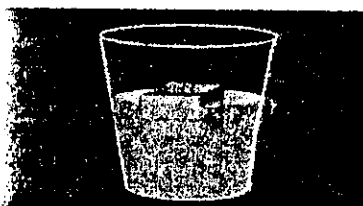
_____ (amount of water pushed
aside equals the volume of the object)



Archimedes Principle

- Archimedes- Greek philosopher
- Was in his bath tub one morning – he noticed that as his body went in to the water – the water rose out of the way. He realized that the volume of H₂O that rose was equal to the _____.
- So... the volume of an object is equal to the volume of _____ it displaces
- 1g H₂O = 1mL H₂O = 1 cm³ H₂O

Buoyancy



- _____ force that keeps things afloat.
- in water: an object _____ if its buoyancy is greater than its weight; _____ if its weight is greater than its buoyancy
- the buoyant force on the solid object is equal to the weight of the water displaced

Practice time

- If an object has a density <1g/cm³, what will it do if placed in water?
- If an object has a density >1g/cm³, what will it do if placed in water?
- If an object has a density =1g/cm³, what will it do if placed in water?