What is Density?

Key Concepts:

- _____ is a characteristic property of a substance.
- The _____ of a substance is the relationship between the _____ of a substance and how much space it takes up (_____).
- The _____ of the atoms, their _____, and how they are arranged determine the _____ of a substance.
- Density equals the _____ of a substance divided by its _____. **Density = mass/volume   (D = m/v)**
- Objects with the same volume but different mass have different _____.

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What is Density? Processing

Calculate the density using the formula **Density = mass/volume (D = m/v)** and record it in the chart.

Sample	Volume (cm³)	Mass (g)	Density (g/cm³)	Material
A	15.6			
B	15.6			
C	15.6			
D	15.6			
E	15.6			
F	15.6			
G	15.6			
H	15.6			

Compare the value you found for density with the given value in the chart below to identify which cube is made out of which material. Write the name of the material in your chart for cubes A – H.

Material	Approximate Density (g/cm³)
Aluminum	2.9
Brass	8.8
Copper	9.3
Steel	8.2
PVC	1.3
Nylon	1.2
Oak	0.7 – 0.9
Pine or Poplar	0.4 – 0.6

The size, mass, and arrangement of atoms affect the density of a substance.

If a substance has *high density,* what can you guess about the size, mass, and arrangement of atoms that make up the substance?

If a substance has a *low density,* what can you guess about the size, mass, and arrangement of the atoms that make up the substance?