All sections marked with a ⚛ are considered essential concepts and must be completed to receive full credit on WS.

1. Density B	a. A measurement of how easily a solid can be pounded into thin sheets ⚛	1. Tensile Strength D	A. A unit of volume that equals 1 mL. ⚛
2. Hardness E	b. A measurement of the "compactness" of a substance. ratio of mass to volume.	2. viscosity C	B. In a formula, what the horizontal line means: ex. the line in $\frac{m}{v}$
3. Brittleness D	c. Measure of a solid's ability to return to its original shape after stretching.	3. cm^3 A	C. Measure of a fluid's resistance to flow. (How thick a fluid is.)
4. Elasticity C	d. A measure of how easily a solid will shatter.	4. g/mL E	D. Measure of how hard it is to break something by pulling.
5. Malleability A	e. A measure of how easily a solid can be scratched.	5. ÷ B	E. Unit of density.

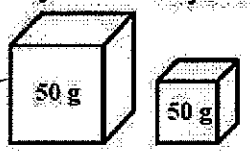
A soccer ball and a bowling ball are approximately the same size.

Which one is more dense? Bowling Ball

Why? More matter, same volume

Which object is the most dense? B

Why? Same Matter different volume (smaller)



An object has a volume of 3.5 cm^3 and a mass of 7 grams. Find the object's density.

m 7g
V 3.5cm^3
d ?

$d = \frac{m}{V}$ $\frac{7g}{3.5cm^3} = 2\ g/cm^3$

If 60 grams of a liquid takes up 120 mL, how dense is the liquid?

m 60g
V 120mL
d ?

$d = \frac{m}{V}$ $\frac{60g}{120mL} = 0.5\ g/mL$

When building a bridge, engineers want the bridge cables to have great Tensile Strength

Glass can be scratched by quartz. Which one is harder?

Lead feels very heavy for its size. It is very Dense.

Transmission fluid is a very thick oil that flows slowly. Transmission fluid is very Viscous.

When a fluid gets hotter, do you think it will be more or less viscous? *(Think of warmed-up syrup.)* less

When gold is hammered it "squishes". Iron Pyrite is known as "Fool's Gold". It is not malleable like gold. but shatter into many pieces when struck by a hammer. Iron Pyrite is brittle.

A hunter's wood bow stores energy that is given to the arrow. The wood's ability to springs back means it is very elastic.

***Challenge**: If a substance has a density of 2.5 g/cm^3, how much mass will 50 cm^3 of it have?*

m ?
V 50cm^3
d 2.5 g/cm^3

$d = m/V$ $m = 50cm^3 \cdot 2.5\ g/cm^3$

$m = d \cdot v$

In science we describe substances and their various properties. Each substance has many different properties. Fill in the following table, deciding how each property best describes the following substances. ⚛

Substance	Dense?	Brittle?	Viscous?	Malleable?	Elastic?	Hard?	Tensile Strength?
Glass	*medium*	*yes*	*N/A*	*no*	*no*	*yes*	*high*
Rubber	med	no	N/A	No	yes	No	High
Ice	Low	yes	N/A	No	No	Med	Low
Molasses	Med	n/a	yes	N/A	N/A	N/A	n/a
Steel	Dense	no	N/A	Yes	A little	Yes	High
Styrofoam	Low	no	N/A	No	A little	No	Low