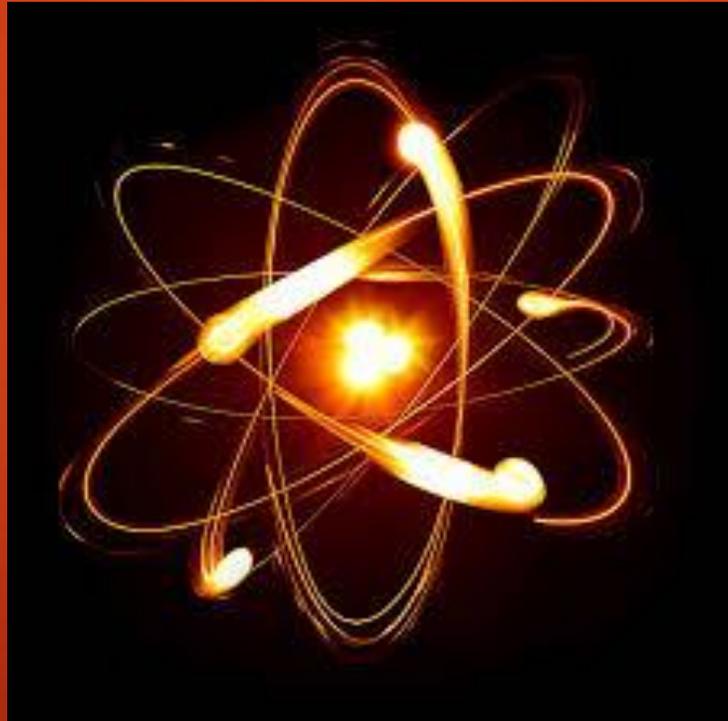


CHEMISTRY

# WHAT IS CHEMISTRY?

Chemistry is the study of matter.

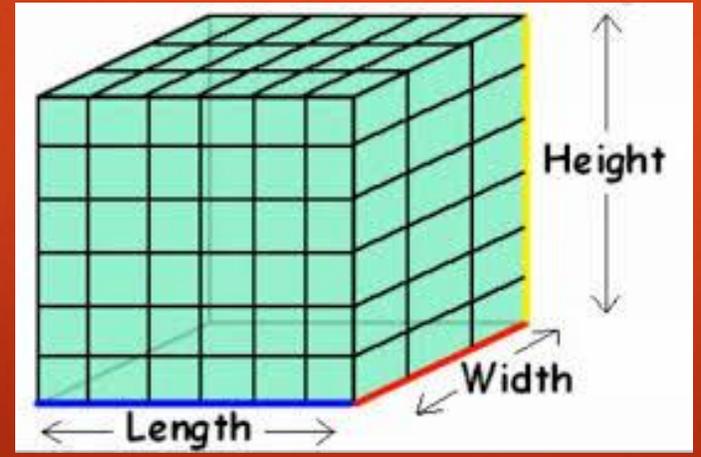


# WHAT IS MATTER?

- ▶ Matter is anything that has mass and volume.
  - ▶ So anything that is made up of atoms and takes up space.
  - ▶ Everything in our universe is made up of some form of either matter or energy.



+



= **MATTER**

# LAW OF CONSERVATION OF MATTER

- ▶ Matter is never created, nor destroyed, only changed.
  - ▶ In other words the amount of matter that is currently in our universe will never change, we will never have anymore, and we will never have any less.

# LAW OF CONSERVATION OF MATTER

- ▶ Matter is constantly being “recycled” in our universe.
  - ▶ Think of matter as Legos. We can constantly put them together to make things, and then take them apart and use the same pieces to build new things.

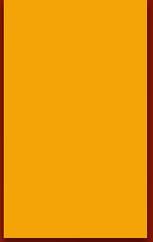
We can tell different types of matter apart by their properties...



# What is a “PROPERTY”?

- ▶ Properties are the characteristics, or traits, a specific substance has.
  - ▶ Examples:
    - ▶ Gold has the physical property of luster (being shiny!).
    - ▶ Water has the physical property of being transparent (see through).
    - ▶ Oxygen has the physical property of being a gas at room temperature.





# Physical Properties of Matter

# PHYSICAL PROPERTIES

(Copy chart)



ALL SUBSTANCES	SPECIFIC TO METALS
Color	Luster
Shape	High Density (tends to be heavy)
Size	Malleability
Texture	Ductility
Mass	Opaque
Volume	Sonorous
Density	Magnetic abilities
State (Solid, Liquid, Gas...)	Conductivity
Melting/ Freezing Points	

# PHYSICAL CHANGES

- ▶ Changes to a substance's appearance without changing the substance's identity.
  - ▶ Translation: Changing the way a substance looks without changing that substance into something new/ different.

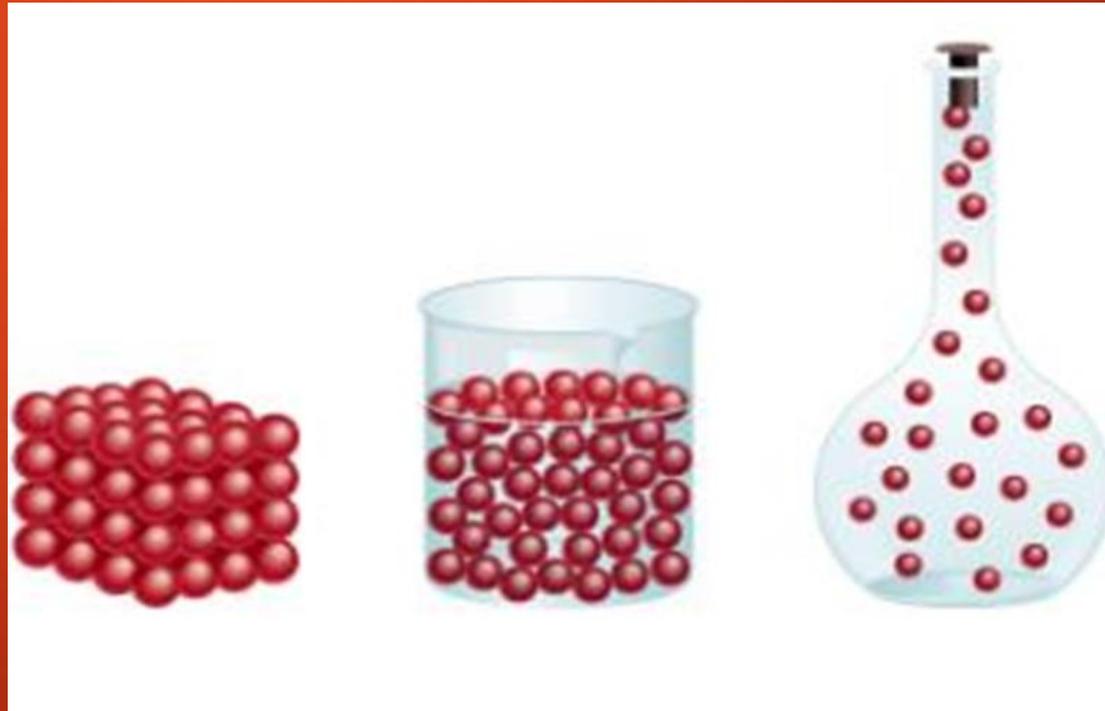
# PHYSICAL CHANGES

## ▶ Examples:

- ▶ Cutting your hair is a physical change. Your hair is shorter, but is still hair. Nothing new was created.
- ▶ Shattering glass is a physical change. There are now many pieces instead of one big piece, but it is all still just glass.
- ▶ Melting Ice is a physical change. The ice is now a liquid, but is still made up of water.

# PHYSICAL CHANGES

- ▶ Changes in states of matter:(Solid, Liquid, and Gas...)
- ▶ Energy added or taken away will cause the matter to vibrate faster or slower.
- ▶ Slowest moving matter is classified as a solid. Fastest moving matter is classified as a gas.



# EXAMPLES OF PHYSICAL CHANGES

(COPY CHART)

Ripping	<b>Melting</b>	Changing color with dyes
Breaking	Freezing	Cutting
<b>Dissolving</b>	Condensing	Tearing
Stretching	Vaporizing	Bending

# PHYSICAL CHANGES

- ▶ Physical Changes
  - ▶ NEVER create anything new!