General Properties of Matter
MATTER

DEFINITION: ANYTHING THAT HAS

- **Mass**
- **Takes up Space**
1. **Mass**: The amount of matter in an object. The number of atoms and molecules.
2. **Volume** – the amount of space it takes up
3. **Weight**: the effect of gravity on mass
General properties

4. **Density** – compares mass to volume

\[
\text{mass} = \frac{\text{mass}}{\text{volume}}
\]
5. **Inertia** – resists a change in its state of motion
Scientific Law of Volumes

• No two things can occupy the same space at the same time.

Technically, the glass is always full.
PHYSICAL PROPERTIES OF MATTER

CHARACTERISTICS THAT CAN BE OBSERVED OR MEASURED
Taste

Yummy Yucky
VISCOSITY

· RESISTANCE TO FLOWING
CONDUCTIVITY

· ABILITY TO ALLOW HEAT OR ELECTRICITY TO FLOW
Malleability

- Ability of a solid to be hammered without shattering
HARDNESS

· RESISTANCE OF A MATERIAL TO BEING SCRATCHED BY ANOTHER MATERIAL
Attracted to a Magnet
State of Matter

- Solid
- Liquid
- Gas
- Plasma
Solubility

- The ability of one substance to dissolve in another at a given temperature and pressure.
Buoyancy

Able to stay immersed
Or floating in a liquid
Chrystalinity

- Atoms are arranged in a regular, repeating pattern.
Transparency

- Allows light to pass through with little interference.
Freezing Point

- The temperature at which a liquid changes to a solid.
MELTING POINT

TEMPERATURE AT WHICH A SUBSTANCE CHANGES FROM A SOLID TO A LIQUID
BOILING POINT

- TEMPERATURE AT WHICH A SUBSTANCE CHANGES FROM A LIQUID TO A GAS
DENSITY

· MASS/VOLUME
Luster

Ability to reflect light (Shiny)
Color
Size & Shape

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Brittleness

- Shatters when hit with a hammer.
Ductility

- The ability of a substance to be pulled into a wire.
Physical properties are used for

- To choose the right material for the right job
- To separate mixtures:
  - Filtration
  - Distillation