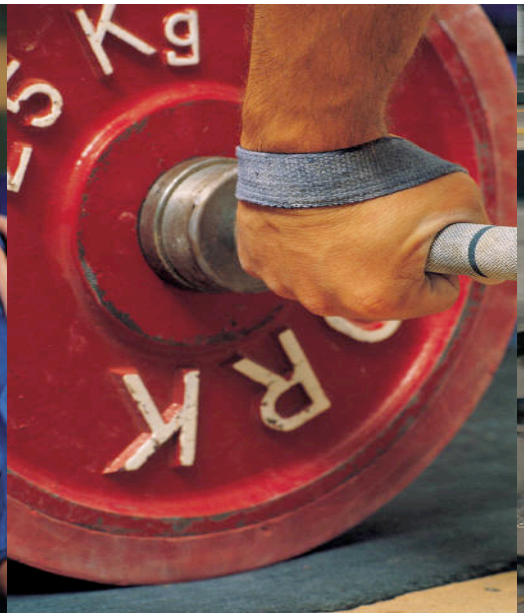
MATTER

Ch 3

MATTER

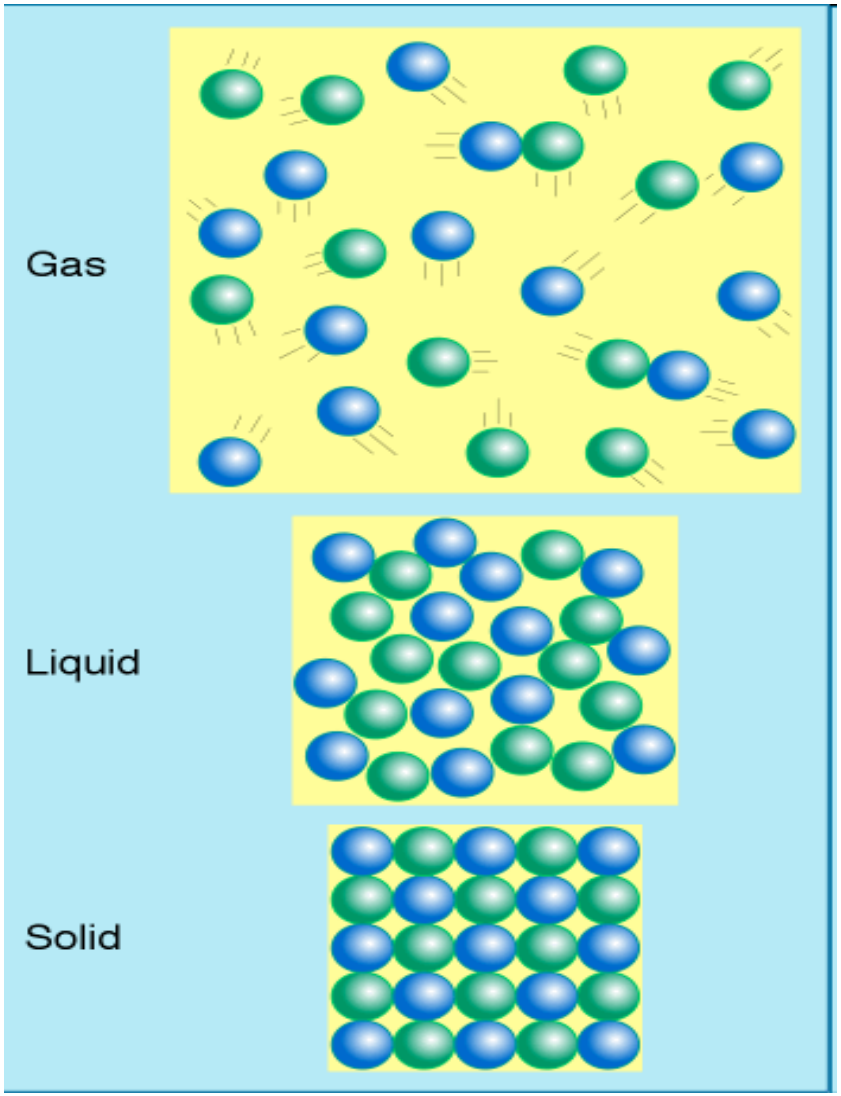
- MATTER: anything that takes up space.
- Can be element, compound or molecule.



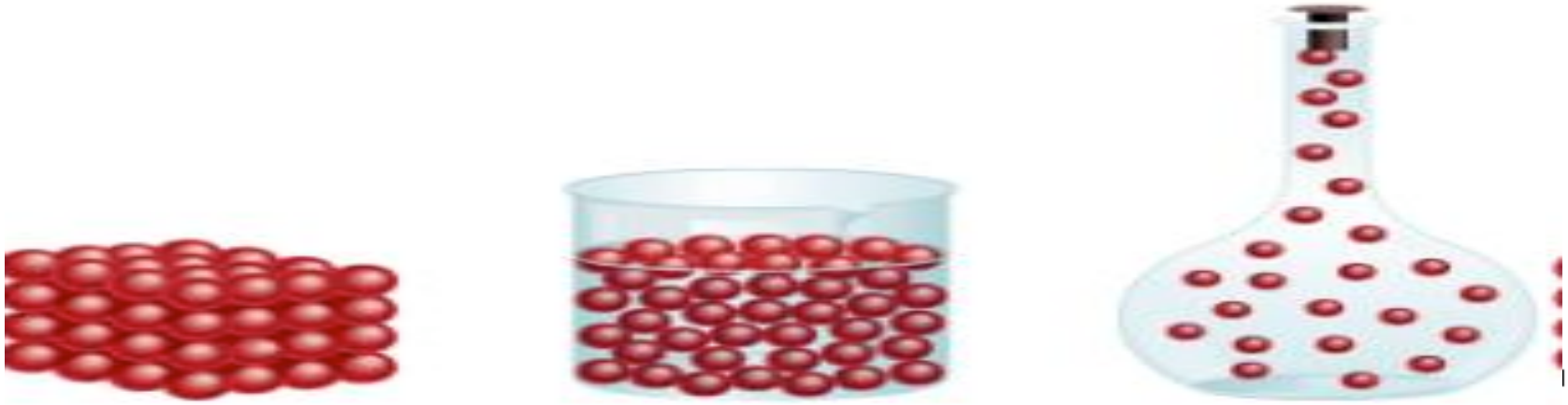
3 STATES OF MATTER

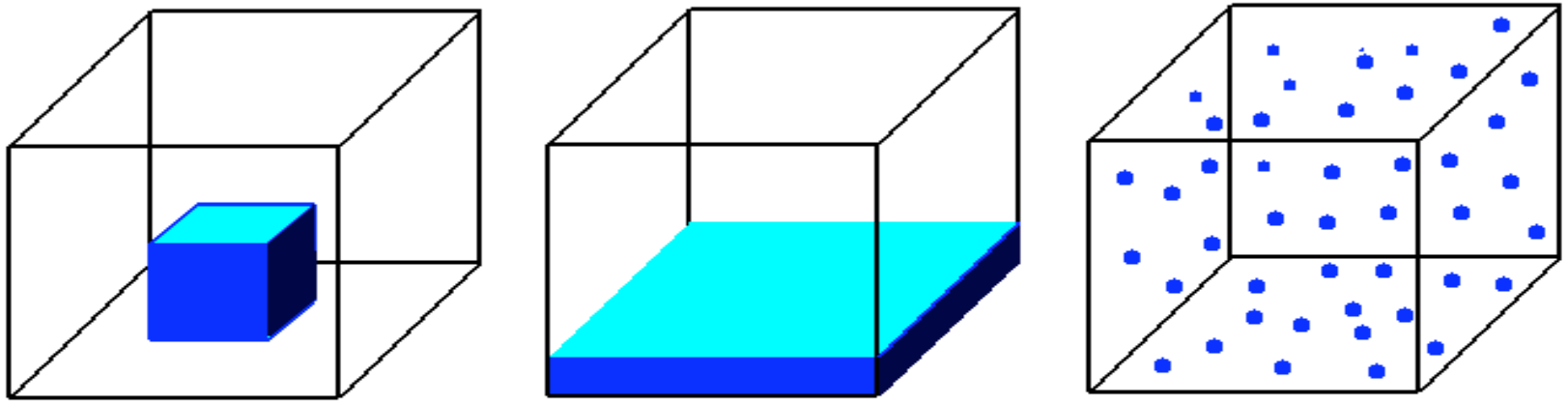
- SOLIDS- has definite shape & volume.
- LIQUIDS- has volume but no shape.
- GASES- volume changes.
- http://www.harcourtschool.com/activity/states_of_matter/

PARTICLES in MATTER



- GAS- move independently
- LIQUID- loosely connected
- SOLID- close together





Solid

Holds Shape

Fixed Volume

Liquid

Shape of Container

Free Surface

Fixed Volume

Gas

Shape of Container

Volume of Container

Solid

[particles close together]

Solids-The state of matter that has a definite volume and shape.

Crystalline Solids-The particles that make up the solid form a regular, repeating pattern. They have a distinct melting temp. (salt)

Amorphous Solids-The particles that make up the solid are not arranged in a regular pattern and do not have a distinct melting temp. (Glass)

LIQUIDS

[particles loosely connected]

- *Liquid-The state of matter that has a definite volume but no shape of its own.*
- *Fluid-a substance that flows.*
- *Viscosity-A liquid's resistance to flow.*
- *Surface Tension-An inward pull among the molecules of a liquid that brings the molecules on the surface closer together.*

Gases

[particles independent]

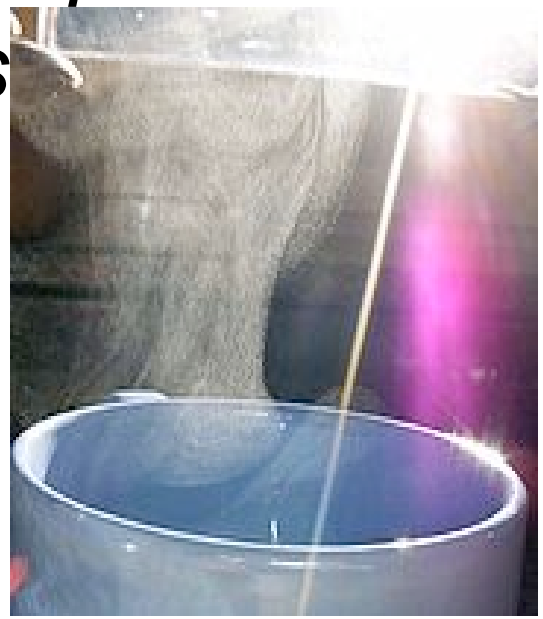
- *Gas-The state of matter that takes the volume and shape of its container.*
- *Pressure-The outward force of the gas particles on its container.*

Change between Solid & Liquid

- *Melting- The change in state from a solid to a liquid.*
- *Melting point-The specific temperature a substance turns from a solid to a liquid.*
- *Freezing-The change from a liquid to a solid.*

Change from Liquid to Gas

- *Vaporization-Particles in a liquid gain enough energy to move independently, forming a gas.*
- *Evaporation-Vaporization that takes place only on the surface of a liquid.*
- *Boiling-When a liquid changes to a gas below its surface as well as at the surface.*
- *Boiling Point-The temperature at which a liquid boils.*



Change from Gas to Liquid

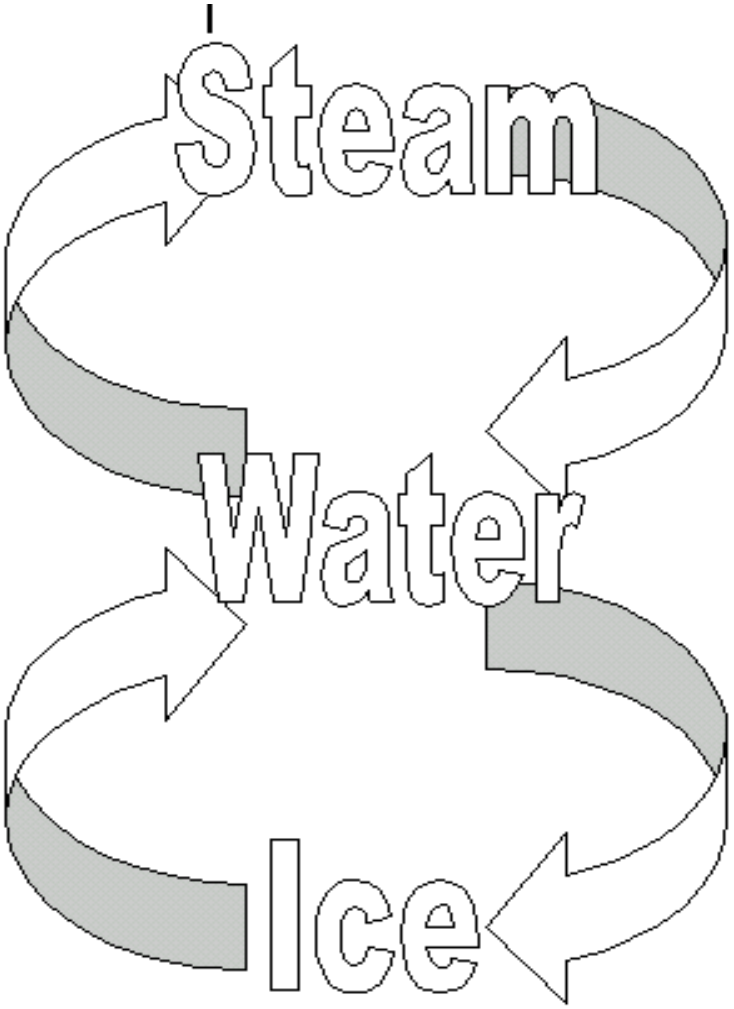
- *Condensation-The change in state from a gas to a liquid.*

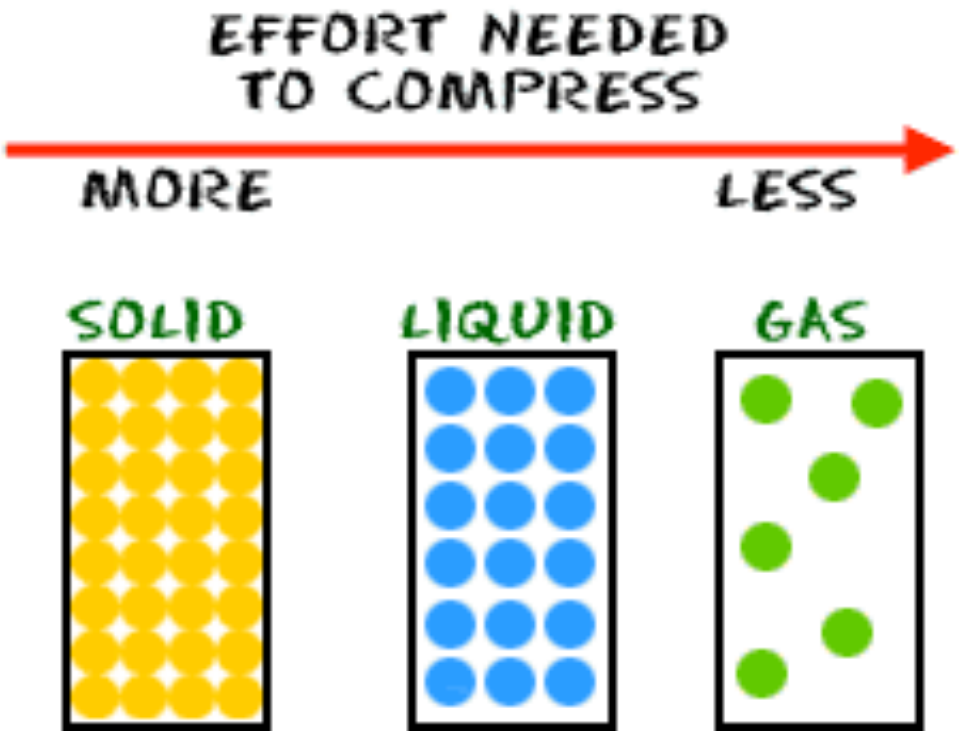
Change from Solid to Gas

- *Sublimation-Particles of a solid do not pass through the liquid state as they form a gas.*

ie:dry ice

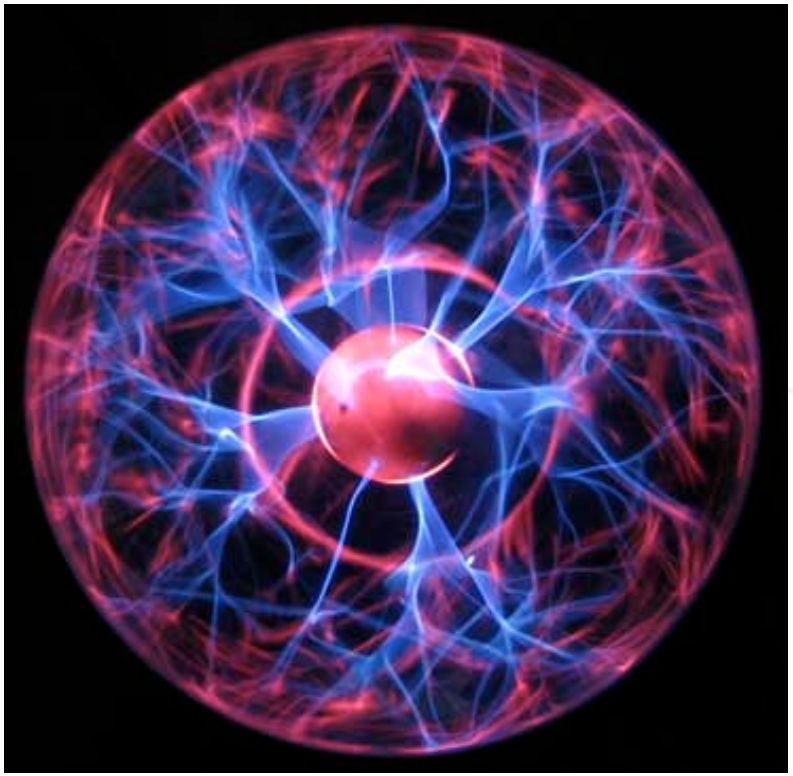
MATTER CHANGES

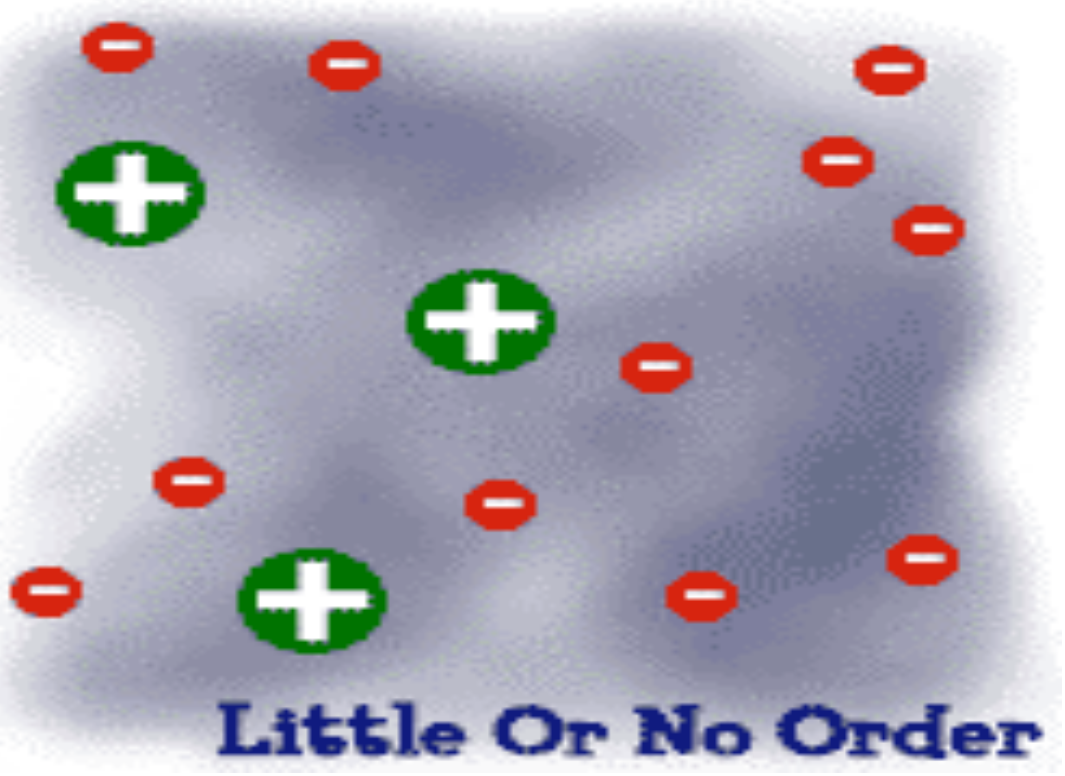


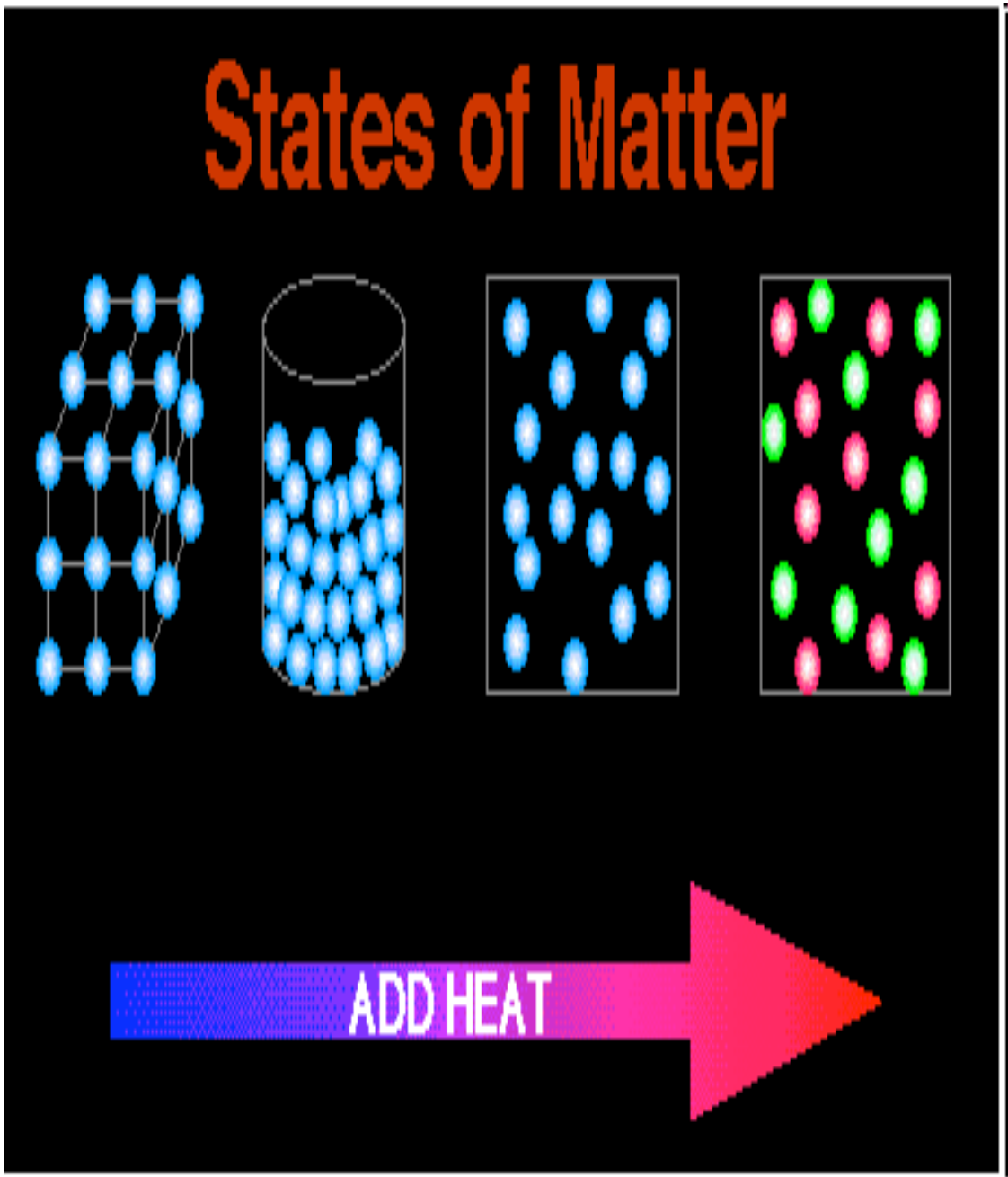


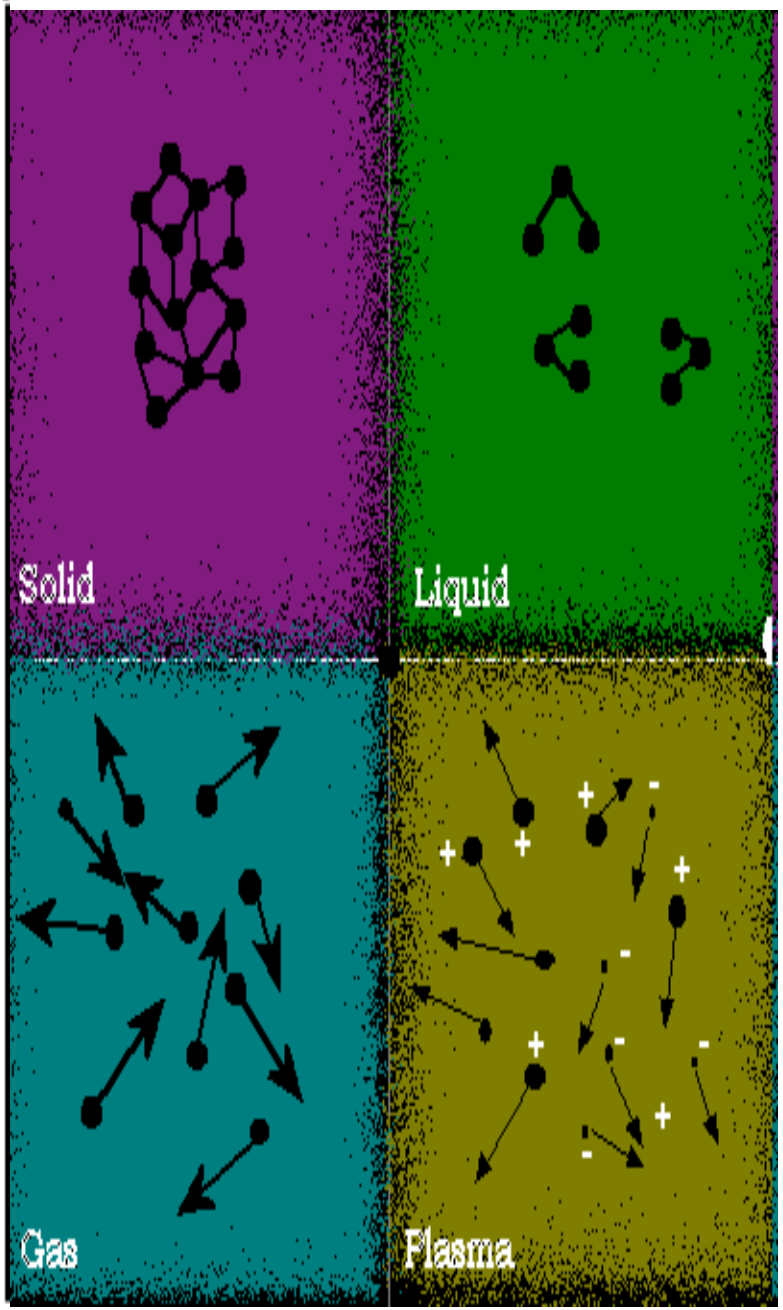
PLASMA

- 4th state of matter.
- Electrically charged gas.





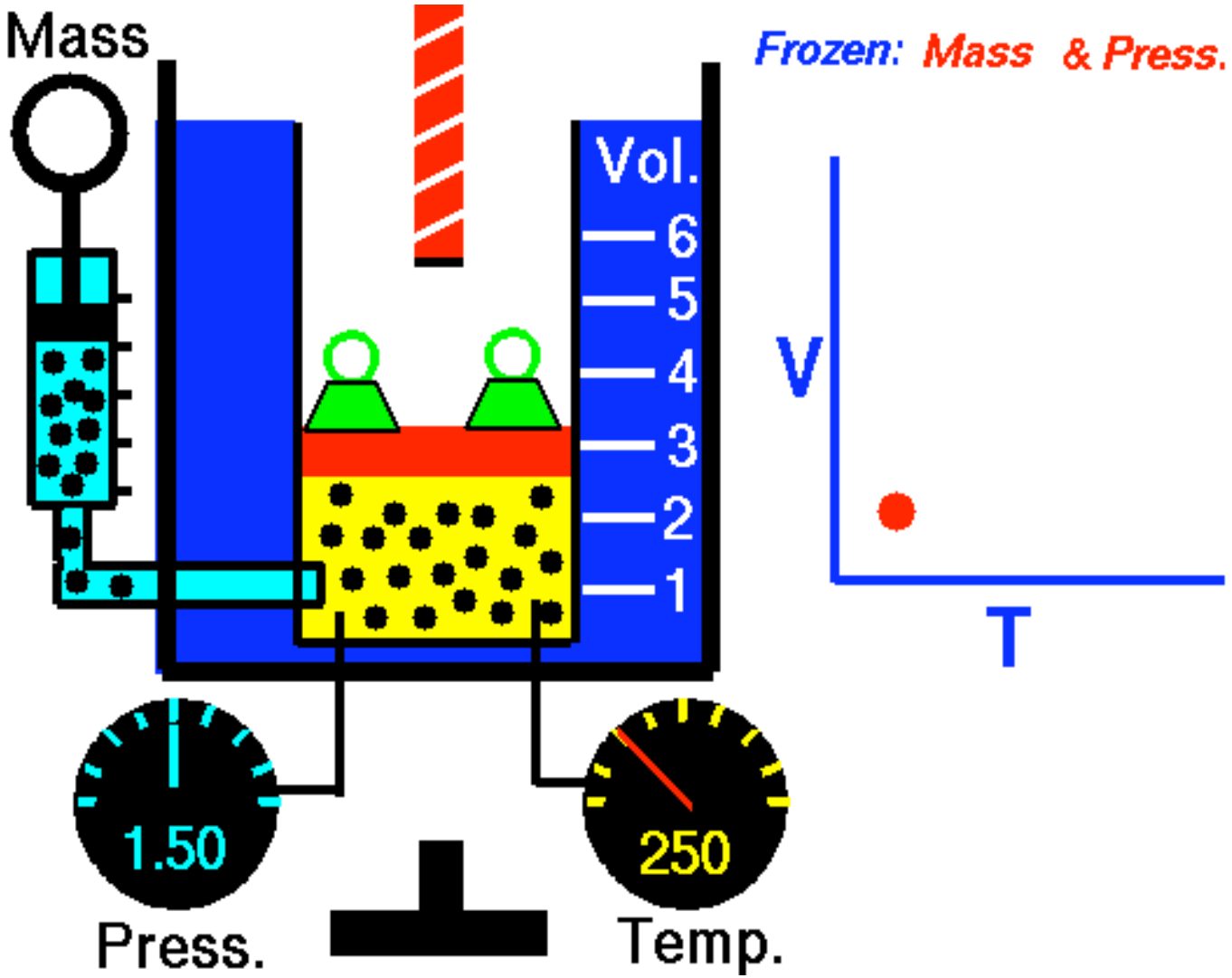

States of Matter
ADD HEAT


Solid
Liquid
Gas
Plasma

Charles' Law

- *When the temperature of a gas is increased, its volume increases. When the temperature of a gas is decreased, its volume decreases. Directly proportional= as the temp goes up, the volume goes up. As the temp goes down, the volume goes down.*
- *:Fast moving particles take up a lot of space.*
- *:Slow moving particles take up less space.*

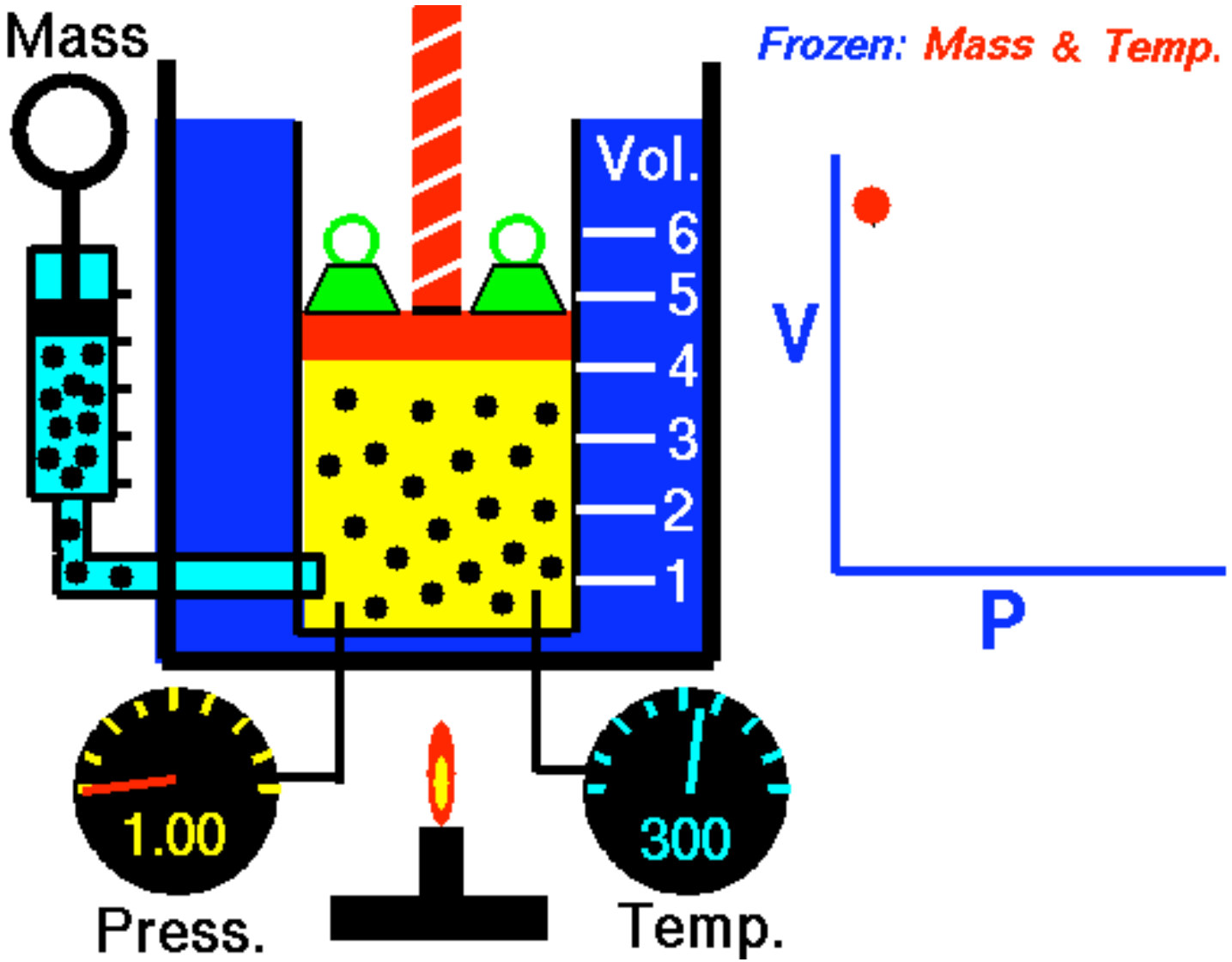
Charles' Law



Boyle's Law

- *When the pressure on a gas is increased, the volume of the gas decreases. When the pressure on a gas is decreased, the volume of the gas increases.*
- *Inversely proportional= pressure goes up, volume goes down.*

Boyle's Law

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