

Chemical and Physical Changes

Phases of Matter

Solid

- Definite volume
- Definite shape
- Atoms barely vibrating
- Atoms packed close

Gas

- **I**ndefinite volume
- **I**ndefinite shape
- Atoms vibrating a lot
- Atoms very far apart

Liquid

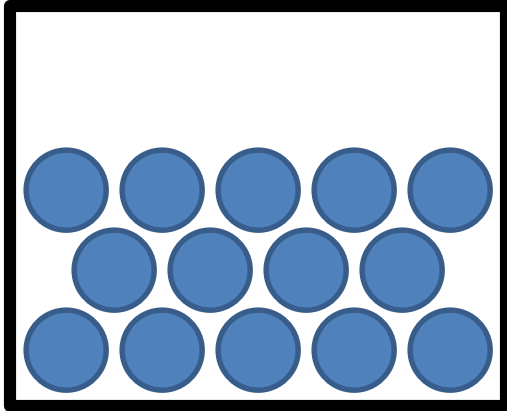
- Definite volume
- **I**ndefinite shape
- Atoms vibrating more than a solid
- Atoms close together, but can move past each other

Plasma

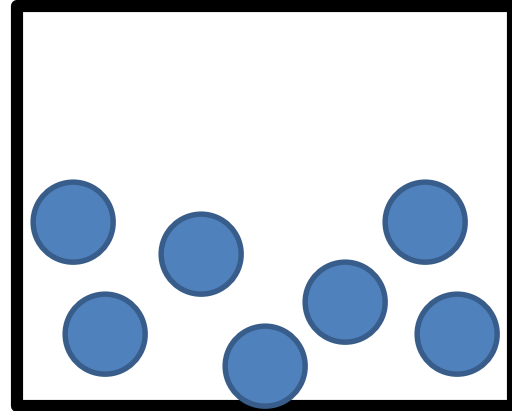
- High temperature state
- Atoms loose most of their electrons

Phases of Matter

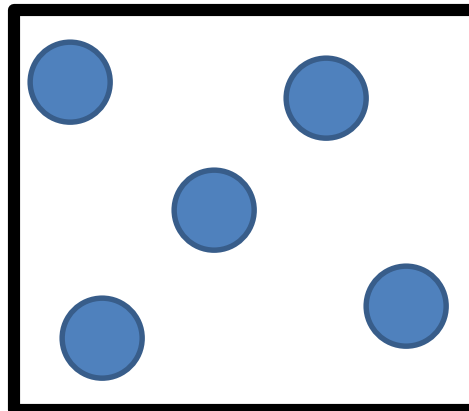
Solid



Liquid



Gas

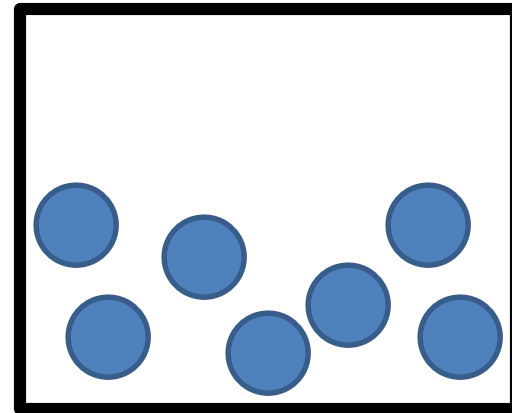
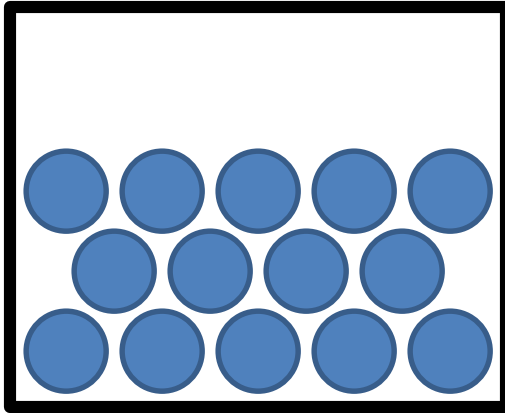


Phase Changes



Solid → Liquid

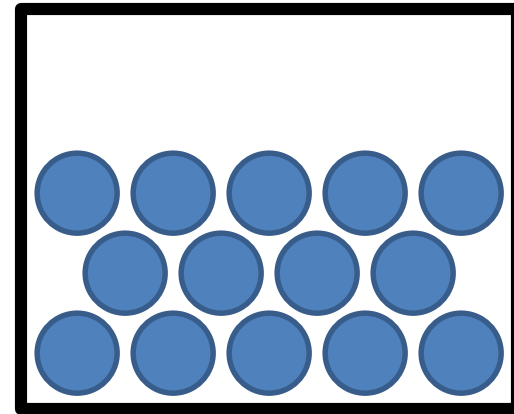
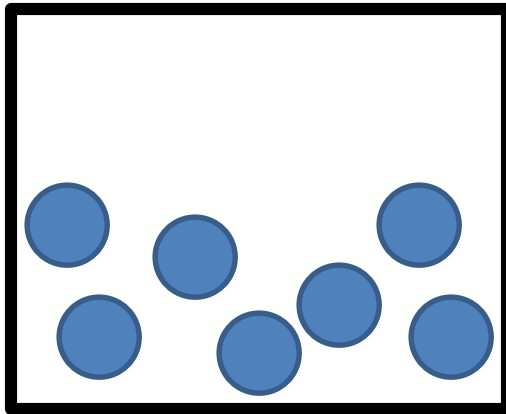
Melting



Phase Changes

Liquid \rightarrow Solid

Freezing

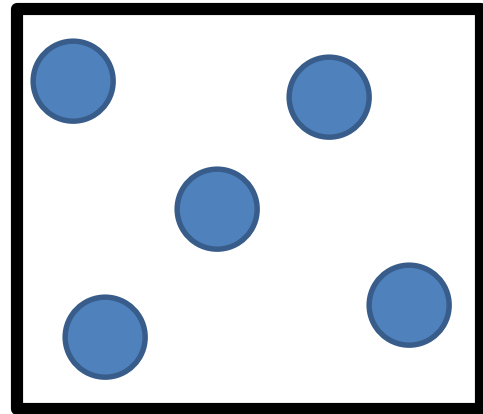
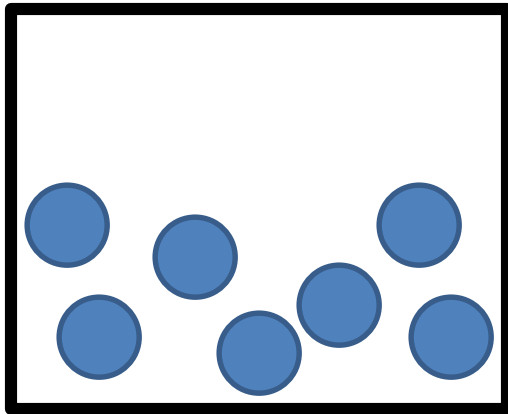


Phase Changes



Liquid → Gas

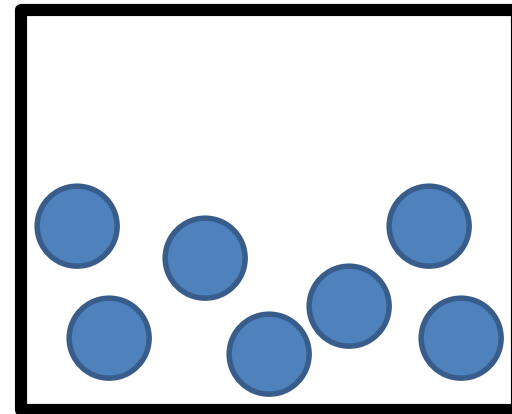
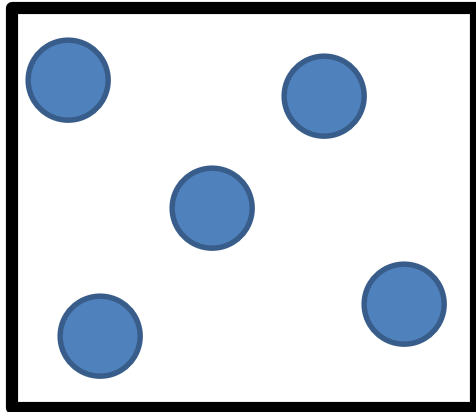
Vaporizing



Phase Changes

Gas → Liquid

Condensing

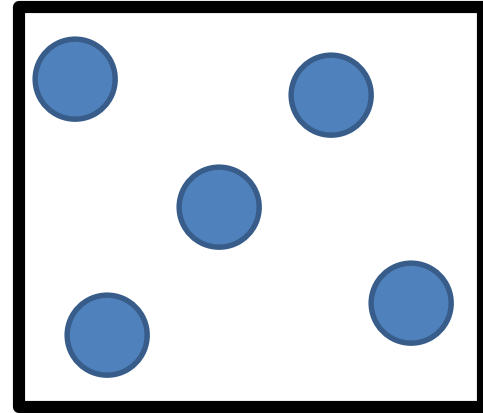
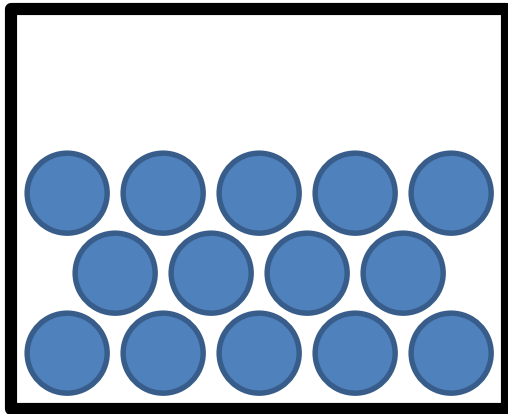


Phase Changes



Solid → Gas

Sublimation

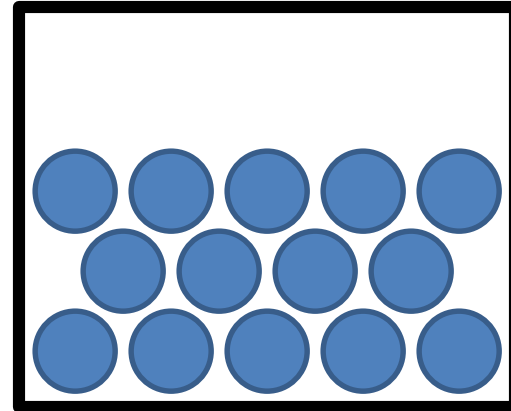
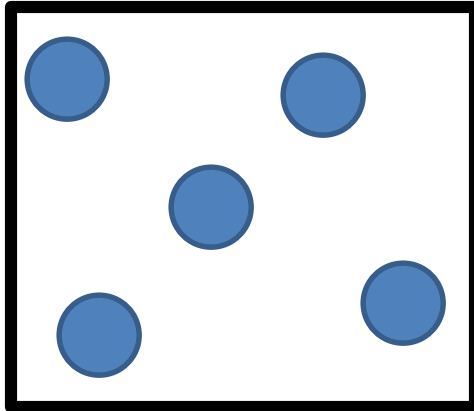


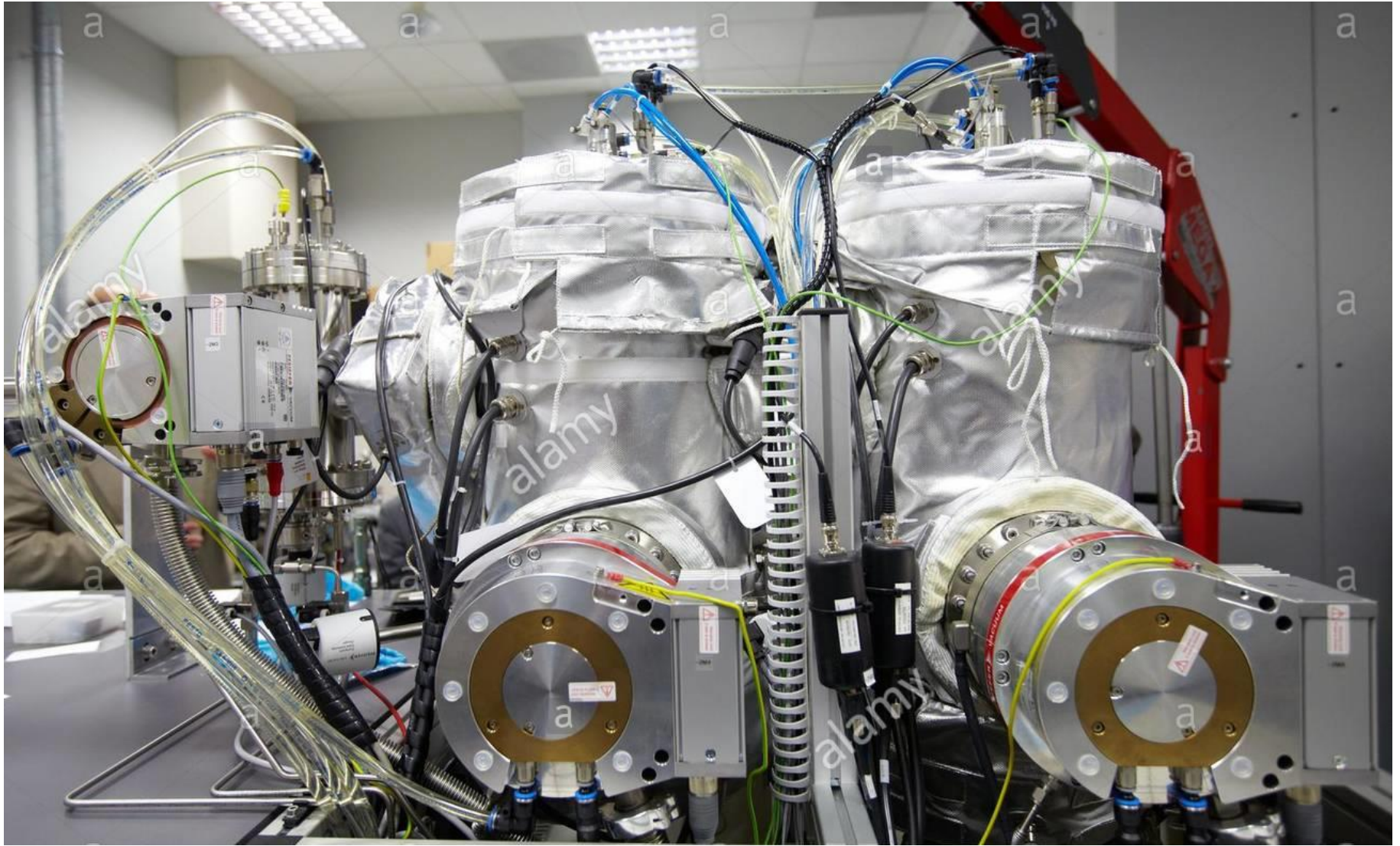
Phase Changes

Gas \rightarrow Solid



Deposition





Physical Changes

**IT IS STILL THE SAME
SUBSTANCE** after a
physical change.

Change in one or more
physical properties

NO change in the
components that make up
the substance.

Chemical Changes

**IT IS NOT THE SAME
SUBSTANCE** after a
chemical change.

Change in the
components that make up
the substance.

Physical Change

- Melting
- Freezing
- Vaporizing
- Condensing
- Deposition
- Sublimation

Phase Changes

- Tearing
- Grinding
- Cutting

Chemical Change

- Combustion (burning)
- Rusting
- Cooking

• Signs of chemical Rxns

- color change
- gas given off
- solid product formed
- Temp. change

Chemical change vs Chemical Property

Change = IS/DID happening

Property = CAN happen