

## States of Matter

There are three states of matter:  
(that we will be concerned with)

**SOLID**      **LIQUID**      **GAS**

## SOLIDS

- The least energetic state of matter
- Have a **definite** volume and a **definite** shape.
- Particles are tightly packed, vibrating about a fixed position.



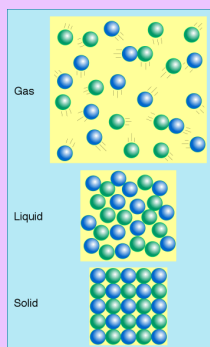
## LIQUIDS

- More energy than solids, less than gases
- Have a **definite** volume but **not a definite** shape.
- Take on the shape of the container
- Particles are tightly packed, but are far enough apart to slide over one another.



## GASES

- The most energetic state of matter  
Have **no definite** volume and **no definite** shape  
Also called *vapor*  
Are compressible  
Particles are very far apart and move freely

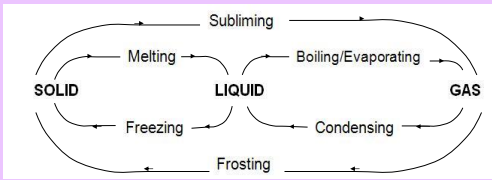


The state a material is in or  
the change in state that occurs to a material  
depends on:

- The **kinetic energy** (motion) of its particles
- The strength of the **interparticle attractions**

← attractive force between particles

## Changing States of Matter



\* Energy is required for any change left to right - Endothermic (interparticle forces must be overcome)

\*\* Energy is released for any change right to left - Exothermic (interparticle forces begin to take over)