



# States of Matter

## Chapter 3

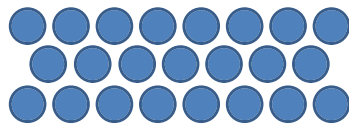


### The Three States (Phases) of Matter:

- Solid
- Liquid
- Gas

## SOLIDS (s):

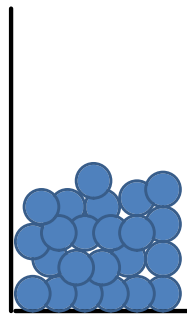
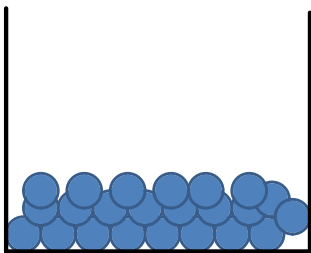
- Definite shape (same shape no matter where it is!)
- Definite volume (takes up the same amount of space no matter where it is!)



Particles are very orderly!

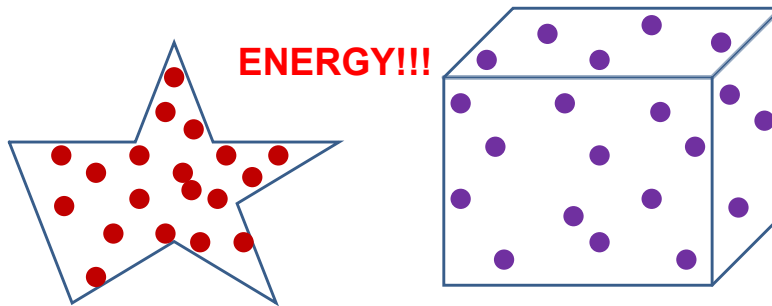
## LIQUIDS (l):

- No definite shape (takes the shape of the container it is in)
- Definite volume (takes up the same amount of space no matter where it is!)



## GASES (g):

- No definite shape (takes the shape of the container it is in)
- No definite volume (takes the volume of its container)



## Phase Changes!!!

The process by which a substance changes from one phase to another



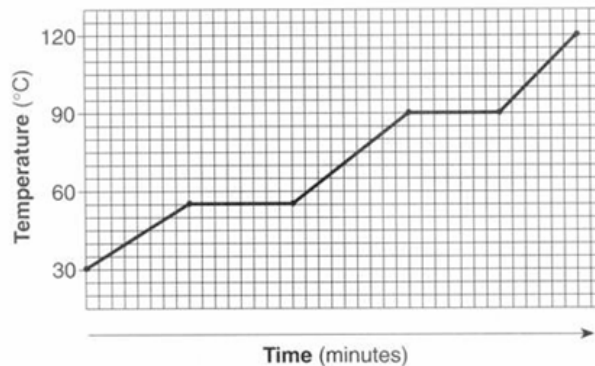
Either requires energy – endothermic

OR

Releases energy – exothermic

## Heating Curve

A graph that shows change in temperature as a substance goes from one phase to another.



You should be able to label the 3 phases, where each change occurs, and determine the melting/freezing and boiling/condensation points.

## Determining Phase from Temperature

**Melting and Boiling Points of Substances**

Name	Melting Point (°C)	Boiling Point (°C)
Chlorine	-101	-35
Nitrogen	-210	-196
Oxygen	-218	-183
Hydrogen	-259	-253

What substance is solid at -200 °C?

What state of matter is Oxygen at -100 °C?