

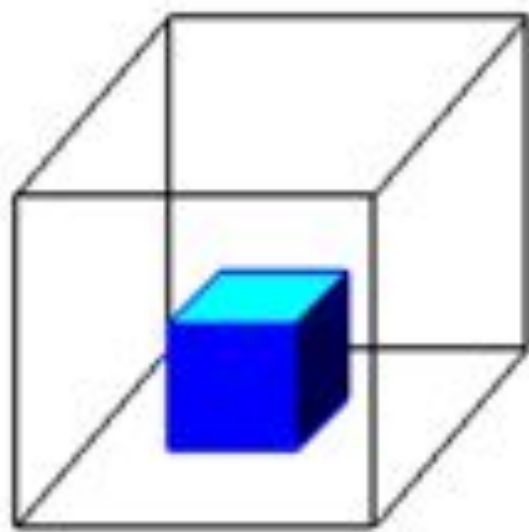


# Kinetic Molecular Theory

## Postulates of the Kinetic Molecular Theory of Gases

1. Gases consist of tiny particles (atoms or molecules)
2. These particles are so small, compared with the distances between them, that the volume (size) of the individual particles can be assumed to be negligible (zero).
3. The particles are in constant random motion, colliding with the walls of the container. These collisions with the walls cause the pressure exerted by the gas.
4. The particles are assumed not to attract or to repel each other.
5. The average kinetic energy of the gas particles is directly proportional to the Kelvin temperature of the gas

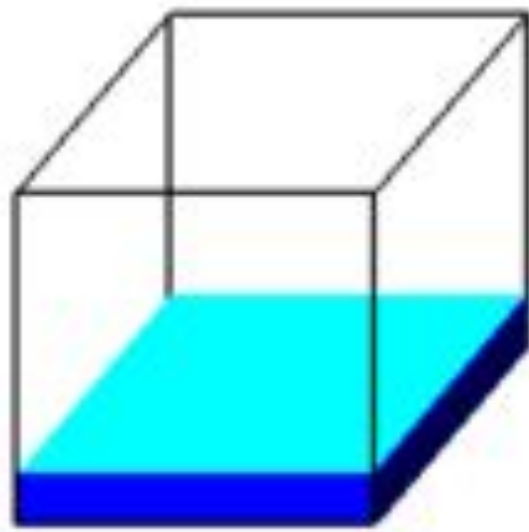




## Solid

Holds Shape

Fixed Volume

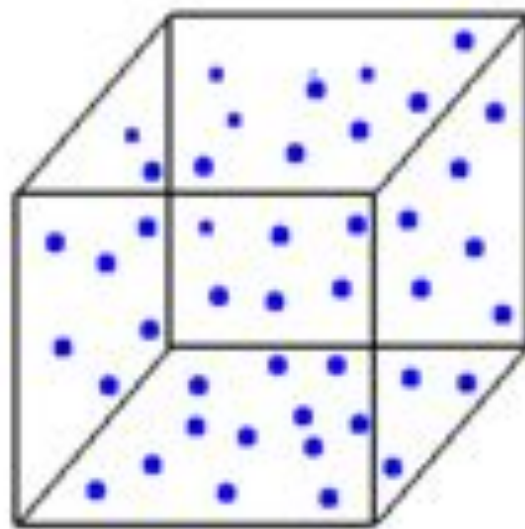


## Liquid

Shape of Container

Free Surface

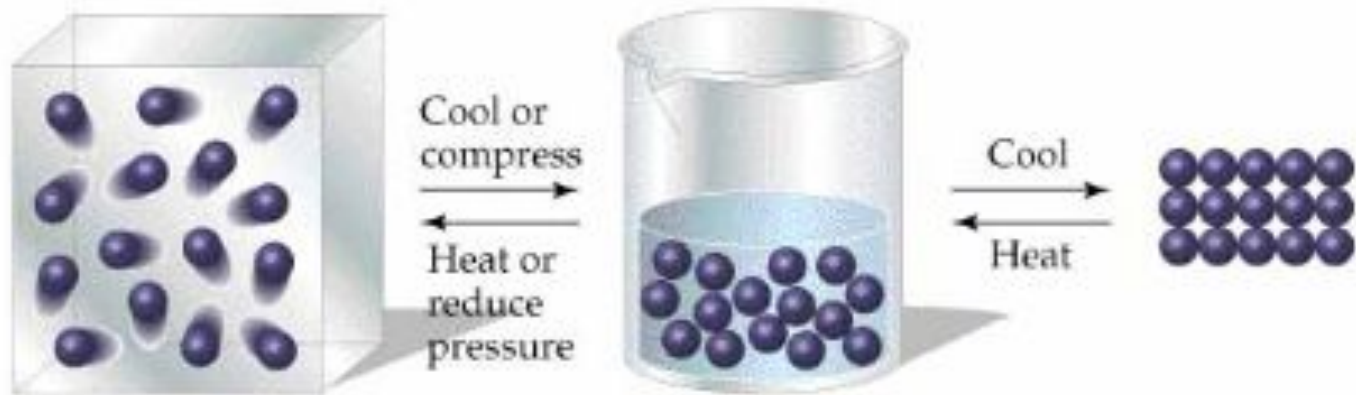
Fixed Volume



## Gas

Shape of Container

Volume of Container



Gas

Total disorder; much empty space; particles have complete freedom of motion; particles far apart

Liquid

Disorder; particles or clusters of particles are free to move relative to each other; particles close together

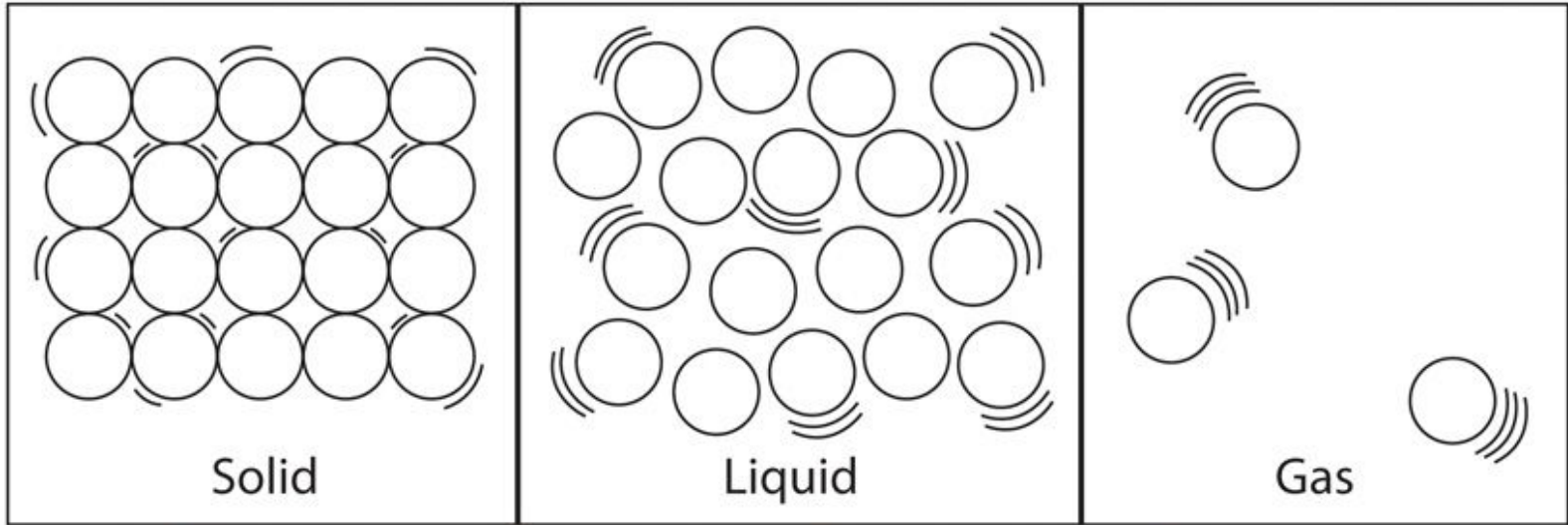
Crystalline solid

Ordered arrangement; particles are essentially in fixed positions; particles close together

ADD ENERGY



Endothermic



Solid

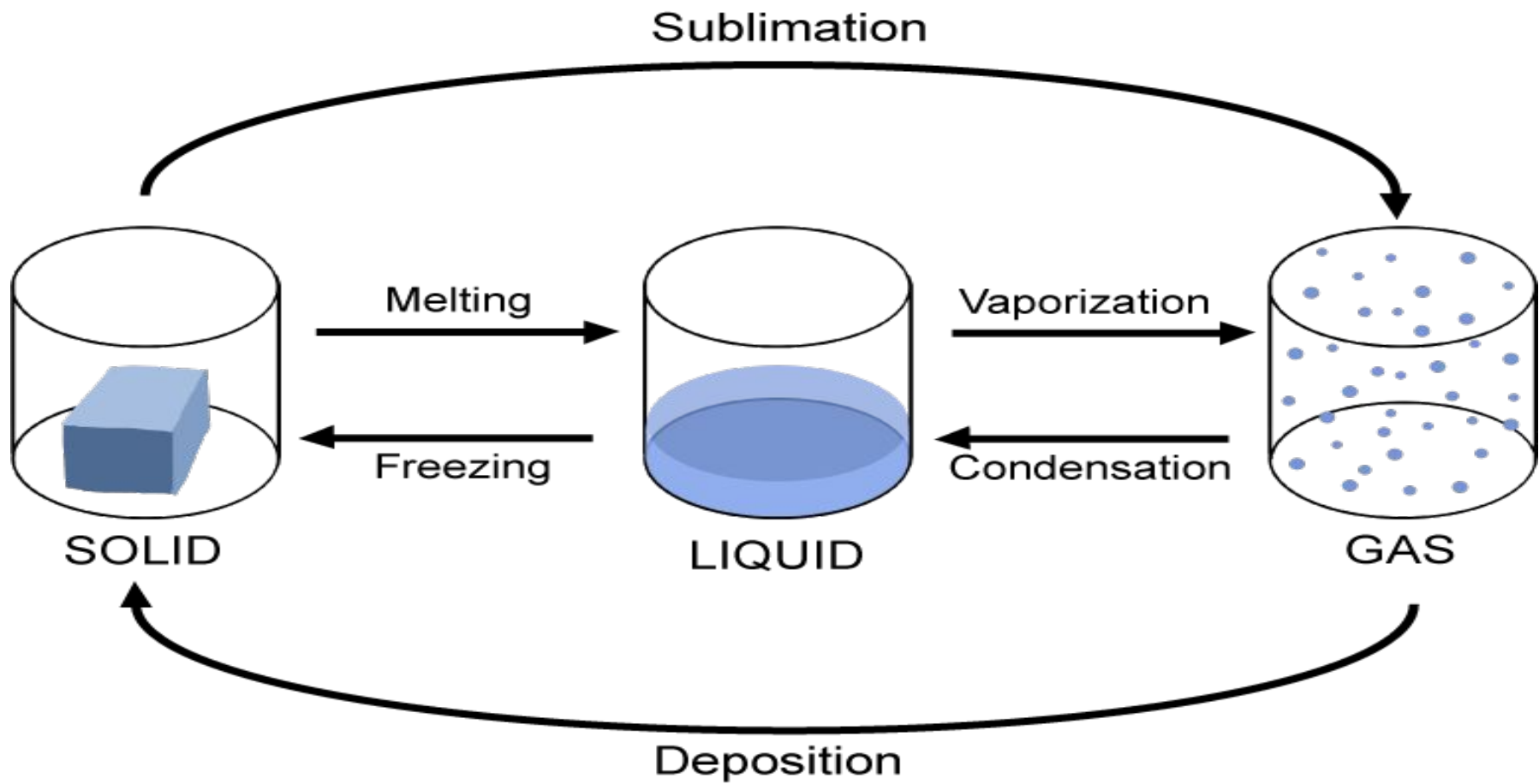
Liquid

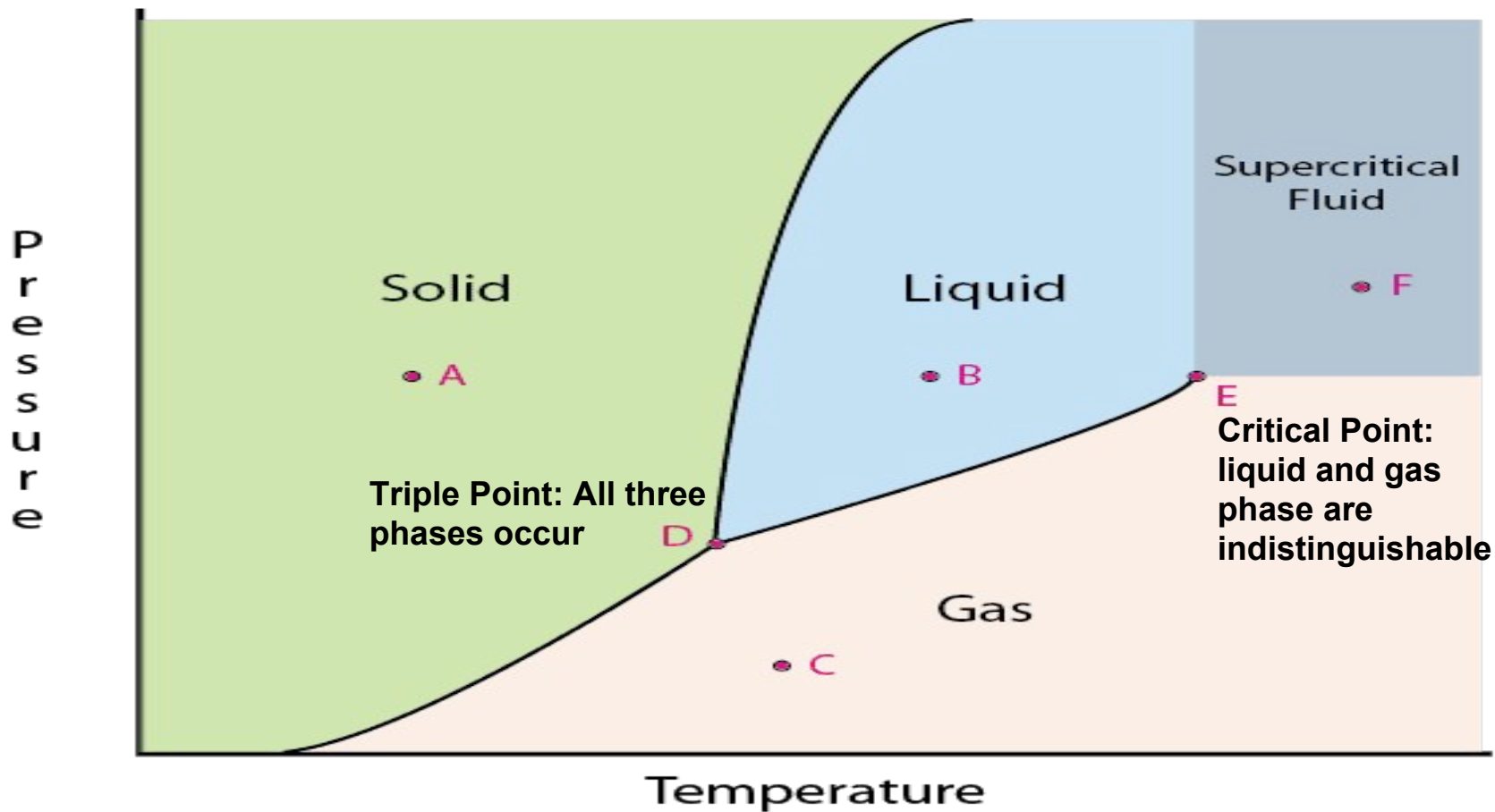
Gas

Exothermic

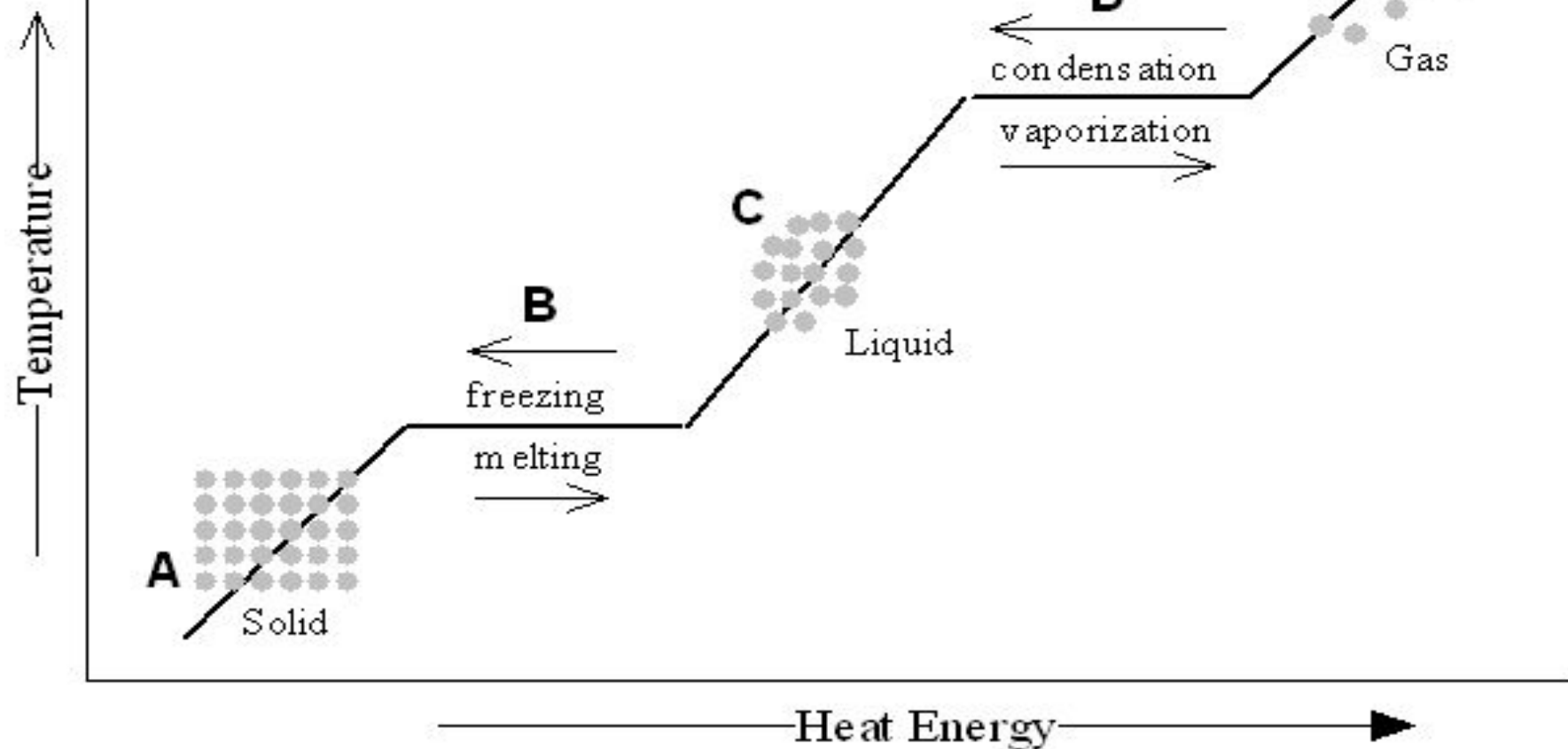
REMOVE ENERGY

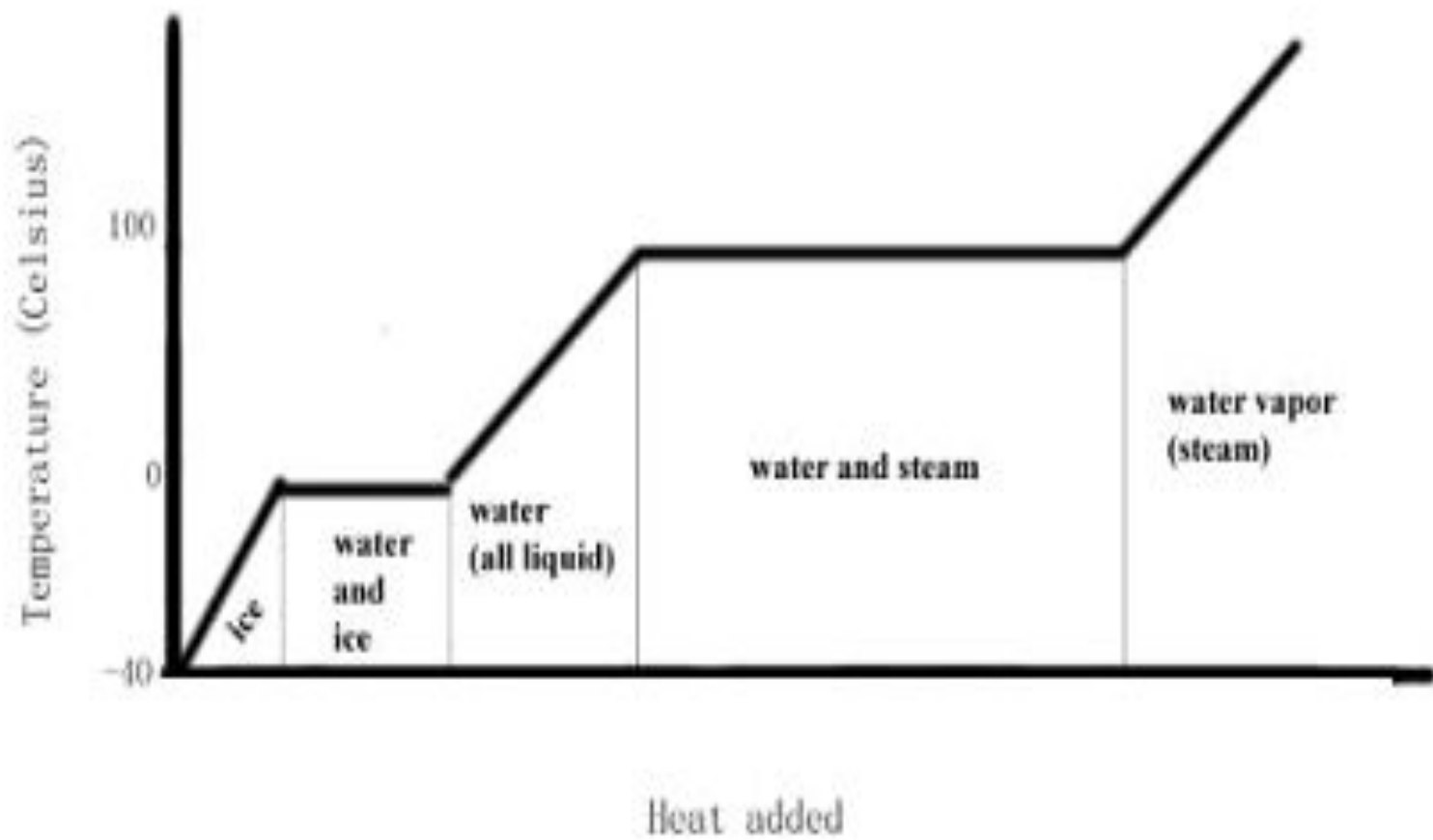




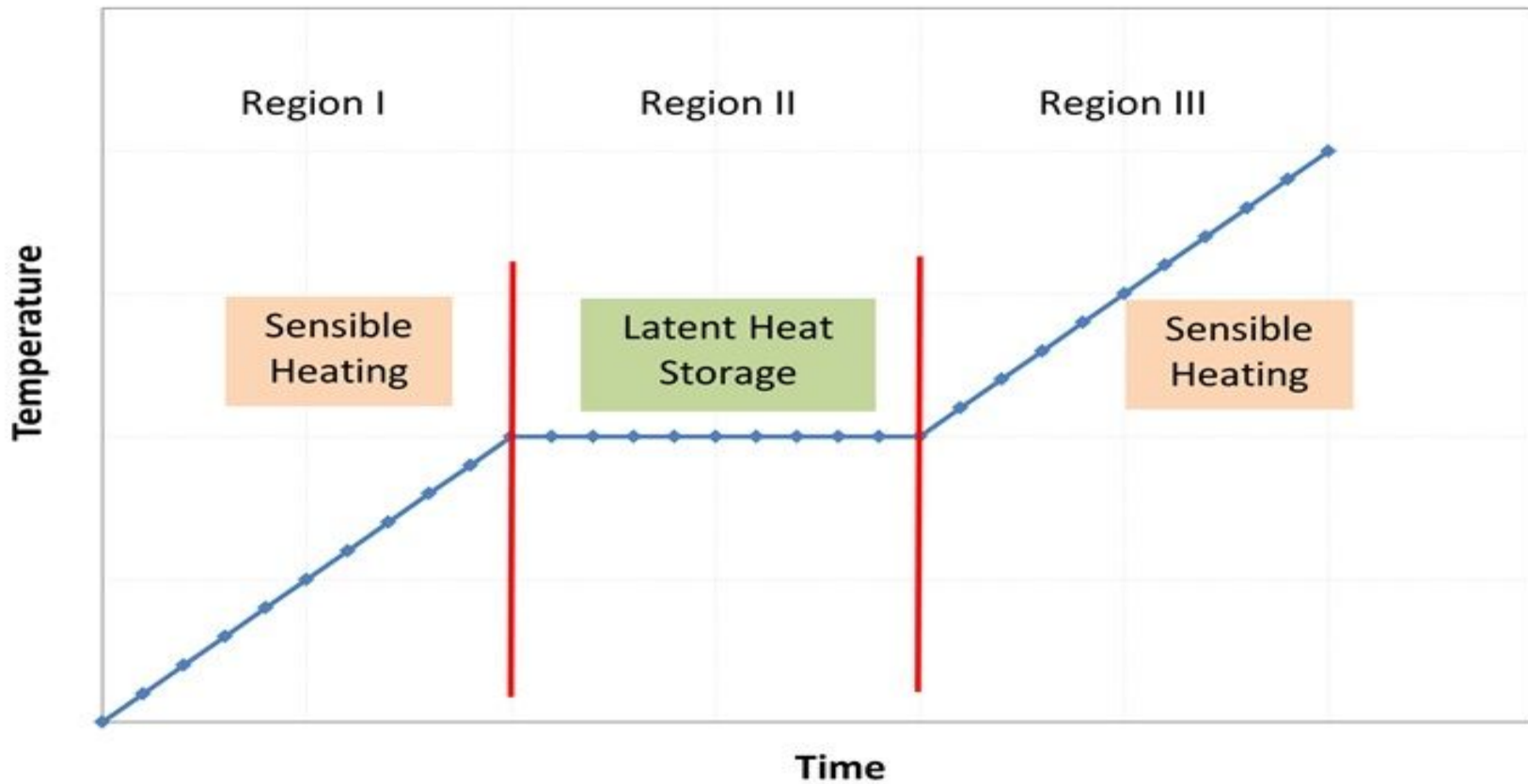


# Phase Change Diagram

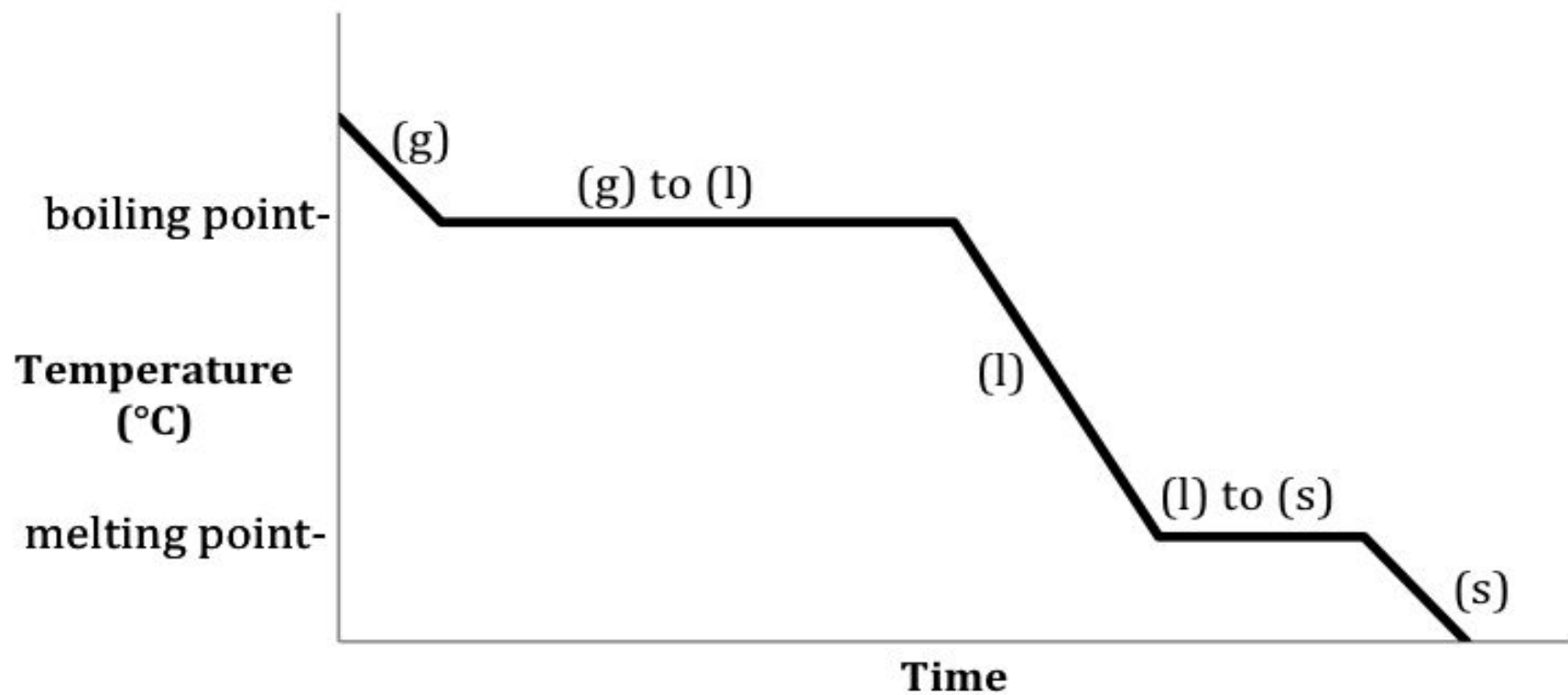








# Cooling Curve



Solubility curves show the dependence of solubility on temperature.

Each substance has its own unique solubility which can be displayed on a graph.

