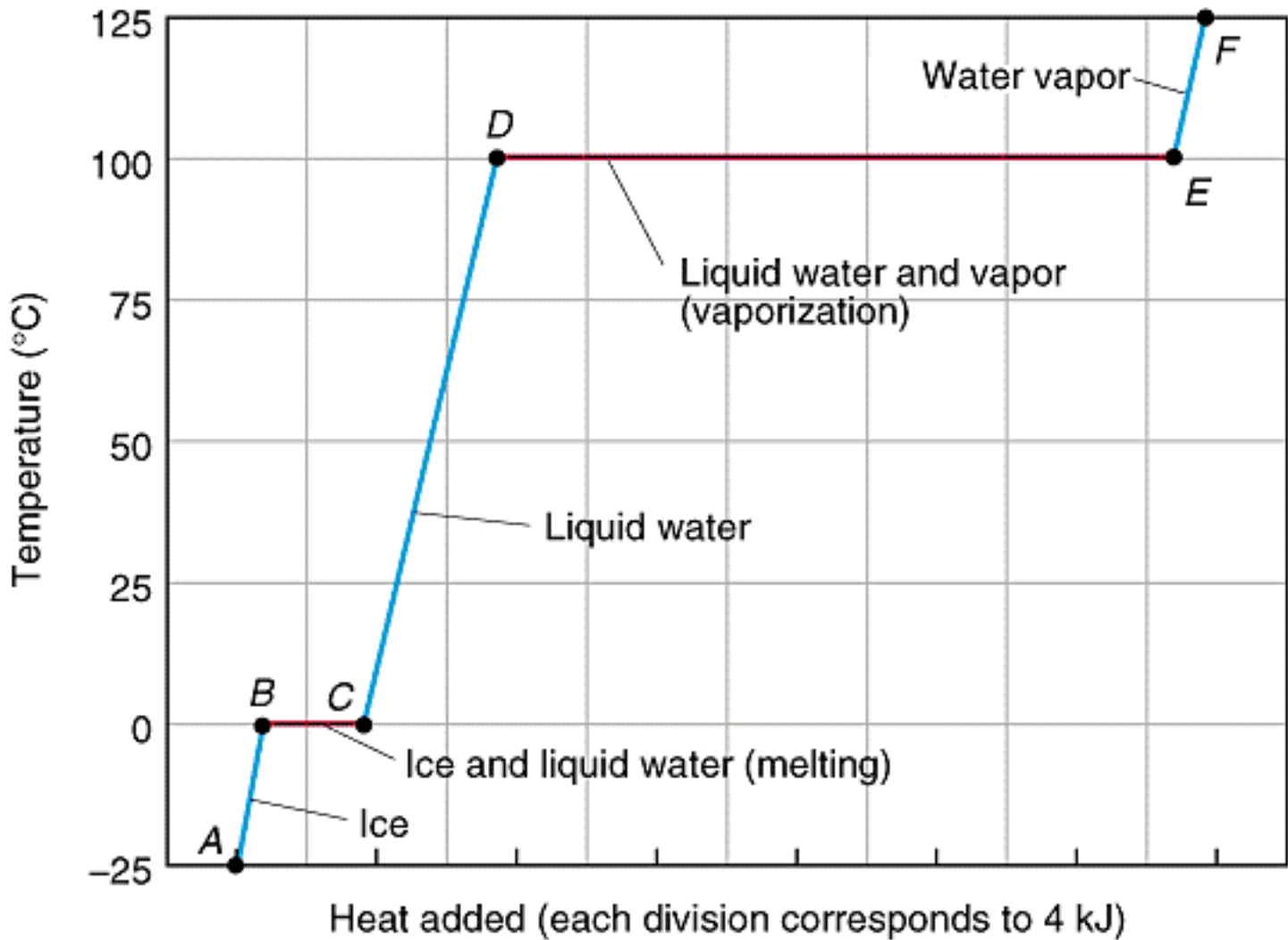
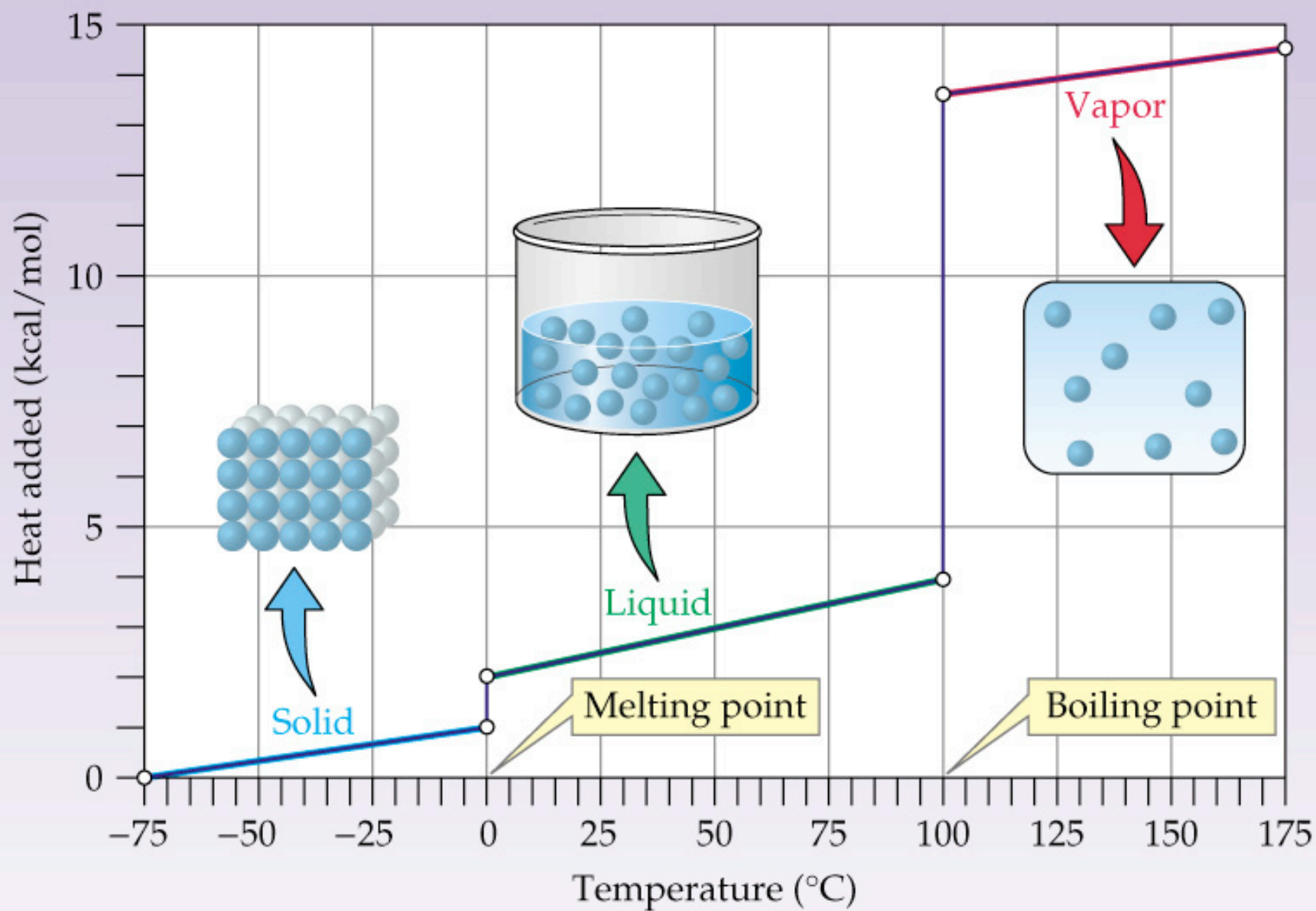


# Phase Changes

## Heating Curves





# Phase Changes

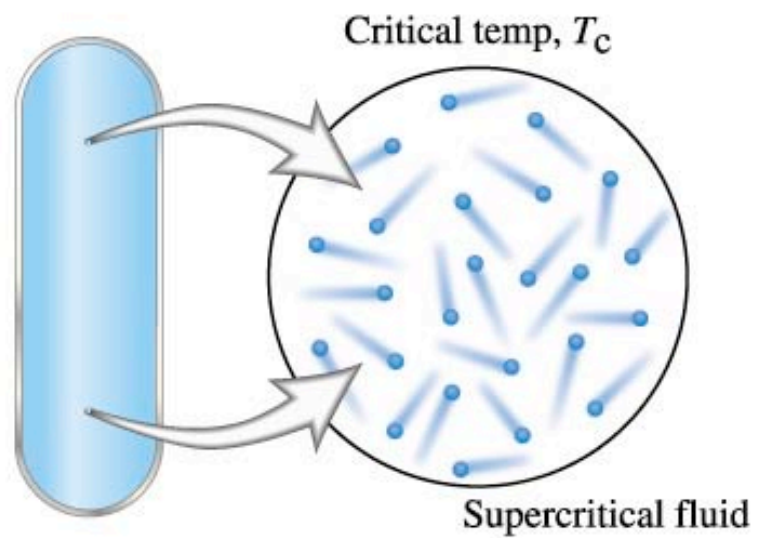
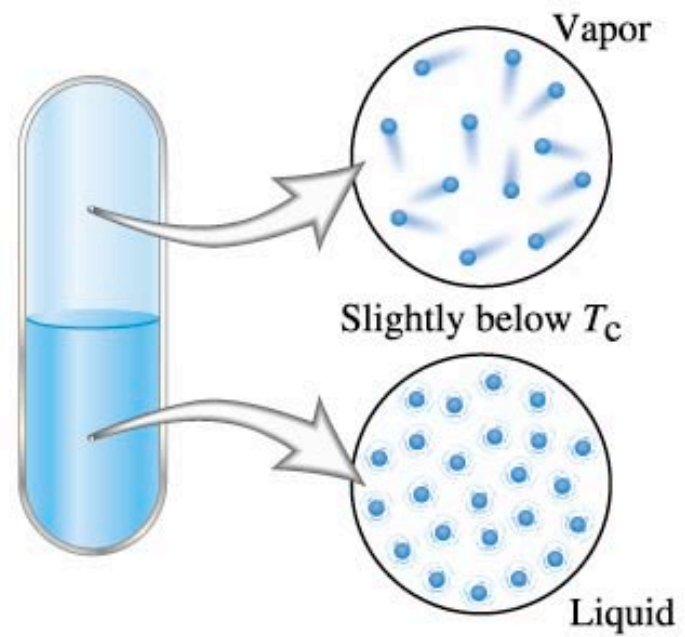
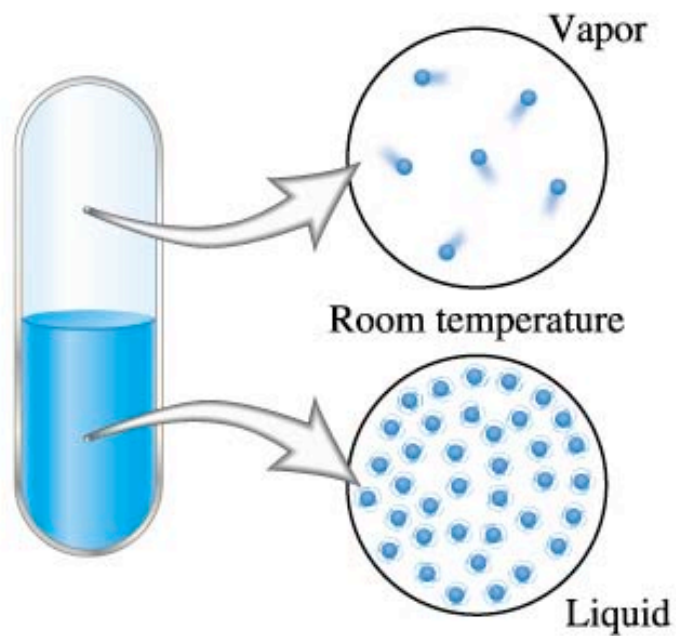
## Heating Curves

- Plot of temperature change versus heat added is a heating curve.
- During a phase change, adding heat causes no temperature change.
  - These points are used to calculate  $\Delta H_{\text{fus}}$  and  $\Delta H_{\text{vap}}$ .
- *Supercooling*: When a liquid is cooled below its melting point and it still remains a liquid.
- Achieved by keeping the temperature low and increasing kinetic energy to break intermolecular forces

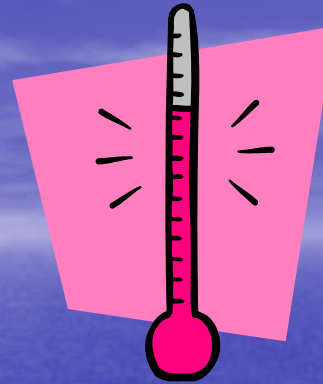
# *Phase Changes*

## **Critical Temperature and Pressure**

- Gases liquefied by increasing pressure at some temperature.
- *Critical temperature*: the minimum temperature for liquefaction of a gas using pressure.
- *Critical pressure*: pressure required for liquefaction.



# Ingredient 1

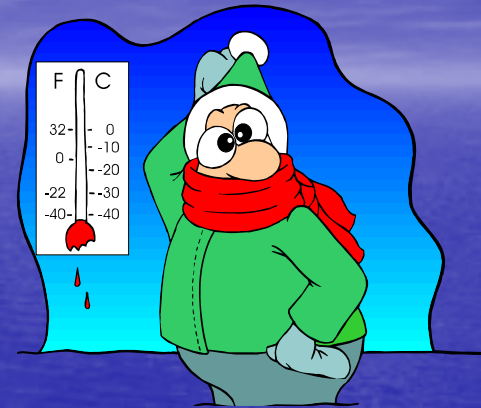


- WARM WATER

- Hurricanes like really warm ocean water, that is why you do not see hurricanes forming in colder climates.
- The colder climates usually make them die down.

# Ingredient 2

- COOLER AIR TEMPERATURE



- The atmosphere must be very cool the higher you go in the sky.
  - This means there is a dramatic change in temperature at higher altitudes.

# Ingredient 3



- it must be blowing in the same direction and the same speed from the ocean surface right up to 9,000 meters above sea level.

(The Green Lane™, Environment Canada's World Wide Web site)



# Ingredient 4

- LOCATION

- A hurricane should be at least 500 km from the equator in order to form
- This is because the hurricane needs the Coriolis Force to be able to spin like this picture

