Chapter 2

States of Matter

Which of these factors could affect the temperature at which water boils?

- A. the volume of water in the pot.
- B. the atmospheric pressure at which the water is heated.
- C. the amount of energy added to the water.
- D. the type of fuel used to heat the water.

Which of these factors could affect the temperature at which water boils?

- B. the atmospheric pressure at which the water is heated.

Which of the following occurs when a liquid becomes a gas?

- A. the particles give off energy
- B. the particles break away from one another
- C. the particles move closer together.
- D. The particles slow down.

Which of the following occurs when a liquid becomes a gas?

- B. the particles break away from one another

Boyle's law explains the relationship between volume and pressure for a fixed amount of …

- A. a solid
- B. a liquid
- C. a gas
- D. any type of matter

Boyle's law explains the relationship between volume and pressure for a fixed amount of …

- C. a gas

If you open a bottle of perfume, after a period of time, the people on the opposite side of the room will be able to smell it due to the process of…

- A. condensation
- B. evaporation
- C. sublimation
- D. vapor pressure

If you open a bottle of perfume, after a period of time, the people on the opposite side of the room will be able to smell it due to the process of…

- B. evaporation

The melting point is the same as its

- A. boiling point
- B. condensation point
- C. freezing point
- D. sublimation point

The melting point is the same as its

- C. freezing point

Which of the following statements is NOT true of all different types of matter?

- A. they are made up of atoms and molecules.
- B. the particles that make them up are always in motion.
- C. they are made up of extremely small particles.
- D. the particles that make them up move at the same speed.

Which of the following statements is NOT true of all different types of matter?

- D. the particles that make them up move at the same speed.

The reverse of condensation is…

- A. boiling
- B. evaporation
- C. freezing
- D. sublimation

The reverse of condensation is…

- B. evaporation

It can be determined by measuring the speed of molecules.

- A. volume
- B. pressure
- C. viscosity
- D. temperature

It can be determined by measuring the speed of molecules.

- D. temperature

Ice, water, and steam are all examples of …

- A. Solids
- B. Liquids
- C. Gases
- D. States of matter

Ice, water, and steam are all examples of …

- D. States of matter

It increases when the amount of force per unit are increases.

- A. pressure
- B. change of state
- C. surface tension
- D. viscosity

It increases when the amount of force per unit are increases.

- A. pressure

It may be either crystalline or amorphous.

- A. liquid
- B. solid
- C. surface tension
- D. temperature

It may be either crystalline or amorphous.

- B. solid

How do the particles of water that evaporate form an open container differ from the particles that remain?

- A. the evaporated particles only have more speed.
- B. the evaporated particles have greater order.
- C. the evaporated particles only have higher energy.
- D. the evaporated particles have more speed and higher energy.

How do the particles of water that evaporate form an open container differ from the particles that remain?

- D. the evaporated particles have more speed and higher energy.

According to Charles's Law,

- A. heating a balloon will cause it to expand.
- B. crushing a closed container of gas will increase the pressure.
- C. pumping more air into a basketball will increase the pressure.
- D. filling a balloon with helium will cause it to rise.

According to Charles's Law,

- A. heating a balloon will cause it to expand.

A graph that shows the change in temperature of a substance as it is heated will show

- A. a straight line as the substance melts.
- B. a straight line as the substance freezes.
- C. a rising line as the substance melts.
- D. a falling line as the substance melts.

A graph that shows the change in temperature of a substance as it is heated will show

- A. a straight line as the substance melts.

A drop of vinegar will flow and spread out but a drop of vegetable oil will form a bead. This is evidence that

- A. vegetable oil has a lower surface tension and lower viscosity than vinegar.
- B. vinegar has a lower surface tension and lower viscosity than vegetable oil.
- C. vegetable oil has a lower surface tension and higher viscosity than vinegar.
- D. vinegar has a lower surface tension and higher viscosity than vegetable oil.

A drop of vinegar will flow and spread out but a drop of vegetable oil will form a bead. This is evidence that

- B. vinegar has a lower surface tension and lower viscosity than vegetable oil.

In order for carbon dioxide gas to enter the air from dry ice, the dry ice must

- A. gain energy.
- B. boil
- C. increase in pressure.
- D. undergo an exothermic change.

In order for carbon dioxide gas to enter the air from dry ice, the dry ice must

- A. gain energy.

A liter of gasoline will boil at

- A. a higher temperature than a milliliter of gasoline.
- B. a lower temperature than a milliliter of gasoline.
- C. the same temperature as a milliliter of gasoline.
- D. the same temperature as a milliliter of water.

A liter of gasoline will boil at

- C. the same temperature as a milliliter of gasoline.

This happens when tomato soup boils.

- A. states of matter.
- B. change of state.
- C. temperature.
- D. liquid

This happens when tomato soup boils.

- B. change of state.

This is the state of matter in which atoms and molecules are close together but can slide past each other.

- A. liquid
- B. solid
- C. gas
- D. volume

This is the state of matter in which atoms and molecules are close together but can slide past each other.

- A. liquid

The property of liquids is affected by the strength of the attraction between the molecules.

- A. surface tension
- B. Viscosity
- C. pressure
- D. temperature

The property of liquids is affected by the strength of the attraction between the molecules.

- B. Viscosity

This can only be measured in three dimensions

- A. change of state
- B. gas
- C. pressure
- D. volume

This can only be measured in three dimensions

- D. volume

This force acts on the particles of milk at the surface of a glass of milk.

- A. surface tension
- B. viscosity
- C. temperature
- D. pressure

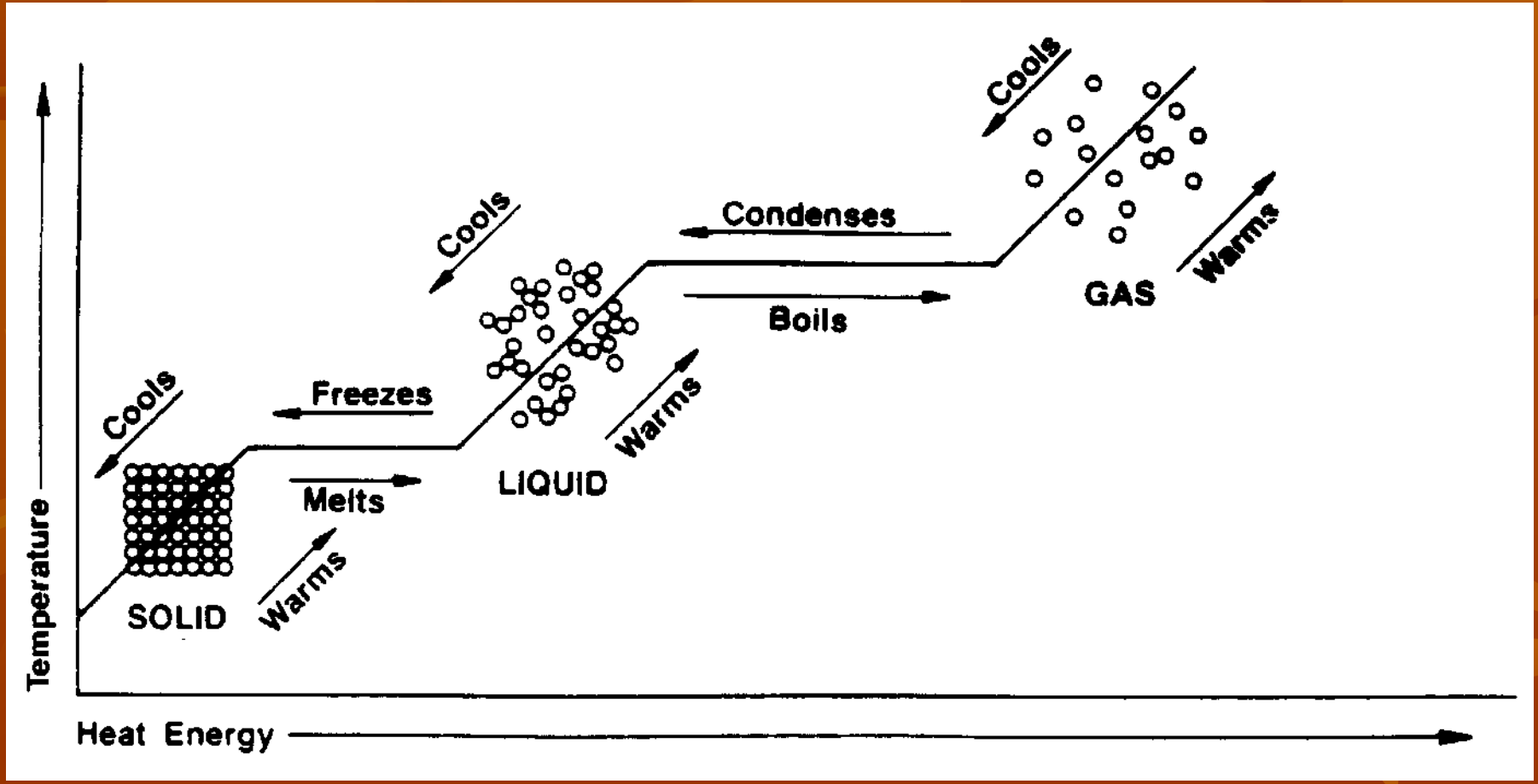
This force acts on the particles of milk at the surface of a glass of milk.

- A. surface tension

Gas Behavior Laws

If Snoopy is inflated the night before the parade, and then the temperature outside is not the same as the temperature was in the storage area, what could happen to the balloon? Think about Charles's Law for gases…

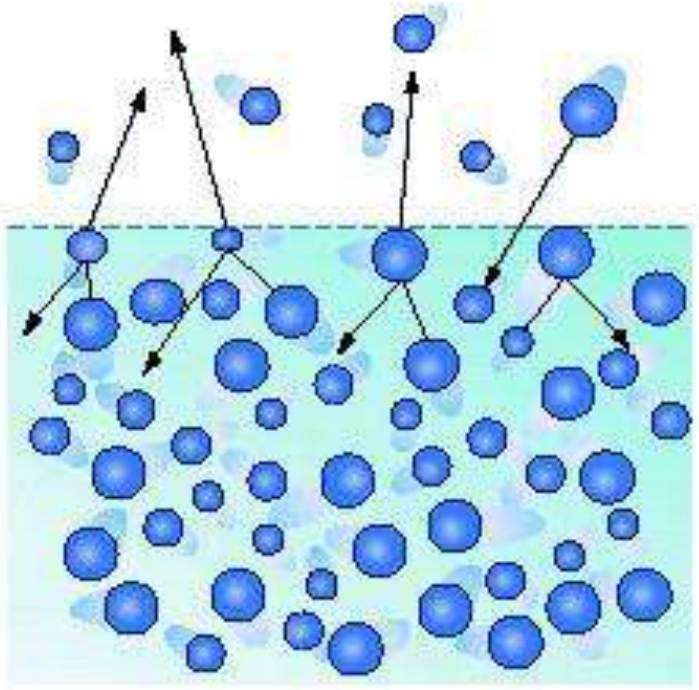
When the line is STRAIGHT, there's a change of STATE!



Surface tension – which has more? Vinegar or oil?

How does the viscosity of syrup compare to the viscosity of water?

Evaporation



During evaporation, the more energetic particles escape from the surface leaving the less energetic ones behind.

Why? How?