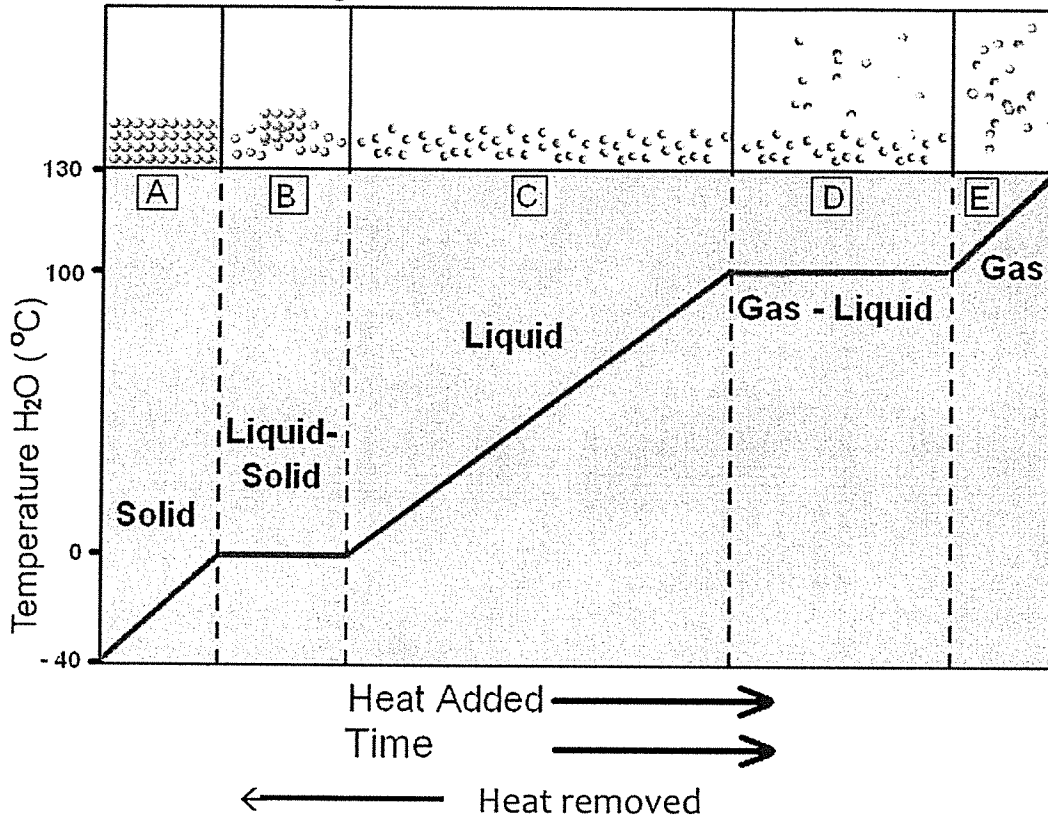


Q2 Below is a diagram showing a typical *heating/cooling curve* for water. It reveals a wealth of information about the structure and changes occurring in water as it is heated or cooled through all three phases of matter at different temperatures. At the top of the diagram are pictures representing the typical particle arrangement as substances change through their states.



2. Identify by letter (A-E) in which section the following are found:

- a. D Condensing (if cooling)    b. A Particles closest together
- c. D Evaporating    d. E Particle motion is least restricted
- e. B Heat of fusion    f. ACE Where energy change is kinetic
- g. D Heat of vaporization    h. A Where particles cannot move past each other
- i. E Most kinetic energy    j. BD Where kinetic energy is remaining relatively constant
- k. B Least potential energy    l. ACE Where a phase change is not occurring
- m. ACE Where heat transfer is making the particles move slower
- n. B Where heat is loosening the attractions or bonds between particles
- o. ACE Where particles are changing their speed
- p. A Where attractions or bonds between particles are the strongest
- q. A Where the state has a volume and a definite shape

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Assessment

Quiz

Section: Temperature

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- B 1. Temperature is a measure of the average \_\_\_\_\_ energy of an object's particles.
  - a. mechanical
  - b. kinetic
  - c. potential
  - d. light
- D 2. Which of the following is the name of a temperature scale?
  - a. Celsius
  - b. Fahrenheit
  - c. Kelvin
  - d. all of the above
- D 3. Convert 75°C to degrees Fahrenheit.
  - a. 74°F
  - b. 102°F
  - c. 150°F
  - d. 167°F
- C 4. The temperature at which all molecular motion stops is
  - a. 0°C.
  - b. 0°F.
  - c. All of the above
  - d. 958°C
- A 5. Convert 500°F to degrees Celsius.
  - a. 260°C
  - b. 268°C
  - c. 842°C
  - d. 958°C
- A 6. When one feels a warm oven, the sensation of warmth is the result of
  - a. energy transfer.
  - b. potential energy.
  - c. contraction of molecules.
  - d. molecular transfer.
- B 7. Convert 800 K to the Celsius scale.
  - a. 0°C
  - b. 27°C
  - c. 73°C
  - d. 579°C
- C 8. Convert 468 K to the equivalent Fahrenheit temperature.
  - a. 185°F
  - b. 237°F
  - c. 365°F
  - d. 731°F
- B 9. The energy transferred between objects with different temperatures is
  - a. absolute zero.
  - b. heat.
  - c. potential.
  - d. temperature.
- C 10. Which of the following temperatures is impossible to measure?
  - a. -85°F
  - b. -50°C
  - c. -20 K
  - d. 545°F

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Assessment

Chapter Test

TEST A

In the space provided, write the letter of the term or phrase that best completes each statement or best answers each question.

- A 1. What is 37.0 degrees Celsius on the Fahrenheit scale?
  - a. 98.6°F
  - b. 87.0°F
  - c. 92.0°F
  - d. 102.0°F
- A 2. As the kinetic energy of the molecules in a substance increases, the
  - a. temperature of the substance increases.
  - b. temperature of the substance decreases.
  - c. potential energy of the substance changes.
  - d. temperature remains the same.
- B 3. The transfer of energy as heat caused by the collision of molecules is called
  - a. convection.
  - b. conduction.
  - c. contact.
  - d. radiation.
- A 4. In an air conditioner, a substance that easily evaporates and condenses is used to transfer energy from a room to the air outside. When the substance evaporates,
  - a. it absorbs energy as heat from the surrounding air.
  - b. it transfers energy as heat to the surrounding air.
  - c. energy is transferred by conduction.
  - d. energy is transferred by convection.
- B 5. The temperature of a substance increases by 3 K when 1695 J is added to a 2 kg quantity of the substance. What is the specific heat of the substance?
  - a. 242 J/kg · K
  - b. 272 J/kg · K
  - c. 800 J/kg · K
  - d. 817 J/kg · K

SPECIFIC HEATS AT 25°C

Substance	c (J/kg · K)	Substance	c (J/kg · K)
Water (liquid)	4186	Copper	385
Steam	1870	Gold	129
Ammonia (gas)	2060	Iron	449
Ethanol (liquid)	2440	Mercury	140
Aluminum	887	Lead	128
Carbon (graphite)	709	Silver	234