

Name: _____

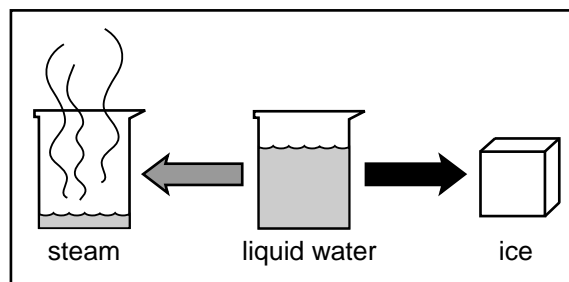
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- Which of the following is defined as a measure of the average kinetic energy of particles in a given sample of matter?
 - Velocity
 - Diffusion
 - Temperature
 - Partial pressure
- Energy release is to condensation as energy input is to —
 - deposition
 - sublimation
 - freezing
 - dispersion
- Which of the following is NOT a characteristic of liquids?
 - No significant attraction between particles
 - Less fluid than gases
 - More dense than gases
 - Exhibits viscosity
- Marta and her father often skip stones across a pond. What type of intermolecular force creates the surface tension that allows the stones to skip?
 - Metallic forces
 - Dipole–dipole forces
 - Dispersion forces
 - Hydrogen bonding
- For a substance to reach its boiling point, a substantial amount of energy must be added. The boiling point occurs when the —
 - temperature increases
 - vapor pressure equals atmospheric pressure
 - particle velocity equals the boiling point
 - vapor pressure reaches the critical point
- During evaporation, certain liquid molecules become vapor molecules because they have greater than average —
 - lattice energy
 - viscosity
 - kinetic energy
 - fluidity

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- 7 Ionic solids such as sodium chloride are easily shattered, but metallic solids such as copper can be easily bent and shaped. This difference occurs because —
- A ionic solids have low melting points
 - B atoms in metallic solids are not arranged in a regular pattern
 - C covalent bonding between sodium and chlorine keeps the solid rigid
 - D mobile electrons in the copper can shift without disrupting the solid
- 8 The process of hydrogen bonding involves hydrogen atoms bonding with —
- A either oxygen, carbon, or silicon
 - B either nitrogen, boron, or hydrogen
 - C either fluorine, oxygen, or nitrogen
 - D either fluorine, hydrogen, or sodium
- 9 Diffusion is the term used to describe the movement of one material through another. The diffusion of gases can be explained by —
- A relative molar masses
 - B differences in volume
 - C evaporation
 - D random motion

Use the diagram below to answer question 10.



- 10 The diagram shows how liquid water is transformed into a solid and a vapor. Which of these labels should be placed above each of the arrows in the diagram?
- F *Energy added* over the gray arrow; *energy released* over the black arrow
 - G *Particle velocity decreased* over the gray arrow; *particle velocity increased* over the black arrow
 - H *Energy released* over the gray arrow; *energy added* over the black arrow
 - J *Density decreased* over the gray arrow; *density increased* over the black arrow

