

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Rigid Structures Meets Wild Vibes: 9th Grade Matter Quiz

Perfect for a quick bell-ringer on molecular behavior and kinetic energy transitions from the kitchen to the cosmos.

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**1. A block of solid gold is moved from a small jewelry box to a large safe. Which statement best describes the gold's behavior?**

- A. It expands to fill the larger volume of the safe.
- B. It maintains its fixed shape and fixed volume.
- C. Its volume increases while its shape remains the same.
- D. It takes the shape of the safe but keeps its volume.

**2. When you smell fresh cinnamon rolls across the house, the scent particles are behaving as a \_\_\_\_\_, spreading out to fill the entire space.**

- A. Solid
- B. Liquid
- C. Gas
- D. Crystal

**3. In a liquid state, such as molten lava, the particles have enough energy to slide past one another while still remaining in contact.**

- A. True
- B. False

**4. On a very cold morning, you notice 'frost' patterns on a car windshield that formed directly from water vapor in the air. This process is called:**

- A. Sublimation
- B. Condensation
- C. Evaporation
- D. Deposition

**5. The phase change where a solid like mothballs or solid air freshener turns directly into a gas is known as \_\_\_\_\_.**

- A. Sublimation
- B. Vaporization
- C. Melting
- D. Freezing

**6. Increasing the temperature of a substance generally decreases the kinetic energy of its particles.**

- A. True
- B. False

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**7. Which of the following describes the behavior of particles in a sample of nitrogen gas inside a sealed canister?**

- A. They vibrate in a fixed position.
- B. They are highly organized and neatly stacked.
- C. They move rapidly and randomly in all directions.
- D. They are locked together by gravity.

**8. If you pour 50mL of olive oil from a tall thin graduated cylinder into a wide flat bowl, the \_\_\_\_\_ of the oil remains at 50mL.**

- A. Shape
- B. Weight
- C. Volume
- D. Density

**9. Condensation is a cooling process where a gas loses energy and turns into a liquid.**

- A. True
- B. False

**10. Which substance is an example of an 'amorphous' solid, meaning its particles are NOT arranged in a repeating geometric pattern?**

- A. Table Salt (NaCl)
- B. Glass
- C. Quartz
- D. Snowflakes