

Name: _____ Date: _____

Answer Key: The Floor is Lava: Kindergarten States of Matter Challenge

Molecular movement, shape-shifting properties, and phase transitions. Young scientists design materials to solve cooling and heating puzzles.

1. If you want to build a bridge for a toy car that doesn't sag or spill, you must use a _____ because its tiny parts are packed tight and stay in one shape.

Answer: B) Solid

Solids keep their shape because their particles are tightly packed, making them the best choice for building structures like bridges.

2. If you pour orange juice from a round bottle into a square box, it will change its shape to look like the box.

Answer: A) True

Liquids are shapeshifters; they take the shape of whatever container you put them in while keeping the same amount of space.

3. You are a scientist mixing 'invisible air' for a balloon. Which of these acts like a gas by zooming around to fill up every corner of the balloon?

Answer: C) The air you breathe

Gas particles move quickly and spread out in all directions to fill up any container, like a balloon or a room.

4. Imagine you have a magic popsicle. If you leave it in the hot sun, what happens to the tiny parts (particles) inside it?

Answer: B) They start dancing and sliding past each other

Adding heat energy makes particles move faster, turning a solid (frozen popsicle) into a liquid (melted juice).

5. When steam from a hot cocoa touches a cold window and turns back into watery drops, the gas is _____ into a liquid.

Answer: C) Condensing

Condensation happens when a gas cools down and its particles slow down enough to become a liquid again.

Name: _____ Date: _____

6. A rock can be a liquid if you just put it in a small enough cup.

Answer: B) False

A rock is a solid. No matter what container you put it in, it keeps its own shape unless you change it into something else using extreme heat.

7. Which 'State of Matter' is like a group of kids sitting in their chairs during circle time without moving around?

Answer: C) Solid

In a solid, the particles stay in fixed positions and only vibrate slightly, similar to students sitting in assigned seats.

8. If you take energy (heat) AWAY from a bowl of liquid water by putting it in a freezer, the water will _____ and become a solid.

Answer: B) Freeze

Freezing is the process of removing heat to change a liquid into a solid, locking the particles into a rigid structure.

9. You see a 'mist' rising off a lake in the morning. This is an example of molecules moving from the water into the air as a:

Answer: B) Gas

Water vapor in the air is a gas. When liquid water evaporates, it becomes an invisible gas that we sometimes see as mist when it cools.

10. Gases are the only state of matter that will spread out to fill up a whole giant gym if you let them out of a jar.

Answer: A) True

Gases do not have a fixed volume; they will expand and move until they fill whatever space they are in.