

Name: _____ Date: _____

Answer Key: A Picnic on Jupiter: The States of Matter Challenge for Kinder Chemists

Imagine sorting your lunch as it floats through space while deciding if a juice box can survive a frozen moon or a hot sun.

1. Imagine you have a magic lunchbox that shrinks everything. If you put a hard apple inside, what happens to its shape?

Answer: A) It stays the same shape because it is a solid.

Solids like apples have a fixed shape and don't change just because they are moved to a different container.

2. A balloon is full of _____ because it spreads out to fill the whole space inside.

Answer: C) Invisible gas

Gas is the only state of matter that expands to fill the entire shape of its container, like air in a balloon.

3. True or False: If you pour orange juice from a tall bottle into a wide bowl, the juice changes its shape.

Answer: A) True

Liquids are flowy and take the shape of whatever container they are in.

4. You leave a chocolate bar in a hot car and it turns into a gooey mess. What happened to the state of matter?

Answer: B) It changed from a solid to a liquid.

When solids like chocolate get hot, they melt and behave like a liquid.

5. When you see steam rising from a bowl of hot soup, the liquid water is turning into _____.

Answer: C) A gas

Steam is water in its gas form, which happens when liquid water gets very hot.

6. True or False: If you put a toy car in a round bowl, the toy car will change its shape to be round.

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Answer: B) False

A toy car is a solid. Solids do not change their shape to fit their containers.

7. Which of these would be the HARDEST to keep in a box without a lid?

Answer: C) A cloud of invisible gas

Gases float and spread out in every direction, so they would fly out of a box without a lid.

8. If you put water in a very cold freezer, it becomes _____.

Answer: B) A hard solid

When liquid water loses enough heat, it freezes into ice, which is a solid.

9. True or False: Bubbles in a soda are tiny pockets of gas hiding inside a liquid.

Answer: A) True

Soda contains carbon dioxide gas, which forms the round bubbles we see.

10. Why does rain fall as drops instead of staying in the sky like a cloud?

Answer: A) The gas turned back into liquid water.

When water vapor in the air cools down, it changes from a gas back into liquid rain droplets.