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States of matter for Grade 4

Practice worksheet - Science · Grade 4

Name: _____ Date: _____

Show your working. Answers and explanations follow on a separate page.

Try each task before opening its answer. Give an example or reason, not only a label.

Write an answer and your reason before opening the explanation. Check the reasoning as well as the final answer.

1. What two properties distinguish the usual school descriptions of solids, liquids and gases?

2. The same water is poured without spilling into a wider bowl. What happens to its volume?

3. Why can invisible air still count as matter?

4. Why is a pile of sand not automatically a liquid?

5. Ice becomes liquid water. Name the change.

6. Liquid water becomes ice. Name the change.

7. Water vapour becomes droplets on a cool surface. Name the change.

8. Must a puddle boil before it can dry?

9. Are particles in a solid completely still?

10. Is the white cloud above hot water pure invisible water vapour?

11. Name two conditions besides surface area that affect drying.

12. A sponge can be squeezed. Does that prove it is a liquid?

13. Write an observation about drops outside a cold bottle without explaining their source.

14. Write a sentence using both the starting and final states for evaporation.

Answers and explanations

Answer key - Science · Grade 4

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1. Shape and volume.

Describe each property separately instead of using only whether something flows.

2. It stays the same during the transfer.

The shape and height change, not the quantity of water.

3. It has mass and occupies space.

Visibility is not part of the definition.

4. Each grain is a solid.

The grains move past one another as a collection.

5. Melting.

The starting state is solid and the final state is liquid.

6. Freezing.

The change is from liquid to solid.

7. Condensation.

Gas becomes liquid.

8. No.

Evaporation can occur at temperatures below boiling.

9. No.

They move about relatively fixed positions in the simple model.

10. No. The visible cloud contains tiny liquid droplets.

Water vapour itself is invisible; everyday use of steam can obscure this distinction.

11. For example, temperature and air movement.

Humidity also matters; hold relevant conditions similar in a comparison.

12. No.

Its solid framework can deform and contains spaces.

13. Drops appeared on the outside surface.

That states what was observed, separately from the condensation explanation.

14. Liquid water changes into water vapour, a gas.

Naming both states makes the explanation precise.