



BUILDING BLOCKS OF PHYSICAL SCIENCE

Matter and How It Changes

What is matter made of? How does it change between different states? Follow cartoon character "Matter" as he transforms into a blacksmith, a snowflake, and even a dragon, to find out!

What did you learn?

QUESTIONS

- Which is a state of matter?
 - Solid
 - Liquid
 - Gas
 - All of the above
- The state of matter depends on its what?
 - Temperature
 - Mass
 - Height
 - Magnetism
- Which is an example of a change in matter?
 - Steam from a radiator
 - Smoke from a chimney
 - Baked bread
 - All of the above
- Heating substances to super-hot temperatures can change them into a what?
 - Condensation
 - Plasma
 - Suspension
 - Microbes
- Can you explain how clouds form?
- Can you describe how to tell when something is changing chemically?

TRUE OR FALSE?

- | | |
|---|--|
| _____ 1. Matter is made of tiny particles called <i>atoms</i> . | _____ 4. Mixtures can be made of a combination of solids, liquids, or gases. |
| _____ 2. The molecules in a liquid vibrate in place. | _____ 5. A microbe is a liquid that can behave like a gas. |
| _____ 3. When matter experiences a physical change, it might look different, but its properties are the same. | _____ 6. Nitrogen is the only element that never turns into a solid. |

ANSWERS

- 1. d. All of the above.** According to page 8, we know that, "There are three basic states of matter: solids, liquids, and gases." So, the correct answer is D.
- 2. a. Temperature.** According to page 11, we know that, "The state of all matter depends on its temperature." So, the correct answer is A.
- 3. d. All of the above.** According to pages 27 and 27, we know that, "Can you think about where you have seen matter change in your day-to-day life? How about steam coming from radiators ... Or even smoke from a chimney? Or what about food? Have you ever seen someone bake bread? What happens when you put the dough in the oven?" So, the correct answer is D.
- 4. b. Plasma.** According to page 29, we know that, "Heating substances to super-hot temperatures can change them into an unusual state of matter called plasma." So, the correct answer is B.
- 5.** According to page 14, we know that, "As the sun heats a body of water, the liquid water changes into water vapor. As water vapor rises into the sky, it begins to cool down. As it cools, the water vapor molecules slow down and pack together into tiny droplets of liquid water. These tiny droplets make clouds."
- 6.** According to page 23, we know that, "One way is to check for signs of light or heat. If something is on fire, it is changing chemically. Another way to tell if something is changing chemically is if it changes color."

TRUE OR FALSE? ANSWERS

- 1. True.** According to page 6, we know that, "If you look inside, you'll see that I am made of tiny particles called atoms." So, the correct answer is True.
- 2. False.** According to page 8, we know that, "The molecules in a SOLID vibrate." So, the correct answer is False.
- 3. True.** According to page 16, we know that, "A change of a state is an example of a physical change. The matter may look different, but its properties are still the same." So, the correct answer is True.
- 4. True.** According to page 18, we know that, "Mixtures can be made of a combination of solids, liquids, or gases." So, the correct answer is True.
- 5. False.** According to page 28, we know that, "A superfluid is a liquid that can behave like a gas." So, the correct answer is False.
- 6. False.** According to page 28, we know that, "Helium is lighter than air. It is the only element that never turns into a solid." So, the correct answer is False.