

Skills Worksheet

Directed Reading A**Section: Chemical Properties****CHEMICAL PROPERTIES**

- _____ 1. The property of matter that describes its ability to change into new matter with different properties is known as a
- a. chemical change.
 - b. physical change.
 - c. chemical property.
 - d. physical property.
- _____ 2. The chemical property that describes the ability of two or more substances to combine to form new substances is called
- a. reactivity.
 - b. flammability.
 - c. density.
 - d. solubility.
- _____ 3. The ability of a substance to burn is a chemical property known as
- a. reactivity.
 - b. flammability.
 - c. density.
 - d. solubility.
- _____ 4. An iron nail is reactive with
- a. rubbing alcohol.
 - b. other iron nails.
 - c. wood in a house.
 - d. oxygen in the air.
- _____ 5. Which of the following statements is true about characteristic properties of matter?
- a. Characteristic properties depend on the size of the sample.
 - b. Characteristic properties may be either physical or chemical properties.
 - c. Characteristic properties involve only chemical properties.
 - d. Characteristic properties involve only the physical nature of the matter.

6. Describe the ways that burning changes the nature of wood.

7. A substance always has _____ properties, even though they are difficult to observe.
8. Scientists use _____ properties to help them identify and classify matter.

Directed Reading A *continued*

CHEMICAL CHANGES AND NEW SUBSTANCES

- _____ **9.** Chemical changes are the processes by which substances
- a.** move from place to place.
 - b.** change into new substances.
 - c.** change in their physical properties.
 - d.** become greater in mass.

- _____ **10.** Which of the following would NOT be considered an example of a chemical change?
- a.** the bubbling action of effervescent tablets
 - b.** the green coating on copper statues
 - c.** the melting of a Popsicle
 - d.** the burning of rocket fuel

11. How do you know that baking a cake involves chemical changes?

12. List some signs or clues that show that a change you are observing is a chemical change.

13. Because _____ change the identity of the substances involved, they are hard to reverse.

14. How could some chemical changes be reversed? Give an example.

Directed Reading A *continued*

PHYSICAL VERSUS CHEMICAL CHANGES

- _____ 15. What is the most important question to ask to determine whether a change is physical or chemical?
- a. Was there a color change?
 - b. Did the composition change?
 - c. Was there a change in size?
 - d. Did the change involve a change in state?
- _____ 16. What is the name of the process by which water is broken down into hydrogen and oxygen using an electric current?
- a. electrolysis
 - b. decomposition
 - c. reactivity
 - d. reversibility
17. During _____, the composition of a substance does not change.

Identify whether the following changes are physical changes or chemical changes. Label each change either PC for physical change or CC for chemical change.

- _____ 18. mixing vinegar and baking soda
- _____ 19. grinding baking soda into a powder
- _____ 20. souring milk
- _____ 21. melting an ice cream bar
- _____ 22. burning a wooden match
- _____ 23. shooting off fireworks
- _____ 24. mixing drink mix into water
- _____ 25. bending an iron nail

- 31.** Answers may vary. Sample answer:
When matter undergoes a physical change, one or more physical properties are changed. For example, if a lump of copper is drawn out into a thin wire, only its shape is changed, not its identity.

SECTION: CHEMICAL PROPERTIES

1. C
2. A
3. B
4. D
5. B
6. Answers will vary. Sample answer:
The burning changes wood to smoke and ashes.
7. chemical
8. characteristic
9. B
10. C
11. Answers may vary. Sample answer:
Baking a cake involves chemical changes because the cake has completely different properties than its original ingredients. It is impossible to reverse the results of those changes.
12. Answers may vary. Sample answer:
The creation of new substances with new properties shows that a change is chemical. Other signs include fizzing or foaming, a change in color or odor, the production of heat, sounds, or light being given off.
13. chemical changes
14. Answers may vary. Sample answer:
Some chemical changes can be reversed with more chemical changes. For example: The water formed in a space shuttle's rockets can later be split back into hydrogen and oxygen using an electric current.
15. B
16. A
17. physical changes
18. CC
19. PC
20. CC
21. PC
22. CC
23. CC
24. PC

25. PC

Directed Reading B**SECTION: WHAT IS MATTER?**

1. C
2. B
3. C
4. A
5. B
6. D
7. meniscus
8. cubic
9. volume
10. irregular solid
11. milliliter
12. cubic centimeters
13. B
14. D
15. C
16. D
17. C
18. B
19. A
20. mass
21. kilogram
22. newton
23. weight
24. C
25. B
26. C

SECTION: PHYSICAL PROPERTIES

1. A
2. C
3. C
4. B
5. A
6. B
7. C
8. A
9. A
10. B
11. C
12. D
13. D
14. B
15. D
16. A
17. C
18. physical change
19. state
20. identity
21. B