

Physical and Chemical Changing

Name _____ Class _____ Date _____

A. True or False

Determine if the following statements are true or false.

1. Cracking an egg shell is an example of a chemical change in matter.
2. Crushing a metal can is an example of a physical change in matter.
3. Physical changes in matter are often easy to reverse.
4. Dissolving salt in water changes the water to an entirely different substance.
5. All chemical changes are rapid and dramatic.
6. Formation of a solid from a solution is a sign of a chemical change.
7. To reverse a chemical change requires another chemical change.
8. Boiling water is a chemical change because a gas is released.
9. A sign of a chemical change is a change in mass.
10. Matter can be created or destroyed if a chemical change occurs.

B. Critical Reading

Read this passage from the text and answer the questions that follow.

Physical Changes in Matter

You hit a baseball out of the park and head for first base. You're excited. The score is tied, and now your team has a chance of getting a winning homerun. Then you hear a crash. Oh no! The baseball hit a window in a neighbouring house. The glass has a big hole in it, surrounded by a web of cracks. The glass has changed. It's been broken into jagged pieces. But the glass is still glass. Breaking the window is an example of a physical change in matter. A physical change in matter is a change in one or more of matter's physical properties. Matter may look different after a physical change occurs, but it's still the same substance with the same chemical properties.

Besides glass breaking, other examples of physical changes in matter include:

- cutting a log into smaller pieces.
- wearing a way of rock by wind-blown sand.
- braiding hair.
- crushing a metal can.
- melting chocolate.

Because the type of matter remains the same with physical changes, the changes are often easy to undo. For example, braided hair can be unbraided again. Melted chocolate can be put in a fridge to reharden.

Questions

1. Based on the examples above, what are some ways matter may be different after a physical change has occurred?
2. How do you know that cutting a log into smaller pieces does not change its chemical properties?
3. Dissolving salt in water is another example of a physical change. How do you think you could reverse it?

C. Multiple Choice

Circle the letter of the correct choice.

- Which of the following is not a physical change in matter?
 - cutting paper
 - braiding hair
 - melting ice
 - frying eggs
- Which of the following is not a chemical change in matter?
 - removing tarnish from copper
 - burning paper
 - breaking glass
 - baking cupcakes
- After a physical change, matter may
 - look different.
 - have less mass.
 - have different chemical properties.
 - be an entirely different substance.
- What is true of matter after a chemical change?
 - It has more mass.
 - It is the same substance.
 - It has different chemical properties.
 - Two of the above are true.
- Which change in matter is easiest to reverse?
 - chocolate melting
 - milk souring
 - leaves burning
 - iron rusting
- Which of the following indicates a change in a chemical property of matter?
 - Matter has a different color.
 - Matter consists of smaller pieces.
 - Matter has a different shape.
 - Matter has a different temperature.
- When wood burns, it changes to
 - ashes.
 - carbon dioxide.
 - water vapor.
 - all of the above.

D. Matching

Match each definition with the correct term.

Definitions

- _____ 1. type of change in which matter becomes an entirely different substance
- _____ 2. example of a physical change
- _____ 3. example of a chemical change
- _____ 4. amount of matter in a substance or object
- _____ 5. type of change in which only physical properties of matter change
- _____ 6. production of an odor
- _____ 7. matter cannot be created or destroyed

Terms

- a. physical change
- b. chemical change
- c. law of conservation of mass
- d. burning
- e. sign of chemical change
- f. mass
- g. melting

E. Fill in The Blank

Fill in the blank with the appropriate term.

1. Breaking a window is an example of a(n) _____ change in matter.
2. After a physical change, matter still has the same _____ properties.
3. Mixing vinegar and baking soda results in a(n) _____ change in matter.
4. Leaves turn color in the fall because of _____ changes in the leaves.
5. When matter changes, its total _____ always remains the same.
6. A(n) _____ change occurs when a log is cut into smaller pieces.
7. The release of gas bubbles is a sign that a(n) _____ change has occurred.

F. Critical Writing

Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.

Identify an original example of a physical change and an original example of a chemical change. Provide support for your choices.