

Chemical Reactions

A chemical reaction is any change that results in the formation of new substances that have different properties than what you started with. There are several clues that can indicate a chemical change has taken place. A color change in a substance is evidence that a chemical reaction has taken place. Other evidence of a chemical reaction is the formation of a gas indicated by the presence of bubbles or a strong smell. More evidence of a chemical reaction is a change in temperature, either up or down. Another bit of evidence that a chemical reaction has taken place is a precipitate (or solid) is formed. In the following experiments look for the evidence that a chemical change is taking place.

Directions:

1. Observe the demonstration called Elephant's Toothpaste.

Questions:

a. What did you observe? _____

b. What two pieces of evidence tell you a chemical reaction has taken place?

2. Watch the Patriotic Monster Foam video from www.missdoctorbailer.com

3. Write down 3 things you observed.

Chemical Reaction #1

Materials: baking soda, vinegar, portion cup

What To Do:

1. Place a small amount of baking soda in the portion cup
2. Place 50 drops of vinegar on the baking soda.
3. Observe what happens.

Evidence of a chemical reaction _____

Chemical Reaction #2

Materials: Ammonia, portion cup, grape juice

What To Do:

1. Place 15 drops of grape juice in the portion cup.
2. Place 25 drops of ammonia in the portion cup.
3. Observe what happens

Evidence of a chemical reaction _____

*****Safety Alert*** Will burn skin!**

Chemical Reaction #3

Materials: Damp Rid, water, portion cup, thermometer, small spoon

What To Do:

1. Read the thermometer and write the temperature in the before blank below.
2. Place one small spoonful of Damp Rid in the portion cup.
3. Cover the Damp Rid with water.
4. Place the thermometer in the Damp Rid and water solution.
5. Read the temperature and write in the after temperature.

Temperature before _____

Temperature after _____

Evidence of a chemical reaction _____



Chemical Reaction #4

Materials: milk, vinegar, portion cup, spoon

What To Do:

1. Place a small amount of milk in the portion cup.
-Just enough to cover the bottom.
2. Place 35 drops of vinegar in the portion cup.
3. Stir with the spoon.

Evidence of a chemical reaction _____

Chemical Reaction #5

Materials: ammonium nitrate, water, portion cup, spoon

What To Do:

1. Read the thermometer and place the temperature in the before blank below.
2. Place a small spoonful of ammonium nitrate in the portion cup.
3. Cover the ammonium nitrate with water.
4. Place the thermometer in the ammonium nitrate and water solution.
5. Read the temperature and place in the after blank below.

Temperature before _____

Temperature after _____

Evidence of a chemical reaction _____

Questions:

1. What are the four clues that give evidence a chemical reaction has taken place? _____

2. In chemical reaction #4 there was a bad smell created. What evidence of a chemical reaction does a bad smell give you? _____

Place the evidence of a chemical reaction in the column next to the actions listed below. If there is no chemical reaction write No evidence.

Action	Evidence
1. candle wax melting	
2. milk spoiling	
3. melting butter for popcorn	
4. burning leaves	
5. squeezing oranges to get orange juice	
6. cut apple browning in the air	
7. a rusting bicycle	
8. mixing baking soda and vinegar	
9. freezing chocolate-covered bananas	
10. fireworks exploding	

Name _____ period _____

EXIT TICKET

Chemical Reactions

1. A drain cleaner consists of sodium hydroxide and aluminum. When the drain cleaner is added to water, bubbles of hydrogen are produced and the solution becomes very hot. Which of the following is a new substance that is formed?
 - A. sodium hydroxide
 - B. aluminum
 - C. bubbles of hydrogen
2. What evidence of a chemical reaction is stated in question #1?
 - A. formation of a gas and heat
 - B. a color change
 - C. the formation of a precipitate
3. When an ice cube sits in a glass of water and melts what evidence of a chemical reaction is present?
 - A. formation of a gas
 - B. a color change
 - C. there is no evidence of a chemical reaction
4. When a match is scraped across a rough surface and lights up what evidence of a chemical reaction is present?
 - A. temperature change
 - B. a strange smell
 - C. both A and B

Name _____ period _____

EXIT TICKET

Chemical Reactions

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 - C. both A and B
3. A drain cleaner consists of sodium hydroxide and aluminum. When the drain cleaner is added to water, bubbles of hydrogen are produced and the solution becomes very hot. Which of the following is a new substance that is formed?
 - A. sodium hydroxide
 - B. aluminum
 - C. bubbles of hydrogen
4. What evidence of a chemical reaction is stated in question #3?
 - A. formation of a gas and heat
 - B. a color change
 - C. the formation of a precipitate