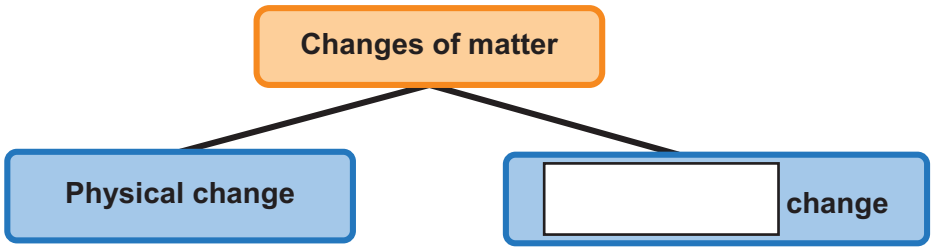
Edgenuity

Warm-Up | Evidence of Chemical Reactions

Classifying Changes in Matter



- Substance identity unchanged
- Generally _____

- Substance identity changes
- Generally irreversible

Lesson Objectives

By the end of this lesson, you should be able to:

- Explain what happens during a chemical _____.
- Identify the _____ of a chemical reaction.

Science Practice: Compare scenarios to determine whether a chemical reaction has occurred.

© Edgenuity, Inc.

Warm-Up | Evidence of Chemical Reactions

Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

chemical reaction	a process that changes one or more reactants into one or more [ ]
reactant	a [ ] that enters into a chemical reaction
product	a substance formed as a [ ] of a chemical reaction
precipitate	a solid substance that does not [ ] in a solution
endothermic reaction	a chemical reaction that [ ] energy
exothermic reaction	a chemical reaction that [ ] energy

© Edgenuity, Inc.

Instruction | Evidence of Chemical Reactions

Slide 1

Lesson Question

Slide 2

Chemical Changes and Chemical Reactions

A **chemical reaction** accompanies every chemical change that is observed.

Chemical change = **Chemical reaction**

Chemical Reactions

Chemical reaction:

- is a rearrangement of the atoms in [ ].
- results in a new substance.

Iron reacts with [ ] to form iron oxide ([ ]).

© Edgenuity, Inc.

Instruction | Evidence of Chemical Reactions

Slide 2

How to Represent a Chemical Reaction

Starting substances → ending substances

[ ] → products

reactant: starting substance in a chemical reaction

product: substance produced during a chemical reaction

Example: **Iron + oxygen → iron [ ]**

Slide 4

Rate of a Chemical Reaction





[ ] chemical reaction Slow chemical reaction

One thing many people misunderstand about chemical reactions is the [ ] at which they occur. People often think that a chemical reaction has to be a process like fireworks. But this is not true. Chemical reactions are sometimes extremely [ ]. For example, limestone statuary [ ] with [ ] rain over very long periods of time.

© Edgenuity, Inc.

Instruction | Evidence of Chemical Reactions

Slide 7

Indicators of Chemical Reactions

Evidences of a chemical reaction include:

- _____ formation.
- solid formation.
- color change.
- _____ change.
- _____ emission.

Gas or Solid Formation

A chemical reaction involves the rearrangement of atoms in reactants to form _____. Some products differ from reactants in that they are either:

- a gas.
- a solid (_____).

Color Change

A chemical reaction involves the rearrangement of atoms in _____ to form products. Some products differ from reactants in _____.

© Edgenuity, Inc.

Instruction | Evidence of Chemical Reactions

Slide 7

Evidence of Energy Change

Every chemical reaction involves a change in energy.

- _____ **reactions** absorb energy from the surroundings.
  - Temperature decreases.
- _____ **reactions** release energy into the surroundings.
  - Temperature increases (heat is released).
  - Light is _____.

Slide 14

Limitations of Indicators of a Chemical Reaction

Indicators of a chemical reaction are not proof of a chemical reaction.

- Some _____ changes are accompanied by:
  - gas formation.
  - _____ formation.
  - temperature change.
  - _____ change.

© Edgenuity, Inc.

Summary | Evidence of Chemical Reactions

Lesson Question

What occurs when two or more chemicals react with each other?

Answer

Slide 2

Chemical Reactions Defined

- Atoms in substances are rearranged.
- Rearrangement of [ ] results in new substances.
- Starting substances are [ ].
- Ending substances are [ ].

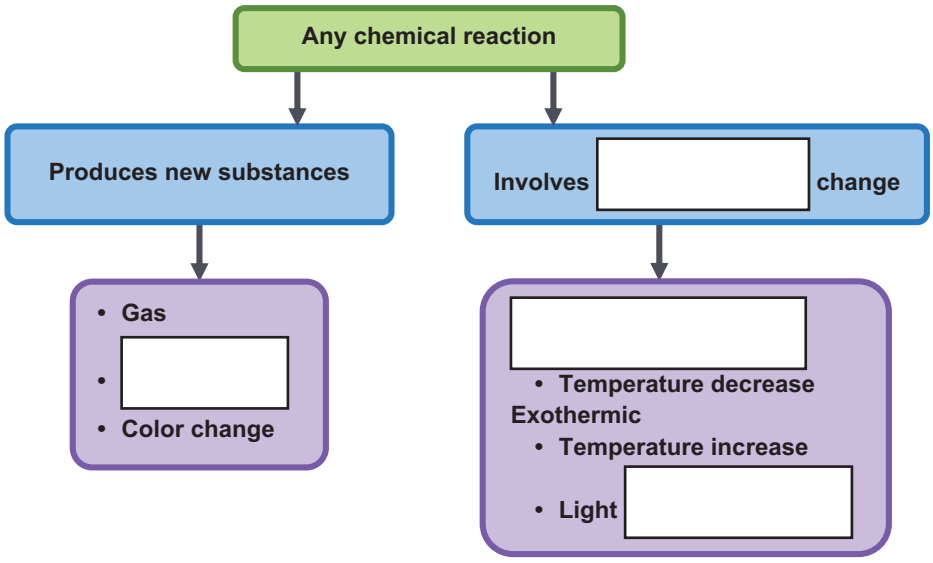
Reactants → Products

© Edgenuity, Inc.

Summary | Evidence of Chemical Reactions

Slide 2

Indicators of a Chemical Reaction



Use this space to write any questions or thoughts about this lesson.

© Edgenuity, Inc.