

## Spare Change

## Physical Versus Chemical Change

Name \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

**Purpose**

To learn to distinguish between physical changes and chemical changes.

**Part I: Classifying Change**

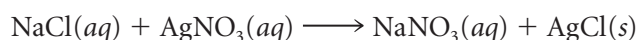
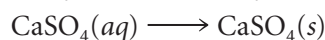
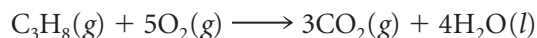
Use the table to help you answer the questions.

Physical change	?	Chemical change
$\text{H}_2\text{O}(l) \longrightarrow \text{H}_2\text{O}(s)$	$\text{NaCl}(s) \longrightarrow \text{NaCl}(aq)$	$\text{S}(s) + \text{O}_2(g) \longrightarrow \text{SO}_2(g)$
$\text{Br}_2(l) \longrightarrow \text{Br}_2(g)$	$\text{C}_6\text{H}_{12}\text{O}_6(s) \longrightarrow \text{C}_6\text{H}_{12}\text{O}_6(aq)$	$\text{CH}_4(g) + 2\text{O}_2(g) \longrightarrow \text{CO}_2(g) + 2\text{H}_2\text{O}(l)$
$\text{CO}_2(s) \longrightarrow \text{CO}_2(g)$	$\text{CoCl}_2(s) \longrightarrow \text{CoCl}_2(aq)$	$\text{CaCO}_3(s) \longrightarrow \text{CaO}(s) + \text{CO}_2(g)$

- Examine the equations in the first column. Name two things they have in common.
- What do the equations in the third column have in common?
- What do the equations in the second column describe?
- How would you define physical change? Use the information from the table.
- How would you define chemical change? Use the information from the table.

6. When something dissolves, would you classify it as a physical or a chemical change? Explain your thinking.

7. Examine these four chemical equations. Place each in its appropriate column in the table.



## Part 2: Physical or Chemical Change

The table lists the equations from Lesson 2: Making Predictions.

1. Write P or C next to each equation to indicate whether it represents a physical change or a chemical change.

Equations from Lesson 2: Making Predictions	P or C?
1. $\text{CO}_2(s) \longrightarrow \text{CO}_2(g)$	
2. $\text{CO}_2(s) + \text{H}_2\text{O}(l) \longrightarrow \text{H}_2\text{CO}_3(aq)$	
3. $\text{Ca}(\text{OH})_2(aq) + \text{CO}_2(s) \longrightarrow \text{CaCO}_3(s) + \text{H}_2\text{O}(l)$	
4. $\text{CaCl}_2(s) \longrightarrow \text{CaCl}_2(aq)$	
5. $\text{CaCl}_2(aq) + 2\text{NaOH}(aq) \longrightarrow \text{Ca}(\text{OH})_2(s) + 2\text{NaCl}(aq)$	
6. $\text{CaCl}_2(s) + \text{CuSO}_4(s) \longrightarrow \text{CaCl}_2(s) + \text{CuSO}_4(s)$	
7. $\text{CuSO}_4(s) \longrightarrow \text{CuSO}_4(aq)$	
8. $\text{CuSO}_4(s) + 4\text{NH}_4\text{OH}(aq) \longrightarrow \text{Cu}(\text{NH}_3)_4\text{SO}_4(aq) + 4\text{H}_2\text{O}(l)$	
9. $\text{CuSO}_4(aq) + \text{Zn}(s) \longrightarrow \text{Cu}(s) + \text{ZnSO}_4(aq)$	

2. What evidence did you use to help you decide whether to write P or C?

3. **Making Sense** If you were asked to classify a reaction as a physical change or a chemical change, which would you prefer to have: a set of observations, or the chemical equations? Explain your thinking.