LESSON 70

DEMO

Spare Change

Physical Versus Chemical Change

Name _____

Date _____ Period _____

Purpose

To learn to distinguish between physical changes and chemical changes.

Part 1: Classifying Change

Use the table to help you answer the questions.

Physical change	?	Chemical change
$H_2O(l) \longrightarrow H_2O(s)$	$NaCl(s) \longrightarrow NaCl(aq)$	$S(s) + O_2(g) \longrightarrow SO_2(g)$
$Br_2(l) \longrightarrow Br_2(g)$	$C_6H_{12}O_6(s) \longrightarrow C_6H_{12}O_6(aq)$	$CH_4(g) + 2O_2(g) \longrightarrow CO_2(g) + 2H_2O(l)$
$CO_2(s) \longrightarrow CO_2(g)$	$CoCl_2(s) \longrightarrow CoCl_2(aq)$	$CaCO_3(s) \longrightarrow CaO(s) + CO_2(g)$

1. Examine the equations in the first column. Name two things they have in common.

2. What do the equations in the third column have in common?

3. What do the equations in the second column describe?

4. How would you define physical change? Use the information from the table.

5. 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.

$C_3H_8(g) + 5O_2(g) \longrightarrow 3CO_2(g) + 4H_2O(l)$

$C_2H_6O(l) \longrightarrow C_2H_6O(g)$

$CaSO_4(aq) \longrightarrow CaSO_4(s)$

$NaCl(aq) + AgNO_3(aq) \longrightarrow NaNO_3(aq) + AgCl(s)$

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. $CO_2(s) \longrightarrow CO_2(g)$	
2. $CO_2(s) + H_2O(l) \longrightarrow H_2CO_3(aq)$	
3. $Ca(OH)_2(aq) + CO_2(s) \longrightarrow CaCO_3(s) + H_2O(l)$	
4. $CaCl_2(s) \longrightarrow CaCl_2(aq)$	
5. $CaCl_2(aq) + 2NaOH(aq) \longrightarrow Ca(OH)_2(s) + 2NaCl(aq)$	
6. $CaCl_2(s) + CuSO_4(s) \longrightarrow CaCl_2(s) + CuSO_4(s)$	
7. $CuSO_4(s) \longrightarrow CuSO_4(aq)$	
8. $CuSO_4(s) + 4NH_4OH(aq) \longrightarrow Cu(NH_3)_4SO_4(aq) + 4H_2O(l)$	
9. $CuSO_4(aq) + Zn(s) \longrightarrow Cu(s) + ZnSO_4(aq)$	

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.