

## Activity Sheet Answers

### Chapter 6, Lesson 3

#### Forming a Precipitate

#### DEMONSTRATION

1. Your teacher combined two clear colorless solutions. One was a sodium carbonate solution and the other was a magnesium sulfate solution. Do you think a chemical reaction occurred when these two substances were combined? Why or why not?



When sodium carbonate solution was mixed with a magnesium sulfate solution a chemical reaction took place because a solid was formed from two liquids.

2. What is a precipitate?

A precipitate is a solid that is formed when two liquids are mixed together and the solid does not dissolve.

#### ACTIVITY

3. What do you observe when you combine baking soda solution and calcium chloride solution?

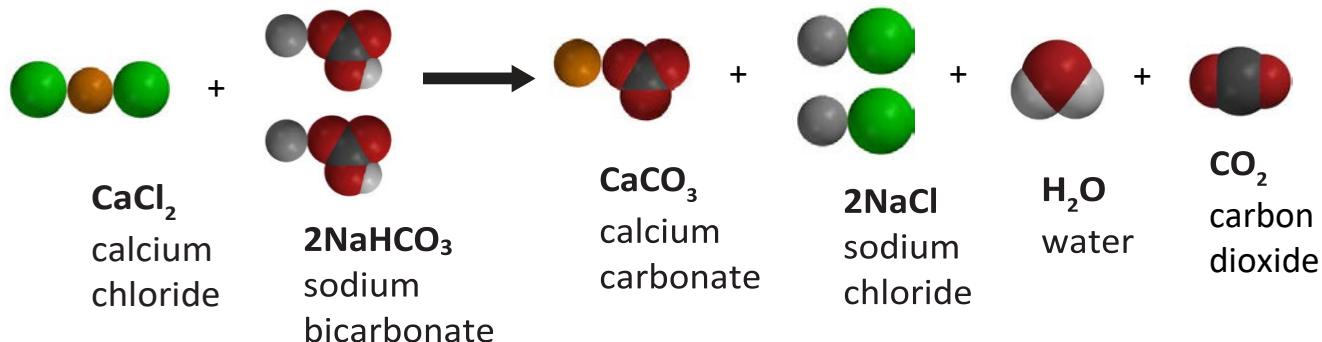
When a baking soda solution is combined with a calcium chloride solution, there is bubbling and white particles appear in the mixture.

4. How do you know that a chemical reaction occurs when you combine baking soda solution and calcium chloride solution?

When a baking soda solution is mixed with a calcium chloride solution, you can tell that a chemical reaction takes place because a gas and a precipitate are produced.

#### EXPLAIN IT WITH ATOMS & MOLECULES

5. Look at the chemical equation for the reaction between calcium chloride and sodium bicarbonate and answer the following questions.



What gas is produced in the chemical reaction?

The gas produced is carbon dioxide

What do you think is the precipitate?

The precipitate is calcium carbonate

<b>How many of each type of atom appears on each side of the chemical equation?</b>		
<b>Atom</b>	<b>Reactant side</b>	<b>Product side</b>
Calcium	1	1
Chlorine	2	2
Sodium	2	2
Hydrogen	2	2
Oxygen	6	6
Carbon	2	2

## **ACTIVITY**

6. Is filtering the calcium carbonate and allowing the water to evaporate a chemical change or a physical change? Why?

Filtering the calcium carbonate and allowing the water to evaporate from it are physical changes and not chemical changes. The filtering and the evaporation both leave calcium carbonate which does not become a different substance.

## **ACTIVITY**

7. Did the precipitate dissolve like the sodium bicarbonate or the calcium chloride?

No, the precipitate did not dissolve like the sodium bicarbonate or the calcium chloride.

8. Would you say that the precipitate is the same substance as either the sodium bicarbonate or the calcium chloride, or a different substance? Why?

The precipitate is not the same substance as either sodium bicarbonate or calcium chloride. Each substance has its own unique solubility. Since the precipitate did not dissolve like either of these reactants it is not the same as them. It is a different substance.

## TAKE IT FURTHER

Your teacher added drops of ammonia to copper II sulfate solution.

9. How can you tell that something new was made when the copper II sulfate and ammonia reacted?

When the drops of ammonia were added to the copper II sulfate solution, there was a color change and a precipitate was formed.



10. How can you tell that something new was made when these substances reacted with hydrogen peroxide?

When the hydrogen peroxide was added, the color changed and a different precipitate seemed to form.