LESSON 8

FOLLOW-UP

What Goes Around Comes Around
Conservation of Matter

Name _____

Date _____ Period _____

Purpose

To use the symbols for the elements to track an element as it goes through various chemical changes.

Instructions

Work as a group to figure out where the copper was during each stage of the lab. Use your observations from Lesson 7: Now You See It and the worksheet from Lesson 6: A New Language.

Part 1: Steps of the Copper Cycle

Translate each sentence into symbols and formulas. The first one is done for you.

Step 1

"Colorless nitric acid is added to solid orange-brown copper powder, resulting in a blue-green solution, a brown gas, and liquid water."

$\underline{HNO_3(aq)}$ is added to $\underline{Cu(s)}$, resulting in $\underline{Cu(NO_3)_2(aq)}$ and $\underline{NO_2(g)}$

and $\underline{H_2O(l)}$.

Step 2

"Clear, colorless sodium hydroxide solution is added to the blue-green solution, resulting in clumps of dark blue solid and clear, colorless sodium nitrate solution."

_____ is added to _____, resulting in _____
(blue-green solution) (dark blue solid)

and _____.

Step 3

"The dark blue clumps are heated, resulting in a black solid and liquid water."

_____ is heated, resulting in _____ and _____.
(dark blue solid) (black solid)

Step 4

"Clear, colorless sulfuric acid is added to the black solid, resulting in a clear blue solution and liquid water."

_____ is added to _____, resulting in _____
(black solid) (clear blue solution)

and _____.

Step 5

"Solid, silver-gray zinc is added to the clear blue solution, resulting in a brownish powder and clear, colorless zinc sulfate solution."

_____ is added to _____, resulting in _____
(clear blue solution) (brownish powder)

and _____.

Part 2: Track the Copper

As you look at your sentences from Part 1, you should see a copper substance at the beginning and end of each step, so the copper never "went away." Summarize your sentences in the table.

Procedure	Symbol of chemical added	Observations	Formula and name of copper compound	What happened to the copper?
Got a sample of copper	$Cu(s)$	Orange-brown powder.	$Cu(s)$ solid copper powder	Nothing yet.
Added nitric acid	$HNO_3(aq)$			
Added sodium hydroxide				
Added heat (removes H_2O)	none			
Added sulfuric acid				
Added zinc			$Cu(s)$ solid copper	

Making Sense Describe what happened to the copper throughout this experiment.