

## Lesson 7 Pre/Post-Test: Chemical/Physical Changes

### SCORING GUIDE

1. In chemistry, what does 'physical change' mean?

A PHYSICAL CHANGE IS A CHANGE THAT DOES NOT PRODUCE NEW SUBSTANCES. A PHYSICAL CHANGE ONLY CHANGES SOME OF THE PHYSICAL PROPERTIES OF A SUBSTANCE, SUCH AS SHAPE, SIZE, OR STATE OF MATTER.

2. In chemistry, what does 'chemical change' mean?

A CHEMICAL CHANGE IS A CHANGE THAT PRODUCES NEW SUBSTANCES. YOU NO LONGER HAVE THE SUBSTANCE YOU STARTED WITH.

3. Give an example of a physical change.

POSSIBLE EXAMPLES:

CUTTING AN APPLE OR A PIECE OF PAPER IN HALF  
CHANGING WATER INTO ICE CUBES  
CRUMPLING A PIECE OF PAPER INTO A BALL  
SHARPENING A PENCIL AND MAKING PENCIL SHAVINGS

4. Give an example of a chemical change.

POSSIBLE EXAMPLES:

BURNING A PIECE OF PAPER  
BURNING GASOLINE IN A CAR ENGINE  
DROPPING ALKA SELTZER INTO A GLASS OF WATER  
MIXING BAKING SODA WITH VINEGAR

5. If you burn a piece of paper, what kind of change is that - physical or chemical? How do you know?

CHEMICAL. WHEN PAPER BURNS, NEW SUBSTANCES ARE FORMED. THESE SUBSTANCES INCLUDE ASHES, SOOT, HEAT AND LIGHT.

6. If you tear a piece of paper in half or shred it into tiny pieces, what kind of change is that - physical or chemical? How do you know?

PHYSICAL. NO NEW SUBSTANCES ARE PRODUCED AND IT IS STILL PAPER.

7. When soda is poured from a 2 liter bottle into an 8 oz glass, what kind of change is that - physical or chemical? How do you know?

PHYSICAL. NO NEW SUBSTANCES ARE PRODUCED AND IT IS STILL SODA.

8. When Alka Seltzer is dropped into a glass of water and it fizzes, what kind of change is that - chemical or physical? How do you know?

CHEMICAL. WHEN IT FIZZES IT CHANGES INTO A GAS THAT WE CAN DRINK.

9. If water boils and changes to steam, what kind of change do you think that is - physical or chemical? How do you know?

PHYSICAL. THERE ARE NO NEW SUBSTANCES PRODUCED. LIKE WATER FREEZING, WHEN WATER BECOMES STEAM IT CHANGES ITS PHASE.

10. When you sharpen a pencil, what kind of change is that - physical or chemical? How do you know?

PHYSICAL. EVEN THOUGH IT IS IN A DIFFERENT SHAPE, THE PENCIL SHAVINGS ARE STILL PENCIL MATERIAL.