Physical and Chemical Properties and Changes Lab

Station 1  Color Station

Instruction: Describe the color of the following substances.

<table>
<thead>
<tr>
<th>Substance</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sulfur</td>
<td></td>
</tr>
<tr>
<td>2. Ammonium dichromate</td>
<td></td>
</tr>
<tr>
<td>3. Salt</td>
<td></td>
</tr>
<tr>
<td>4. Sugar</td>
<td></td>
</tr>
</tbody>
</table>

Question:

1. Can color be a useful property to describe and identify a substance?
   __________________________________________________________________________
   a. Why or why not?
   __________________________________________________________________________

2. Based on your observation, is COLOR a: **physical property** or **chemical property** (Circle one)
   a. How can you tell? __________________________________________________________________________

Station 2  Ability to Rust Station

Instruction: Describe the appearance of the nail in each container.

Container 1: _______________________________________________________________________________

Container 2: _______________________________________________________________________________

Question:

1. Based on your observation, is the **ABILITY TO RUST** a: **physical property** or **chemical property** (Circle one)
   a. How can you tell? __________________________________________________________________________

Station 3  Malleability & Ductility Station

Copper can both be malleable and ductile.
Question:

1. How are you going to classify copper, an element or a compound? ___________________________
   a. Why? ____________________________________________________________________________

2. Based on your observation, are MALLEABILITY AND DUCTILITY a: physical property or chemical property (Circle one)
   a. How can you tell? __________________________________________________________________

Station 4      Viscosity Station

Instruction: Lift the fish line above each liquid substance on the graduated cylinder. Make sure that they are of the same level. Drop it inside the graduated cylinder and record the time it takes to reach the bottom of the graduated cylinder.

Questions:

1. Which has the highest viscosity? ____________________________
2. Which has the lowest viscosity? ____________________________
3. Based on your observation, is VISCOSITY a: physical property or chemical property (Circle one)
   a. How can you tell? __________________________________________________________________

Station 5      Reactivity Station

Note: Use the goggles before you perform the instruction.

Instruction: Place one piece of calcium shot inside the test tube and add about 5 mL of water. Record your observation in the space below.

Dispose the content of the test tube on the waste beaker provided for station and rinse the test tube with water before returning to its place.

Observation: ________________________________________________________________________

Question:

1. Based on your observation, is the REACTIVITY OF CALCIUM IN WATER a: physical property or chemical property (Circle one)
   a. How can you tell? __________________________________________________________________
Station 6  Reactivity Station

Note: Use goggles before you perform the instruction.

Instruction: Place 3 mL of sodium hydroxide solution to the test tube. Add a drop of phenolphthalein. Shake it a little bit and then add 5 drops of hydrochloric acid solution and record your observation.

Dispose the content of the test tube on the waste beaker provided for station and clean the test tube.

Observation: ___________________________________________________________________

______________________________________________________________________________

Question:

1. Based on your observation, is the REACTION OF SODIUM HYDROXIDE AND HYDROCHLORIC ACID a: physical change or chemical change (Circle one)
   a. How can you tell?_____________________________________________________________________

Station 7  States of Matter Station

Instruction: Study the station card provided and answer the following questions:

1. Describe the molecular arrangement of
   solid __________________________________________________
   liquid _________________________________________________
   water vapor __________________________________________

2. Is there a change in the composition of ice, water, and water vapor?
   __________________________________________________________________

3. Based on your observation, is the STATE OF MATTER a: physical property or chemical property (Circle one)
   a. How can you tell?_____________________________________________________________________

Station 8  Solubility Station

Instruction: Put a spatula of salt in the plastic cup and add 10 mL of water and stir. On another cup, put a spatula of cornstarch and add 10 mL of water and stir.

Dispose the content of the test tube on the waste beaker provided for station and throw the plastic cup.

Question:
Station 9  Reactivity Station

Note: Use your goggles before you perform the instruction.

Instruction: Put spatula of baking powder in a cup and add 10 mL of vinegar. Record your observation.

Dispose the content of the test tube on the waste beaker provided for station and throw the plastic cup.

Observation: ________________________________________________________________

Question:

1. Based on your observation, is the REACTION OF BAKING POWDER AND VINEGAR a: physical change or chemical change (Circle one)
   a. How can you tell?__________________________________________________________

Station 10  Density Station

Instruction: Observe the regular soda and diet soda inside the beakers.

Questions:

1. Which is denser, regular soda or diet soda? ________________________________

2. What is responsible for the differences in their densities?______________________

3. Based on your observation, is the DENSITY a: physical property or chemical property (Circle one)
   a. How can you tell?__________________________________________________________

Station 11  Flammability Station

Note: Use your goggles before you perform the instruction.

Instruction: Use the crucible tongs to pick up one item at a time. With the lighter provided, attempt to light the paper, then aluminum strip on fire.
Question:

1. Which items were flammable?

2. Based on your observation, is the FLAMMABILITY OF PAPER/ALUMINUM a: physical change or chemical change (Circle one)
   b. How can you tell?