

**5<sup>th</sup> Grade - Lesson 2.2**  
**Activity Sheet**  
**Developing Tests to Identify**  
**Similar-Looking Liquids**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Safety:** Wear safety goggles and be sure to follow all safety instructions given by your teacher. Wash your hands after completing the activity.

### **INTRODUCTION**

1. If you compare how different liquids act on wax paper, why is it important to use the same amount of each liquid in your “wax paper test”?

### **ACTIVITY**

#### **Question to investigate:**

Can you identify an unknown liquid by testing various liquids on different surfaces?

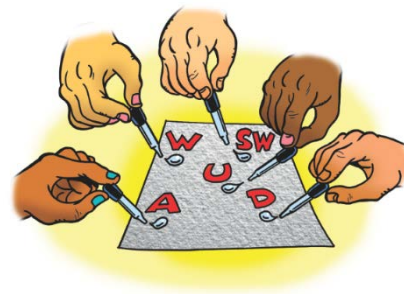
#### **Materials**

- Water in cup
- Isopropyl “rubbing” alcohol (70%) in cup
- Detergent solution in cup
- Salt water in cup
- Unknown in cup
- 5 droppers
- Wax paper
- Construction paper
- Pencil

#### **WAX PAPER TEST**

##### **Procedure**

1. Use a pencil to label the wax paper **W**, **SW**, **A**, and **D** for water, salt water, alcohol, and detergent. Mark the paper in the middle with **U** for the unknown.
2. Use a separate dropper to get a small amount of each liquid.
3. At the same time, gently squeeze 1 drop of each liquid onto its labeled area of the wax paper.



### WHAT DID YOU OBSERVE?

2. Describe what you noticed about each liquid on the wax paper.

Water

Salt Water

Alcohol

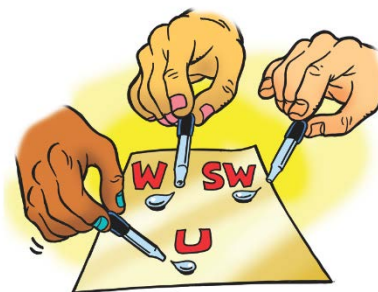
Detergent

3. Based on the “wax paper test”, what do you think the identity of the unknown liquid might be? \_\_\_\_\_

### CONSTRUCTION PAPER TEST

#### Procedure

1. Use a pencil to label the construction paper W and SW for water and salt water and U for the unknown.
2. Use a dropper to get a small amount of each liquid.
3. At the same time, gently squeeze 1 drop of each liquid onto its labeled area of the construction paper.



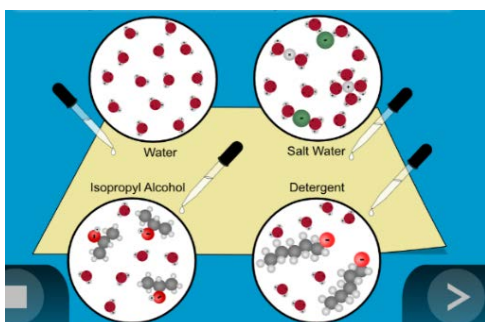
### WHAT DID YOU OBSERVE?

4. Describe what you observed about the liquids on the construction paper.

5. Based on the “construction paper test”, what do you think is the identity of the unknown? \_\_\_\_\_

### EXPLAIN IT WITH ATOMS & MOLECULES

6. You saw models of the molecules of the different liquids. Why do you think the liquids acted differently from each other?



## TAKE IT FURTHER

### Materials

- 2 white coffee filters
- 2 cups
- 3 or 4 drops of green food coloring in a small cup
- 2 cotton swabs
- Water
- Salt water

### Procedure

1. Use a pencil to mark the coffee filters W and SW, for water and salt water.
  2. Dip your cotton swab into the food coloring and then use the swab to make a dark dot in the center of each coffee filter.
  3. Dip one end of a clean cotton swab into the water and move it around a bit to be sure it gets wet. Place the wet end on the dot on the coffee filter labeled W as shown.
  4. Use a different cotton swab and dip it into the salt water and move it around a bit to be sure it gets wet. Place the wet end on the dot on the coffee filter labeled SW as shown.
  5. If it looks like the color is not spreading much, re-dip the cotton swab into the water and salt water and put the wet end on the color again.
7. After allowing the color to spread for a while, describe what the color looked like on each coffee filter.



With Water

With Salt Water

8. How do you think the salt in the salt water might be interacting with the molecules in the food coloring and the filter paper to affect the way the colors move?