

**5<sup>th</sup> Grade - Lesson 1.3**  
**Activity Sheet**  
**Dissolving and Back Again**

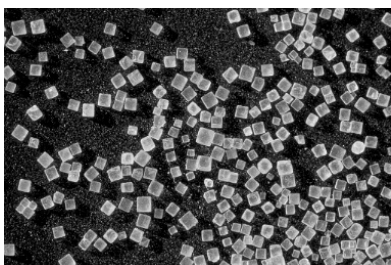
Name: \_\_\_\_\_

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

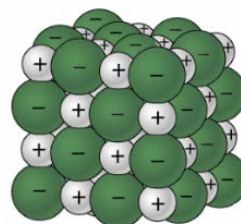
**Safety:** Wear safety glasses or goggles, and be sure to follow all safety instructions given by your teacher. Wash your hands after completing the activity.

**DEMONSTRATION**

In the demonstration, you saw a photo of magnified salt crystals and a model of a salt crystal showing that it is made up of sodium and chloride ions.



**Magnified Salt Crystals**



**Salt Crystal Model**

1. What keeps the sodium and chloride ions together in a salt crystal?

**ACTIVITY**

**Question to investigate:**

What happens when salt is dissolved in water and the water evaporates?

**Materials**

- Kosher salt
- Teaspoon
- Water
- Clear plastic cup
- Petri dish or other shallow container, such as the lid from a yogurt container

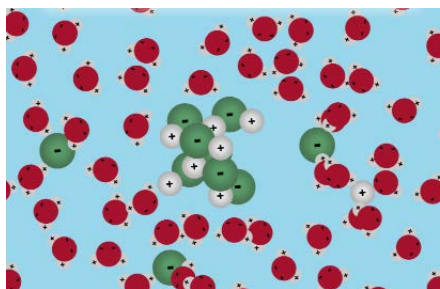
**Procedure**

1. Add 1 teaspoon of salt to a clear plastic cup.
2. Add 20 milliliters (4 teaspoons) of water to the cup containing the salt and swirl until most or all the salt dissolves.
3. Pour the salt water into a shallow container, such as a Petri dish or yogurt container lid, and set aside for 24 hours.



### **EXPLAIN IT WITH ATOMS AND MOLECULES**

2. You saw an animation of water dissolving salt. In a couple of sentences, explain how water dissolves salt. Be sure to include details about the water molecule and the sodium and chloride ions.



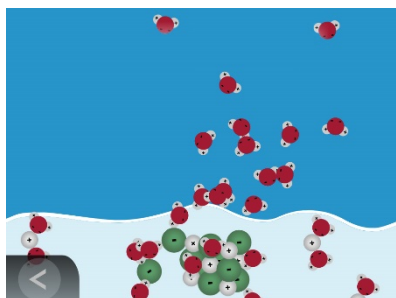
### **WHAT DID YOU OBSERVE?**

#### **NEXT DAY**

3. Observe the contents of the shallow salt water container. Describe what you see.

### **EXPLAIN IT WITH ATOMS AND MOLECULES**

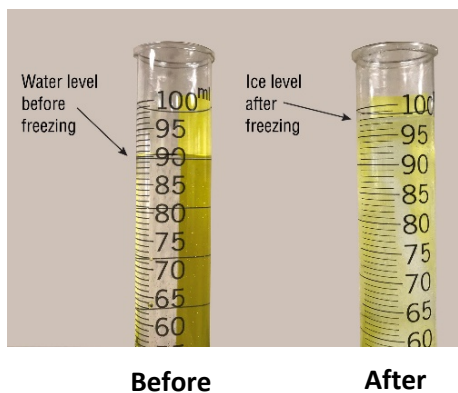
4. You saw an animation of salt water evaporating and the salt re-crystallizing. In a couple of sentences, describe what happened to make the salt crystals form again. Be sure to mention the charges of the sodium and chloride ions.



### **TAKE IT FURTHER**

5. Evaporation is a change of state from a liquid to a gas.  
Freezing is a change of state from a \_\_\_\_\_ to a \_\_\_\_\_.
6. Circle the correct answer: After liquid water freezes to form ice, the water molecules in the ice are:
  - a. Closer together than in liquid water.
  - b. Farther apart than in liquid water.
  - c. The same distance as in liquid water.

7. In these “before” and “after” pictures below, the same amount of water was added to each cylinder and then one was put in the freezer.



Using what you know about water molecules in liquid water and in ice, explain why the frozen water (ice) takes up more space than the liquid water.