

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## ***HOW TO MAKE A CLOUD***

### **GOAL:**

The goal of this demonstration is to show students how clouds can be formed by the interaction of cold air and warm, moist air.

### **DIRECTIONS:**

1. Obtain a Ziploc bag full of ice, a beaker of water, and a hot plate.
2. Place the beaker of water on the hot plate and bring the water to a boil.
3. Hold the bag of ice above the boiling water. Ask the students to observe what is happening.
4. Ask the students to observe the water droplets (condensation) that are forming on the outside of the bag. Make sure that they understand the water droplets are coming from the boiling water and NOT from the ice cubes. This is a very common misconception.
5. Explain that condensation occurs any time there is an interaction between cold air and warm, moist air. The warm air can hold a lot of water vapor molecules. Cold air doesn't hold much water. As the warm air is cooled (from the ice cubes), condensation forms because there is not enough room in the air itself for the water vapor. The molecules condense on any object, usually a piece of dust in the atmosphere. This process would form a cloud in the sky. In the case of this activity, the water molecules condensed on the outside of the Ziploc bag. The only purpose of the ice cubes was to provide a source of cold air so that "clouds" could form on the bag.