

## *Changes Activity Bag*

### **Changes of Water: Student Activity Guide**

On a hot day, you fill a cup with lemonade and some ice cubes. A little while later the ice cubes are gone? **Where did the ice cubes go?** After a rainstorm, you notice puddles in the parking lot. The next day it is sunny and the puddles are gone. **Where did the puddles go?** We will explore these questions.

These directions will get you started. Your teacher will help you and provide information.

#### **Materials From The Bag**

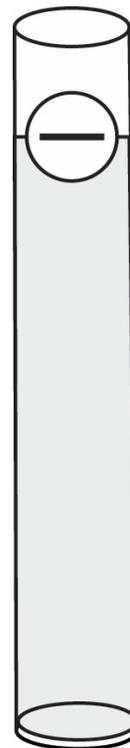
- Container A
- Container B
- Container C
- Container D
- Container E
- Scoop
- Clear Lid
- White Lid
- Paper Cup
- Line Stickers

#### **You Will Need**

- Water
- Science Notebook or Student Activity Sheet from the teacher

## **Part 1: Heating and Cooling**

1. Place 3 scoops of water into **container A**.
2. Place a line sticker at the top of the water.
3. Carefully place the container in the freezer.
4. The next day take the container out of the freezer
5. What do you notice about the top of the ice?



### *What's happening...*

Water is a liquid. Water can change from a liquid to a solid when it freezes.

Heat is removed from the water in the freezer and it turns to ice. Water in its solid form is called ice.

6. Mark the top of the ice on the picture above. Label it ice.
7. Compare the top of the ice to the line sticker. The line sticker shows where the top of the water was.
8. Predict where you think the top of the water will be after the ice melts.
9. Mark your prediction on the picture above. Label it with a P.
10. Allow the ice to melt.
11. Compare your results to your prediction.

12. Compare the amount of water before and after freezing.

*What's happening...*

When ice is removed from the freezer, the ice begins to melt. The heat from the air melts the ice into liquid water. **The amount of water does not change**, but the space it takes up changes. The amount of water is the same before it freezes, when it is frozen, and after it melts.

## **Part 2: Open and Closed Containers**

### **Closed Container**

1. Fill up the paper cup with water.
2. Use the scoop and place 3 scoops of water into **container B**, **container C**, and **container E**.
3. Place the clear lid on **container B**.
4. Place the white lid on **container C**.
5. **Container D** is the lid of **container E**. Place **container D** on top of **container E**.
6. Place a line sticker at the top of the water in **containers B and C**.
7. Draw each container set-up.

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8. Check the containers each day for three days. Draw the container set-ups each day.
9. What do you notice?

### **Open Container**

1. Carefully remove the white lid, clear lid, and container D.
2. Check the containers each day for three days. Draw the container set-ups each day.
3. What do you notice? Compare the amount of water in the closed containers and the open containers?

### *What's happening...*

The amount of water in a closed container does not change. The water in an open container will contain less water over time. Where did the water go? We have seen water as a solid (ice) and as a liquid. Water can also be a gas. We cannot see water as a gas. The water that is no longer in the open container is now the gas form of water. When puddles “dry up” the liquid water became a gas.