

## Changing State - Condensation Activity Sheet

### Objectives:

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

### DEMONSTRATION

1. Your teacher showed you two cups of water with ice in them. One cup was in a bag with as much air taken out as possible. The other cup was left out in the air. After a few minutes, water was on the outside of the cup left in the air. Much less water was on the cup in the bag.

Why do you think the cup that is exposed to more air has water on the outside of it?



2. Condensation happens when water molecules in the air slow down so much that their attractions overcome their speed. This makes them join together, forming liquid water.

List two common examples of condensation.

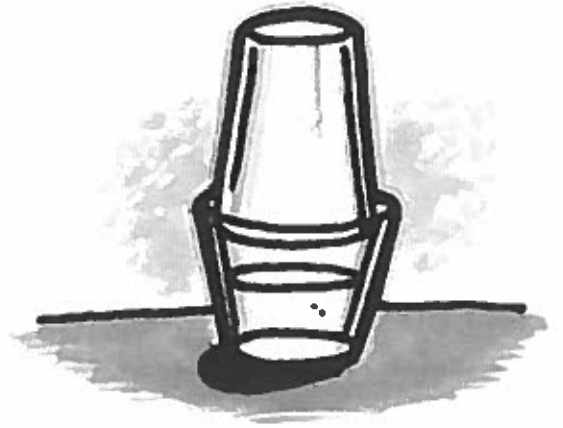
## ACTIVITY

### Question to investigate

What happens when water vapor condenses?

### Materials for each group

- 1 short wide- rimmed clear plastic cup
- 1 tall smaller-rimmed clear plastic cup
- Hot water (about 50 °C)
- Magnifier



### Procedure

1. Fill a wide clear plastic cup about 2/3 full of hot tap water. Place the tall cup upside down inside the rim of the bottom cup as shown.
2. Watch the cups for 1 – 2 minutes.
3. Use a magnifier to look at the sides and top of the top cup.
4. Take the top cup off and feel the inside surface.

### WHAT DID YOU OBSERVE?

3. After a couple of minutes, what did you observe on the inside of the top cup?
4. How could tiny drops of water get to the inside of the top cup? Use ideas about evaporation and condensation in your explanation.

## ACTIVITY

### Question to investigate

Does making water vapor colder increase the rate of condensation?

### Materials for each group

- 2 short wide- rimmed clear plastic cup
- 2 tall smaller-rimmed clear plastic cup
- Hot water (about 50 °C)
- Magnifier
- Ice



### Procedure

1. Fill two wide clear plastic cup about 2/3 full of hot tap water.
2. Quickly place the taller cups upside down inside the rim of each cup of water, as shown.
3. Place a piece of ice on top of one of the cups.
4. Wait 2 – 3 minutes.
5. Remove the ice and use a paper towel to dry the top of the cup where the ice may have melted a bit.
6. Use a magnifier to examine the tops of the two upper cups.

### WHAT DID YOU OBSERVE?

5. Does cooling water vapor increase the rate of condensation?

What evidence do you have from the activity to support your answer?

