

Activity Sheet

Changes Caused by Heating and Cooling

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

**ACTIVITY**

**Question to Investigate:**

How does butter change when it is warmed and then cooled?

**Materials**

- Small plastic cup with ¼ teaspoon of butter in it
- 2 Popsicle sticks
- Cup for hot water
- Cup for ice water

**Procedure**

1. Carefully push the plastic cup containing butter a little way into the cup of hot water.
2. Use the popsicle stick to move the butter around in the bottom of the cup. If the butter gets stuck on the popsicle stick, use the other popsicle stick to push the butter back down into the cup.
3. Keep the cup with the butter in the hot water and keep stirring until you see a change in the butter. Continue stirring until the butter doesn't change any more.



**Finish the sentence to describe what changes you observed in the butter:**

1. The butter in the cup that was heated \_\_\_\_\_

2. The butter in the cup your teacher kept at room temperature \_\_\_\_\_

3. We observed that when butter is heated, it (circle the correct answer)

- A. changes from a liquid to a solid.
- B. changes from a solid to a liquid.
- C. remains a liquid.
- D. remains a solid.

4. Take the cup containing the butter out of the hot water and place it in the cup of ice water. Do not stir the liquid butter this time.
5. Keep the cup in the ice water and gently touch the butter with your Popsicle stick. If the butter seems hard, scrape some up with the Popsicle stick.



4. We observed that when liquid butter is cooled, it  
(circle the correct answer)

- A. changes from a liquid to a solid.
- B. changes from a solid to a liquid.
- C. remains a liquid.
- D. remains a solid.