

From gas to liquid to solid

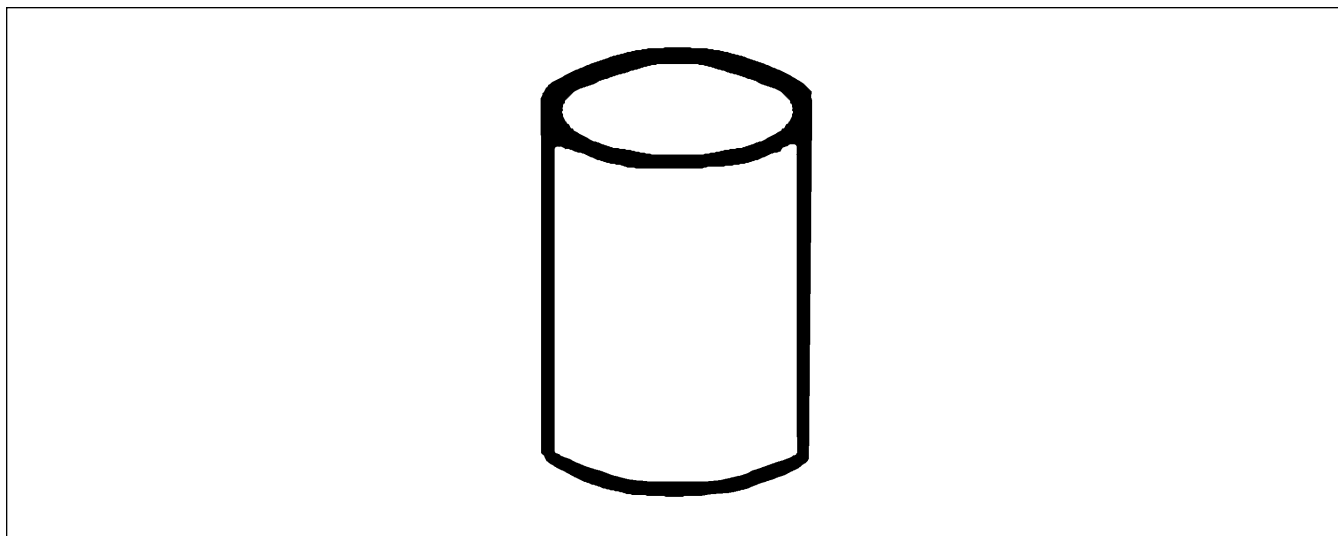
What causes frost to form on the outside of a cold container?

Procedure

1. Dry the outside of a can with a paper towel.
2. Place 3 heaping teaspoons of salt in the bottom of the can. Fill the can about half-way with crushed ice.
3. Add another 3 heaping teaspoons of salt.
4. Add more ice until the can is almost filled and add another 3 teaspoons of salt.
5. Hold the can near the top and mix the ice–salt mixture with a sturdy metal spoon for about 1 minute. Remove the spoon, and observe the outside of the can. Do not touch it yet.
6. Wait 3–5 minutes. While you wait, begin to answer the questions on the next page. When frost appears, complete question number 1.



1. Draw what you see and include descriptive captions.



Student activity sheet
Activity 6.5

Name: _____

From gas to liquid to solid (*continued*)

2. Why do you think there is frost on one part of the can and water on another part?

3. Use the terms *condense* and *freeze* to answer the question: How does water vapor become frost?

4. In the upper atmosphere, where it's colder, water vapor in the air can change. This activity can be a *model* of what happens to water vapor in the atmosphere. Models help us to understand objects or processes that cannot easily be seen. In this model, the can represents the cold temperature in the upper atmosphere and the water vapor in your classroom represents the water vapor in the atmosphere. Using this model, what do the liquid and frost on the outside of the can represent?

5. Use the terms **evaporation**, **condensation**, **freezing**, and **melting** to label the processes where matter changes from one state to another in the picture below.

