

Balloon Lab

Objective:

Demonstrate how temperature affects volume by using a balloon to measure changes in gas pressure.

Materials:

- 250 mL Erlenmeyer flask
- 8-9 inch latex balloon
- hot plate
- water
- tongs
- one-gallon bucket of ice water



SAFETY

Students should wear safety goggles and aprons. Since a hot plate is in use, students should take care to avoid contact with all hot surfaces.

Procedure:

1. Fill the Erlenmeyer flask with 25 mL of water and place it on the hot plate.
2. Stretch the balloon over the top of the flask.
3. Heat the water to boiling.
4. Observe the change in the balloon's volume as the water is heated. When enough time has passed for the change to become apparent, use tongs to carefully transfer the flask with the inflated balloon to the ice water bath.
5. Again observe the change in the balloon's volume.

Questions:

1. What happened to the balloon when the water and flask were heated? What caused this change to occur?
2. What happened to the balloon when the water and flask were cooled? What caused this change to occur?
3. Explain what happened to the balloon on a molecular level.