



Quickly invert the can boiling water into a of ice water (Station 6).

Station 6

1. Place about 10 mL of water in a clean, empty aluminum soft-drink can.
2. Place the can on a hot plate, and bring the water to a rapid boil.
3. Using tongs to handle the can, quickly remove it from the heat and immediately invert it into a container of ice-cold water. See Figure 2.

Station 7

1. Fill a test tube to the rim with water.
2. Cover the test tube opening with a piece of plastic.
3. While continuing to press the plastic to the test tube, invert the test tube and partially immerse it in a container of water.
4. Remove the piece of plastic.
5. Move the test tube up and down, keeping the opening of the test tube under water.
6. Repeat the process with the test tube half-full of water.

Station 8

1. Draw air into a syringe.
2. Seal the tip by placing the cap on the end.
3. Holding the cap in place, gently push the plunger down with your thumb.
4. Release the plunger.

Station 9

1. Inflate and tie off two unused balloons so that they are the same size—about the diameter of a small grapefruit.
2. Use tongs to submerge one inflated balloon in ice water.
3. Use tongs to submerge the other inflated balloon in hot tap water.

Questions

1. Which experiments are useful in demonstrating that air is matter? Explain.
2. Which experiments are useful in demonstrating that air exerts pressure? Explain.
3. Explain any differences between your predictions and the actual outcomes of the experiments.
4. For any two of the stations at which you performed experiments,
 - a. describe your observations in detail.
 - b. explain the role of air in the experiment.
 - c. draw particle models showing the interactions between the gas particles in air and the other particles of matter in the experiment.

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