Heat Energy

Funny Fountain

15 minutes

What You Will Do

Demonstrate the reaction of hot and cold gases.

Get it Together

- Small jar with screw-on lid
- Hammer and thick nail
- Plastic straw
- Long candle
- Match
- Hot tap water
- Large, empty coffee can
- Ice cubes
- Scissors

Procedure

1. Use the hammer and nail to make a hole in the center of the lid of the small jar. The hole should be large enough to fit the straw through it.
2. Cut the straw in half and push one piece halfway through the hole in the lid.
3. Light the candle and let it burn until the wax on top begins to melt. Drip some hot wax around the edge of the hole so it seals the straw in the lid.
4. Fill the coffee can ¾ full with water and ice cubes.
5. Fill the jar with hot water and empty it several times to thoroughly heat the jar.
6. Quickly screw the lid on the jar.
7. Place the jar, lid-side down, into the can of ice water.
8. Look underneath to see the water shoot out.

A Closer Look

A fountain of water shoots out of the straw. Hot air needs more space than the same amount of cold air. When you put the jar into the cold water, the air in the jar cooled very quickly and began to contract, thus reducing the air pressure. The air pressure on the surface of the cold water was now higher than the air pressure inside the jar, and this pressure difference then pushed the cold water up the straw and into the jar.

Attention!
Use caution when working with the hammer, matches, and scissors.