

HEATING AND COOLING WATER A

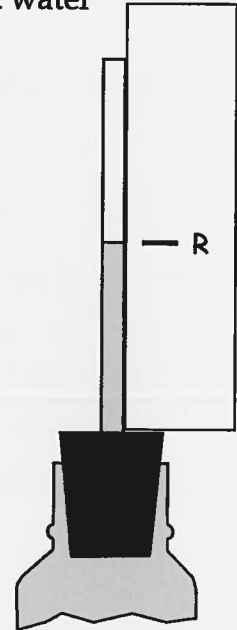
Materials for each pair

- | | |
|----------------------------------|--------------------------------------|
| 1 Glass bottle | • Tape |
| 1 Rubber stopper with clear pipe | • Blue water |
| 1 Syringe, 35-mL | 1 Large cup (500 mL) with cold water |
| 1 Squeeze pipette | 1 Large cup (500 mL) with hot water |
| 1 Card, 1" X 3" | 1 Glass thermometer |

Procedure

- Push the clear plastic pipe a short distance into the rubber stopper.
- Use a syringe to put 35 mL of blue water into the glass bottle.
- Push the stopper into the bottle as far as it will go. Use the pipette to fine-tune the water level so it is halfway up the pipe.
- Tape a 1" X 3" card to the clear tube. Label the water level "R."
- Record the starting temperatures of the cold and hot water.

Cold water _____ Hot water _____



- Place the bottle in cold water. After 3 minutes, label the water level "C."
- Move the bottle to hot water. In 5 minutes, label the water level "H."

Think about the bottle system.

- What happened when you placed your bottle system in cold water? Draw and explain.

Water in the bottle cooled and contracted. It took
up less volume, so the water moved down in the pipe.

