ACTIVITY AT HOME

PINK PALACE MUSEUM

Earth Science

Weather

THERMOMETER

Create your own thermometer to measure the temperature.

Materials

Plastic bottle
Straw
Clay
Ruler
Marker
Water
Food coloring

Why?

As water heats up, it expands and becomes less dense, causing the water to rise through the straw. As water cools down, it contracts and becomes more dense, taking up less room in the bottle and causing the water to be drawn down from the straw.

Procedure

- Make a mark on every half-centimeter of the straw.
- Fill the plastic bottle with three inches of colored water.
- Flatten a ball of clay into a disk big enough to securely cover the mouth of the bottle.
- Stick the straw through the clay disk, then clear any clay out of the inside of the straw.
- Stick the straw down into the bottle, in the water without touching the bottom.
- Mold the clay down over and around the mouth of the bottle and the straw so that it is completely airtight.
- Drop or pour more colored water into the straw until it is halfway full. If the water flows out of the straw and into the bottle, it is not airtight.
- Let the water temperature adjust to the room and mark the height of the water in the straw. This is room temperature.
- Take your thermometer outside and wait for the water temperature to adjust. (Do not place the thermometer in direct sunlight, it will give a false reading.) Note the height of the water in the straw and compare it to room temperature.

Results

When the temperature is hotter, the water level in the straw will be higher. When the weather is cooler, the water level in the straw will be lower. The water level in the bottle should not change.

This activity was adapted from the Pink Palace Museum's *Weather Whys* program.

To learn more about weather, check out the Pink Palace Museum's *Weather Whys* program.