Temperature

Materials Needed:

- Dough
- Plastic Straw
- Pipette
- Marker
- Bottle
- Food coloring
- Cooking oil
- Ruler
- Bowl

Directions to make:

Step 1: Fill the bottle with water almost to the top and add a few drops of food coloring.

Step 2: Mark your straw with two lines. One at 2 inches from the top of the straw and again at 4 inches from the same end.

Step 3: Roll your dough into a worm shape and wrap it about your straw, so that the top of the dough is level with the bottom line.

Step 4: Insert the bottom of the straw into the bottle. The straw should not touch the mouth of the bottle or the bottom. Seal the mouth of the bottle by smooshing dough around the straw so it is airtight.

Step 5: In another container, mix more water and food coloring. Using a pipette, add this colored water into the straw until it reaches the lowest line drawn.

Step 6: Add two drops of cooking oil to the straw. This will stop the water from evaporating.

Step 7: Test your thermometer out! If you place your thermometer into hot water, the water level should begin to rise. Be patient it may take a few minutes. The higher the temperature, the higher the water should rise. If you add it to cold water, the water level should fall.

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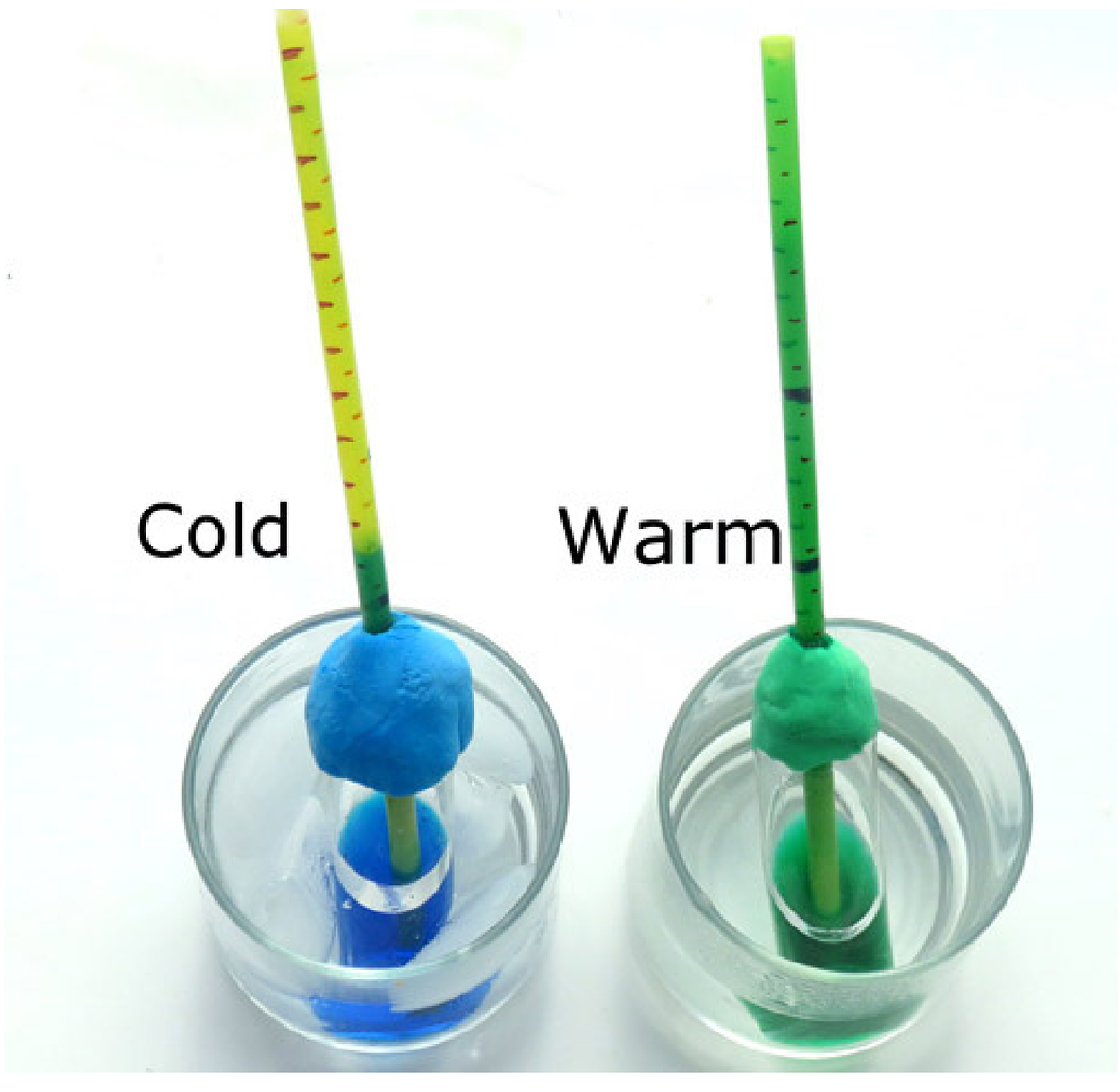
Experiment Explained

- Water is made up of tiny particles called molecules, which are always moving.
- As the temperature rises the molecules move faster and expand or grow. This causes the water to take up more space in the bottle, which raises the water level in the straw.
- As the temperature drops, the molecules move slower and shrink. This causes the water to take up less space in the bottle, which lowers the water level in the straw.



Temperature

- Temperature is how hot or cold something is.
- Everything is made of small particles called atoms. Atoms join together to form molecules, which are always moving.
- As the temperature rises, molecules move faster and expand or grow. As the temperature drops, the molecules move slower and shrink.
- Thermometers are used to measure this change.
- A liquid thermometers is a tube that is filled with a liquid that expands as it gets warmer and shrinks as it gets cooler.
- Temperature is measured in units called degrees. The two most common types of temperature scales are Celsius and Fahrenheit.
- The lowest possible temperature is called absolute zero. In degrees, this is -273.15 degrees Celsius or -459.67 degrees Fahrenheit.
- Water freezes at 32 degrees Fahrenheit and boils at 212 degrees Fahrenheit.