

Temperature and Currents

Question to Explore: How do polar and tropical climates affect ocean currents?

Materials:

Blue food color
Red food color
Very hot water
Ice water
Room temperature water
2 paper or styrofoam cups
2 pushpins
Marbles or rocks
Spoon
Ruler
Clear tub
Tray
Sheets of white paper



Read and Predict: Before you begin, read through all of the instructions and write a hypothesis and explanation in your science notebook about what will happen when the pushpins are removed from the cups.

Instructions:

1. Place the cups in the tub and add marbles or rocks to keep them in place.
2. Add room temperature water to the tub so that it is about 1 cm below the top of the cups.
3. Take the cups out of the tub. Fill one cup to the top with hot water and six drops of red food coloring, and stir carefully. Fill the other to the top with cold water and six drops of blue food coloring, and stir.
4. Stick a pushpin in each cup about 2 centimeters from the top. Leave it in!
5. Carefully put the cups back into the tub. The pins should face away from each other.
6. Get ready to watch by placing the white paper behind the tub, and moving so that the tub is at your eye level. Be ready to add water to the two cups to keep the hot and cold water near the top.
7. Then, pull out the pushpin in each cup.
8. Observe what happens and record your observations in your science notebook with notes and drawings.

Analyze and Conclude:

Answer these questions in your science notebooks:

1. What surprised you about the results of the experiment?
2. How did the results compare with your hypothesis? What do you think caused the results that you saw?
3. What is a new question you could ask about what happens when water of different temperatures meets?