

Salinity Station

Question to Explore: What is the effect of salinity on ocean currents?

Materials:

Two clear plastic water bottles
One bottle lid
Tornado tube (or duct tape)
Plastic disk
Dishtowel and tray
Water
¼ cup of salt
Food coloring
Sheet 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 you turn the bottles on their side.

Instructions:

1. Cover your tray with the dishtowel to provide a place to work, and to absorb any spilled water.
2. Before you fill them, practice connecting your bottles with the tornado tube or duct tape. Practice again, using a little water in the top bottle. Practice holding the bottles by both the base and by the neck. It is important not to squeeze them.
3. Fill both bottles with water (room temperature). Do not squeeze the bottles. Fill one to the very top, and leave about one inch of space in the other.
4. Add the salt and about 6 drops of food coloring to the bottle that has space, put the lid on, and shake it so that it is well mixed. Take the lid off and screw the tornado tube onto the bottle. Add water so that it is full to the top.
5. Press the plastic disk down onto the top of the bottle that holds the fresh, uncolored water. Hold tightly and turn the bottle upside down. Set it exactly on top of the other bottle and remove the disk carefully. Screw it into the tornado tube. (or, join the bottles with duct tape) Be sure not to squeeze the bottles.
6. Carefully lay the joined bottles on their sides on the dishtowel. Move them as little as possible. If you see water dripping, try to tighten the tornado tube or duct tape.
7. Put your eyes level with the bottle and place a piece of white paper behind them so you can see the food coloring.
8. Carefully observe what happens for at least five minutes and work together to record your observations with notes and drawings.

Analyze and Conclude:

Use your science notebooks to answer the following:

What surprised you about the results of the experiment?

Now that you have done the experiment, what do you think about the affect of salinity on ocean currents?

What new questions do you have?

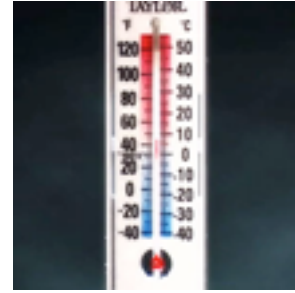
In your science notebook, write a conclusion. How did your hypothesis compare with the results?

Temperature Station

Question to Explore: What the effect of salinity on ocean currents?

Materials:

- Two clear plastic water bottles
- One bottle lid
- Tornado tube (or duct tape)
- Plastic disk
- Dish Towel and tray
- Hot tap water (100-110 degrees F)
- Ice cold (refrigerated) water
- Food coloring
- Sheet of White paper



Read and Predict: Before you begin, read through all of the instructions and write a hypothesis about what will happen when you turn the bottles on their side. Record the hypothesis in your science notebook and give reasons.

Instructions:

- 1) Cover your tray with the dish towel to provide a place to work, in case you spill water.
- 2) Before you fill them, practice connecting your bottles with the tornado tube or duct tape. Practice again, using a little water in the top bottle. Practice holding the bottles by the base and by the neck so that you won't accidentally squeeze them.
- 3) Fill one bottle to the very top with very hot tap water Do not squeeze the bottle. Screw the tornado tube onto the top.
- 4) Fill the other bottle almost to the top with ice cold water Add about 6 drops of food coloring to the bottle, put the lid on, and shake it so that it is well mixed. Take the lid off. Add icy water so that it is full to the top.
- 5) Press the plastic disk down onto the top of the bottle that holds the fresh, uncolored water Hold it tightly and turn the bottle upside down. Set it exactly on top of the other bottle and remove the disk carefully. Screw it into the tornado tube. (or, join the bottles with duct tape) Be sure not to squeeze the bottles.
- 6) Carefully lay the joined bottles on their sides on the dish towel. Move them as little as possible. If you see water dripping, try to tighten the tornado tube or duct tape.
- 7) Put your eyes level with the bottle and place a piece of white paper behind them so you can see the food coloring.
- 8) Carefully observe what happens for at least five minutes and work together to record your observations with notes and drawings.

Analyze and Conclude:

Use your science notebooks to answer the following:

- a) What surprised you about the results of the experiment?

b) Now that you have done the experiment, what do you think about the affect of temperature on ocean currents?

c) What new questions do you have?

10) In your science notebook, write a conclusion. How did your hypothesis compare with the results?