

Name _____

Water Temperature and Salinity Experiment

Question

Do bodies of water contain different layers? If so, what creates these layers?

Write your hypothesis.

Materials

Two clear glass test tubes (a clear flower vase or a very narrow glass will work as well), cups or glasses for mixing, tablespoons, water at different temperatures (hot and cold), table salt, and yellow and blue food coloring.

Procedure - Preparing the Materials

1. Prepare the saltwater by mixing 2-3 tablespoons of salt with cold tap water in an large glass or cup. This saltwater will be not be colored (clear).
2. Prepare hot saltwater as above using hot tap water and add a few drops of blue food coloring.
3. Prepare hot freshwater using hot tap water and add a few drops of yellow food coloring.

Procedure - Water in the Estuary

1. Add the cold saltwater to the narrow test tube or vase.
2. Tilt the tube at an angle and carefully pour the yellow warmer freshwater down the side of the tube and let stand.

Procedure - Water Layers in the Ocean

1. Add the cold saltwater to the other narrow test tube or vase.
2. Tilt the tube at an angle and carefully pour the blue warmer saltwater down the side of the tube and let stand.

Observe

What can you tell by the layers you see?

Estuary Observations	Color	Temperature	Salinity
Upper Layer	_____	_____	_____
Bottom Layer	_____	_____	_____

Ocean Observations	Color	Temperature
Upper Layer	_____	_____
Bottom Layer	_____	_____

Evaluate

Why do you think the layers are as you observe them? Why do you think the layers form?

Enrichment

Try putting some oil into the test tubes. What happens? What does this show you? Stir it up and leave the oil for several days. What happens?

Extension

Hypothesize what is different about plants and animals in an estuary when compared with freshwater lakes and rivers or the ocean.

Personal experience

Have you ever been swimming in the ocean and fresh water? Tell about the differences.
