Exploring Salinity

Duration
20min

Materials
Paper cups
Paper clips
Salt~3 cups
Measuring cup
Warm water
Timer (with seconds)
Hydrometer (may purchase at pet store)

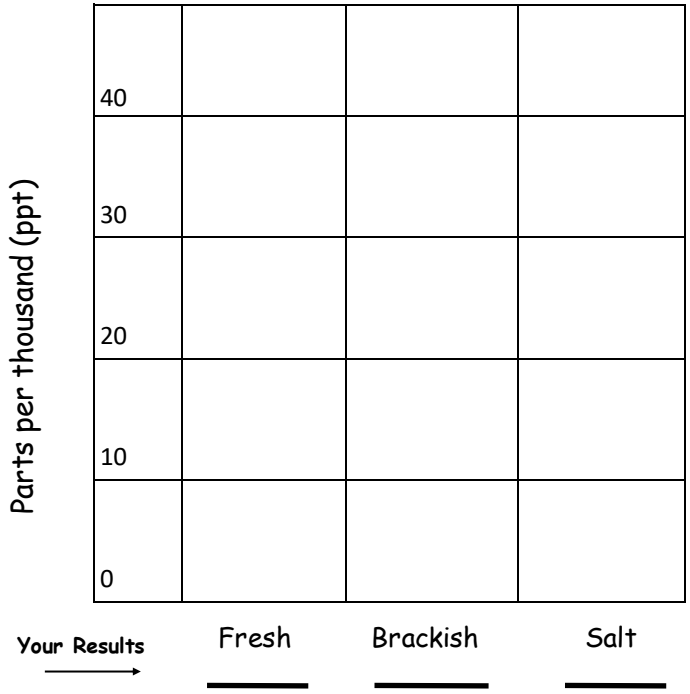
Salinity measures he total amount of dissolved salts, indicated in parts per thousand (ppt), contained in the water sample. PPT refers to the ratio of salt to water. Fresh (distilled) water has a salinity of 0.0 ppt. Seawater in the Gulf of Mexico will have a salinity of 28.0 - 32.0 ppt. The world's ocean's average 35.0 ppt. Estuaries contain a constantly changing mixture of fresh and salt water called brackish. If there is a lot of rain, salinity decreases. During the dry season salinity typically increases. Other factors that affect salinity can be tides, and the operation of water control structures on

Lab Activity

In this lab students will investigate salinity and how it is measured.

1. Set up 3 stations each with 1 cup of water, 2 empty cups, 1 cup of salt and 1 paperclip straightened.
2. Each station will represent a different type of water, fresh (5ppt), brackish (20ppt) and salt (35ppt)
3. Using the paperclip, ask student to carefully punch the number of holes through the bottom of the empty cup for that station. The holes represent the number of parts per thousand in the salinity ratio.
4. Have student position the cup with holes above the cup with water. Hold this cup very still to get accurate results.
5. Quickly pour all the salt into the cup with holes and begin timing.
6. Allow the salt to flow into the water for 10 secs., and quickly remove the salt cup setting it in an empty cup to avoid a mess.
7. Gently swirl cup with water to dissolve the salt and observe if there is any changes.
8. Show students the hydrometer that they will be using to measure salinity and explain how it functions. The level moves based on the weight of the water, the saltier the water the heavier it is. Make sure that students read the number with ppt units.
9. Test the salinity of each sample, then record the salinity for each sta-

Worksheet



Where Fresh Water & Salt Water Mix

What did you observe when the fresh and salt waters mixed?

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What naturally might affect the salinity in the estuary?

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