

Summer at the Library 2022

MAKE WAVES



Grades K-2

What Floats Your Boat?

Dive into a classic buoyancy experiment! Explore fresh and saltwater density by testing different objects in containers of water and consider the implications of salinity (how much salt content is in the water) on the rivers of New York!

What will you learn?

- Saltwater has a higher density than freshwater
- Less dense matter will sit atop (float above) more dense matter

Materials:

- Water
- Salt
- 2 containers, trays or bowls
- A variety of objects with which to experiment: origami boat, shells, household objects, etc
- Optional: Paper and pencil for taking notes
- Optional: Pipette for further experimenting
- Optional: Food coloring

Instructions:

- Think about water! Where do you find freshwater? Saltwater?
- Get started! Fill each of your containers with water.
- Add A LOT of salt to one container to ensure a high level of salinity, or saltiness.
- Test objects first in freshwater, then saltwater. Did your objects float in one type of water, neither, or both?
- Optional: If you're using a pencil and paper to take notes, jot down your observations.



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- Optional: To see the density of saltwater in action, use food coloring to tint your saltwater. Then use a pipette to add drops of saltwater to your bowl of freshwater. What happens?

Reflection Questions:

- What objects floated in the freshwater but did not float in the saltwater? Why do you think that is?
- What do you notice about the objects that float in freshwater? The objects that float in saltwater?
- What objects floated in both types of water?
- What might freshwater mean for our waterways? Saltwater?

Explanation:

This activity explores water density, but you might ask, what is density? Density refers to the amount of space a particular substance (like water) has in a container or place. In this case, we explored how much space freshwater and saltwater molecules took up in the containers. Freshwater molecules take up less space, which means it is **less dense** than saltwater. The addition of salt to freshwater makes the molecules take up more space in our container, which means it is easier to float objects in saltwater. There are, however, plenty of objects that float in freshwater!

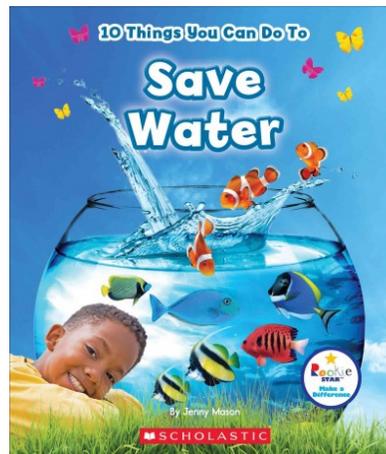
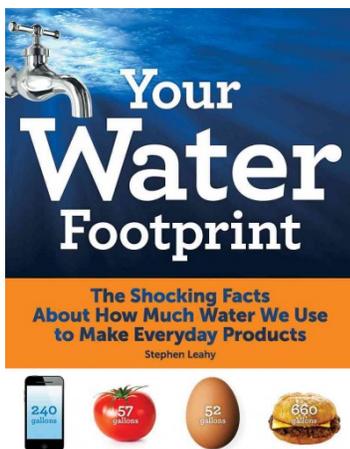
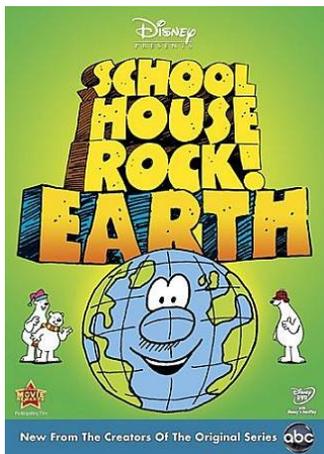
Even people can float in very dense saltwater! The Dead Sea is a salt lake near Jordan and is almost 10 times saltier than the ocean. That makes swimming in the Dead Sea almost like floating! Unlike the Dead Sea, most rivers consist of freshwater. The Hudson and East Rivers of New York City are actually not rivers at all - they're part of an estuary! That means they are made up of a mix of freshwater and saltwater and mark a place where a river meets the ocean. This mix is often called 'brackish water' which means that it's saltier than freshwater but doesn't have as high of a salinity content as seawater. This activity would be a great companion to the Water Scavenger Hunt!



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More to Explore at the Library:

The titles below are a fascinating way to explore water both salty and fresh. No matter what, we can all pitch in to do more and save water!



Guide by Alexandria Abenshon.