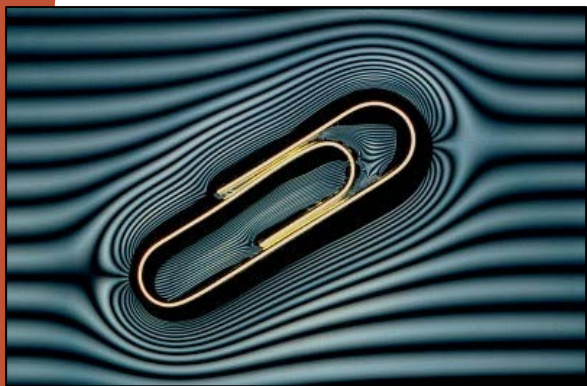


15 - 20
Minute
Activity
For
Everyone

Can Paperclips Float?

Have you ever wondered how water striders and different aquatic bugs can walk across water? Engineers continue to study water in hopes to deepen their understanding of its unique properties. Water molecules are different than other liquids, building close bonds with each other, creating a significant amount of surface tension. This is how water striders and other aquatic bugs can walk across the water's surface without getting wet. Here is an activity for you and your family to experiment with surface tension, expanding your perspective.



Why does dish soap change the experiment?

Dish soap, laundry detergent and shampoo are all types of surfactants. A surfactant is a compound that lowers surface tension between two liquids, gases or solids. A surfactant is a natural compound that can attach to both water and oil molecules. When the surfactant or soap is added to the water, the water molecules attach to the surfactant breaking their bonds and releasing the water's surface tension.

Reflection Questions:

- Were you surprised by this experiment? Why?
- How did you feel when the paperclip began to float on the water's surface?
- What can we learn from this experiment?
- How can you continue to challenge other assumptions you have?
- What can we take away from expanding our perspective?

Activity:

Start by collecting everything that you need for this activity.

- First, brainstorm and write down your thoughts and assumptions about what is going to happen to the paperclip throughout the activity.
- Next, taking your paperclip, carefully try to place the paperclip flat on the surface of the water, attempting to make it float. Make sure to move slowly, making small movements and releasing it very carefully.

Does your paperclip keep sinking?

- If your paperclip continues to sink after each attempt, use a square of toilet paper.
- Using a dry square of toilet paper, lay your paperclip flat in the middle of the square.
- Holding each side of the toilet paper square, lift the paperclip above the bowl of water. Slowly lower the toilet paper square with the paperclip onto the water's surface. Your paperclip should now be floating.
- Now, remove the paperclip and toilet paper square from the water.
- Add about a teaspoon of soap to the water. Try the experiment again and see if it is easier or harder for the paperclip to float on the water's surface tension.

Materials Needed:

- Metal Paperclip
- Bowl or Small Tub of Water
- Square of Toilet Paper
- Dish Soap