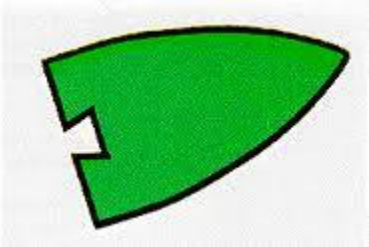
California State University of Bakersfield, Department of Chemistry

Soap power



Standard:

2-PS1-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Introduction:

Using soap to power a boat involving "surface tension." Your boat should skip across the water. Water molecules are strongly attracted to each other and stick close together, especially on the surface. This creates a strong but flexible "skin" on the water's surface that we call surface tension. Adding soap disrupts the arrangement of the water molecules and breaks the skin, making the boat go forward.

Materials:

- 1 index card
- Scissors
- A baking dish (or a sink full of water)
- Liquid dish detergent
- Your science journal

Safety:

- Always have an adult with you to help you during your experiment.
- Always wear eye protection and gloves when doing chemistry experiments

Procedure:

1. From an index card, but out a boat like this. Make it about 2 ½ inches long and 1 ½ inches wide.
2. Place the boat gently on the water in the dish.
3. Pour a little detergent into the notch in the end of the boat.

If you repeat the experiment, wash out the baking dish carefully each time you use detergent, or your boat will not move.

Data and Observations:
Record your observations in this space.

What did you see? Anything you were not expecting? Describe it here.

Questions:
How far did it go?

Did you try it with different soaps? If you did, which worked best?

References:

1. About.com. http://homeschooling.about.com/library/blsciact3.htm (7/24/2012).