

Soap Powered Boat

The Action

The boat will move due to the soap moving out of the cavity of the boat as it wants to disperse into a monolayer on the surface of the water.

Grade Level

Grade 7 - Force and Motion

Grade 9 - Fluids and Pressure

Materials

- An index card
- Scissors
- A dish or sink full of water
- Liquid dish detergent

Instructions

- Cut a boat out of the index card. It will look something like the flat surface of an iron (see picture below).
- Place the boat near the edge of the container or sink.
- Pour a small amount of detergent in the notch at the end of the boat.

Safety

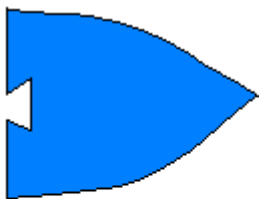
No safety concerns

Hints

Make sure, especially if the experiment is being done in a sink, that the area is clean before beginning. Placing a small crystal of camphora in the cavity of the boat will cause the reaction to occur for longer.

Science Principle

When the soap solution is placed in the notch of the boat, the soap molecules try to spread over the surface of the water. The placement of the soap in the small, 3-sided cavity of the boat means that the only way for the soap to disperse is by moving out the back. This causes the boat to move across the water. Once the soap has created an even monolayer across the surface of the water, the boat will stop moving forwards.



soap-powered
boat