

How to Make a Washing Soap Powered Boat or Fish?

Washing Soap Powered Boat is a super easy science experiment for kids to do both at home and at school with household materials. This will keep kids amused for a long time.

Time: <10min

Safety

Adult supervision.

Materials List

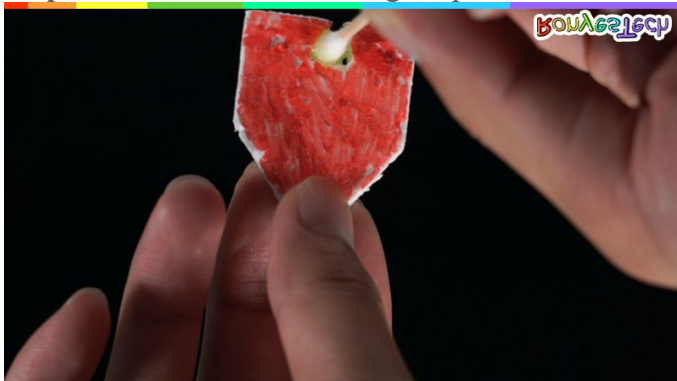
- Tray
- Washing soap
- Cotton swab
- Foam or cardboard
- Knife

Instruction

Step 1/3 – Use a knife to cut the foam into a boat or cardboard into a fish.



Step 2/3 – Stick some washing soap to the incision on the stern.



Step 3/3 – Place the boat or fish in the water and you will find that the boat is sailing.



Troubleshooting

Why is my boat or fish not moving?

— Is the boat too large or the washing is not enough. Make sure the boat is not that heavy and enough washing soap is added in the incision. When playing it several times you need to change the water.

Scientific Description

It is all about the surface tension. When the boat without washing soap stays on top of the water, the surface tension of the water is the same on all sides, so the boat doesn't move. Washing soap liquid can reduce the surface tension of the water. When you stick the incision of the boat with washing soap and put it in water, the surface tension of water reduces around the incision so the surface tension pulling the boat forward is larger than the surface tension pulling it back. It's this difference in surface tension that makes the boat sailing forward. After several times of playing, you need to change the water. The surface tension reduces with the adding of washing soap. When too much washing soap in the water, the adding of more washing soap creates a little surface tension difference, almost the same surface tension on all sides of the water. Thus, the boat may not move.

Extensions

1. What happens when we use warm water?
2. Try if you can power a aluminium boat or fish?