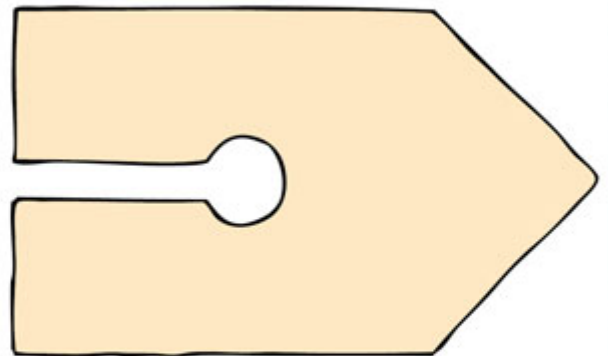


Surface tension boat

Requirements

- small piece of cardboard
- scissors
- detergent
- a kitchen sink



Cut a shape like this from firm cardboard.

This is your rocket boat!

Fill a sink with water that is absolutely free of soap or detergent.

Place the rocket on the surface of the water.

Now drip some washing up liquid into the hole in the centre of the rocket.

The rocket should shoot across the water.

This is showing the effect of surface tension. What is surface tension?

It is most easily observed on a drop of water. At the outer surface of a water drop, the cohesive forces are much stronger because on one outer side the molecules do not have any other molecules to bond to. These stronger bonds create the surface tension that holds the molecules together and forms the drop. The same force applies to the surface of water.

At the back of the rocket where the washing up liquid “escapes”, the surface tension changes but it is still unchanged elsewhere around the rocket. This force propels the rocket forward.

Problems

The sink will have to be emptied and refilled every time you run the boat!

The cardboard becomes soggy after just a few runs.

This is quite an interesting scientific operation but not so good for the environment. It may not require fuel but it does waste water and adds soapy solutions to the drains.

