

How to Make a Soap Powered Boat!

Ahoy there, sailor it's time to set sail with a super fun science experiment. Let's get started by grabbing the things you'll need!

What do I need:

- Bowl
- Washing up liquid
- Paper
- Scissors

How do I do it?

STEP 1 - First we need to build our boat! Luckily as it's going to be made out of paper this will take about 30 seconds! Cut out your boat into the rough shape, as shown. No need to be too accurate, you can experiment with different designs once you're up to speed!

STEP 2 - Fill the bowl near to the top with water and gently place your boat on top, it'll float.

STEP 3 - Cover the end of your pen (or your finger!) with washing up liquid and then touch it on the water that's right in the centre of the boat. Whoosh, your boat will fly forward!

What's going on?

This one's all to do with surface tension. When your boat is sitting on top of the water, the surface tension of the water holds it on the surface and is the same on all sides, so your boat doesn't move.

Washing up liquid has a lower surface tension. When you touch the middle incision of your boat with washing up liquid the surface tension pulling the boat back is less than the water pulling it forward. It's this difference in surface tension that makes your boat surge forward.

You'll have to change the water pretty regularly to keep sailing! Once the washing-up liquid and water are all mixed together the surface tension will again be the same on both sides and the boat won't move.

More Fun Please - Experiment like a real scientist!

- What's the best design to make your boat float the furthest?
- How many times can you 'set sail' before you have to change the water?
- Does it have to be washing-up liquid that you add? What else could you try using?
- tension than the water does and it's not enough to hold up the paperclip!

