## Look at these boats, look closely at the shape at the front of the boat, (the bow).



Our Science challenge for this week is to investigate this question: <u>Does the shape of a boat affect how quickly it moves through the</u> <u>water?</u>

Why do you think boats have different shapes and designs? Think about the purpose of the boats, what are they used for? Who needs to travel on them? How might this affect their shape, size or what they are made from? I had a think about the question above and I decided I needed to do an experiment to try and learn more.

Remember last week we learnt that if we were being good scientists, we should only change one thing...Do you remember what this was called?

If you said fair test well done.



Here is my experiment.

I used the same size pieces of foil to make each boat, the same sized sails and I tested them in the same bathtub using the same piece of stuff

to create the wind power!



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The only thing I changed was the shape of my boats I made a circular shaped boat and then a boat with a flat bow and a boat with a pointy bow.





Choose some shapes, build your boats and then make a prediction before you test them out. Which boat do you think might be quicker? Why?

You will need help to time the speed of the boats and get them moving. BE CAREFUL not to get phones too close to the water if you are using them for a stopwatch. I ended up taking my sails off as I did not have blue tac to hold them in and my sails fell into the water! I will not tell you what I discovered as I might spoil your experiment, but I had lots of fun.

## DO NOT READ THIS UNTIL AFTER YOU HAVE DONE THE EXPERIMENT

## <u>The Science</u>

Think about when you are swimming. If you want to move quickly through the water, you make yourself into a slim pointy shape.



This means you are making a slimline shape.

Things that are a slimline shape move more quickly through the water. Think about the shape of sharks, surf boards and speed boats.



This is because when something moves through the water the force and movement of the water goes against what is moving in the water. This is called water resistance.

This should help you figure out why one of your boats may have moved more quickly through the water.