



What makes a yacht go?

Fact

- Yachts move thanks to the power of wind!
- Yachts have sails that are huge sheets of material that are specially designed to catch the wind as it blows past.
- When the wind blows from behind the yacht it pushes on the sail and because the sail is connected to the yacht by the mast, the yacht moves forward.

Do you know

- When the wind hits the sail at an angle the sail curves and its special shape makes the air pressure on one side of the sail higher than the air pressure on the other side. So the sail gets pushed in a direction that's somewhere between forward and sideways.
- A yacht has a huge chunk of steel (or sometimes concrete), called a keel, that hangs down below the yacht and helps stop it from being pushed sideways through the water.
- The first sailing boats only had sails that could work with wind coming from behind the boat so they were very hard to steer.
- The curve that the wind makes in a sail is similar to the curve of an airplane wing. The curve makes the sail aerodynamic so that it can move through the air more easily.

Experiments you can do

Test air pressure | What you need:

A small glass

Water

A thin piece of card that's slightly bigger than the top of the glass

A kitchen sink (because this could make a mess)

What you do:

Fill the small glass with water so that the water comes right to the top of the glass. Hold the glass over the kitchen sink and put the thin piece of card on top. With one hand on the card holding it in place turn the glass of water upside down over the kitchen sink. Air pressure pushing against the card should hold the card in place for a while. Eventually the card will fall away (that's why you need to hold it over the sink!)

Other Investigations

Make a couple of toy boats from washed plastic meat trays. Give them both a sail with a triangle of paper taped to a straw and use a blob of blue tack or plasticine to hold the straw mast in place. Give one of the boats a keel using a triangle of cardboard or plastic from an ice cream container with a blob of blue tack or plasticine to hold it in place. Blow into the sail of both boats and see if the keel makes a difference to how the boats move through the water.

Jokes: What did the big yacht say to the little yacht? Excuse me, I've got wind.