

Land Yacht Challenge

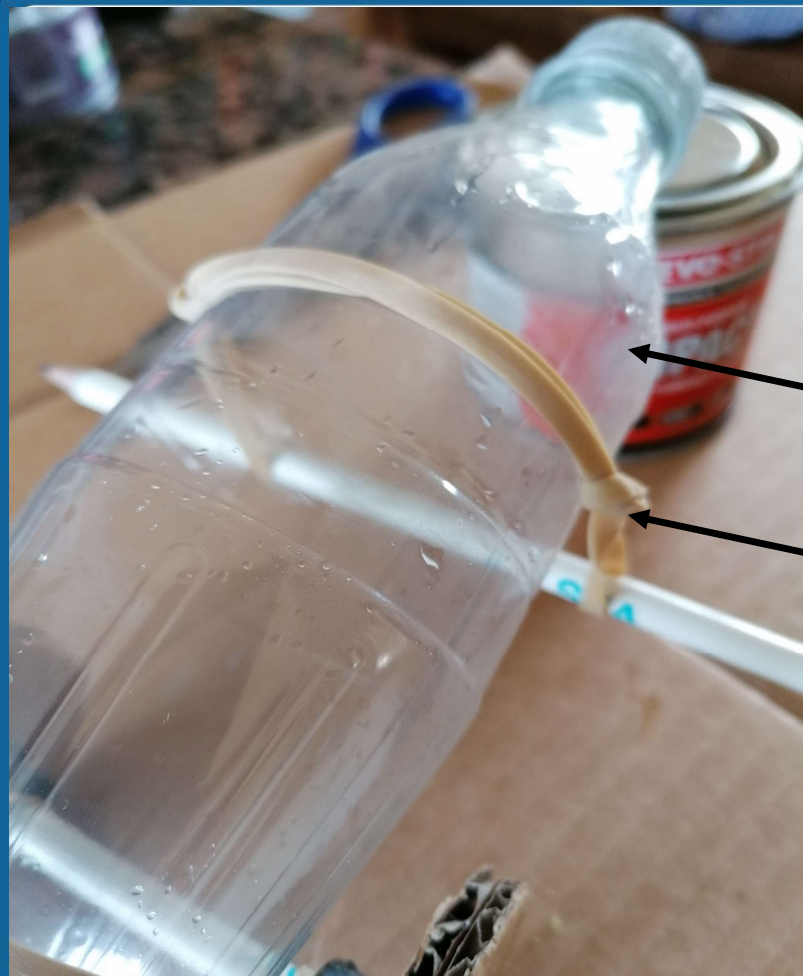


***How far and how straight
will your Land Yacht
travel on just one breath***

What you will need:

- **Plastic bottle**
- **Elastic bands**
- **2-3 pencils**
- **Cardboard**
- **Cardboard tubes** (you will make these)
- **Cardboard strips** (you will make these)
- **Skewer, knitting needle** (if you have one)
- **A4 Paper**
- **Cellotape**
- **Coins for ballast weight**

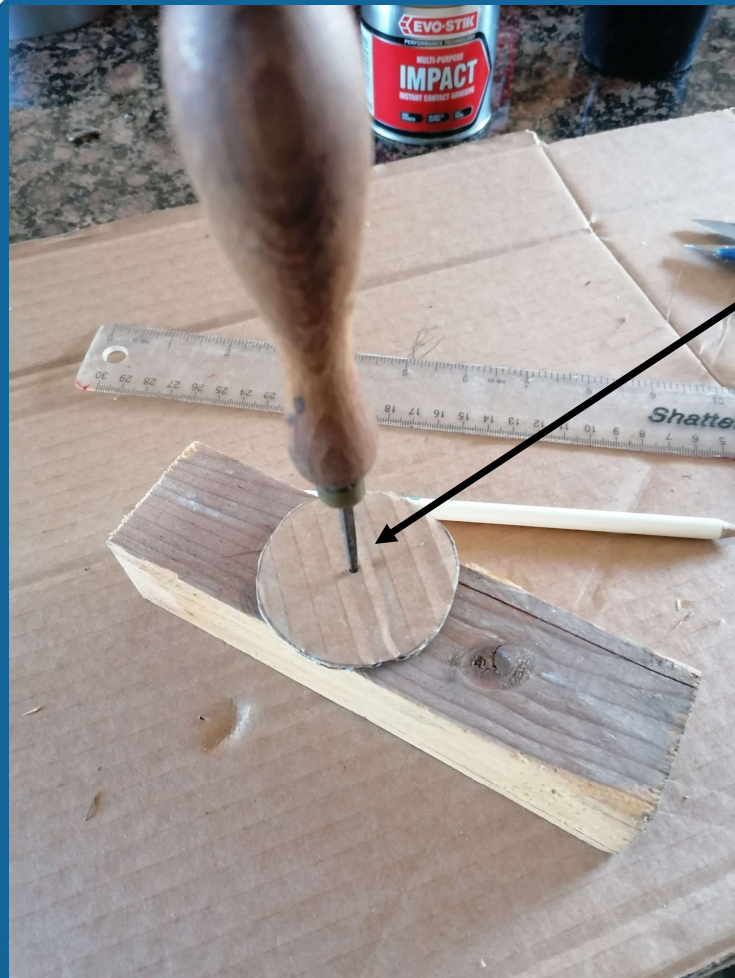




As you can see I have used a discarded coke bottle for the body of my land yacht. I secured the axles (sea cadet pencils) using rubber bands. Don't worry if your rubber bands are too long as you can tie knots in them to make them shorter.

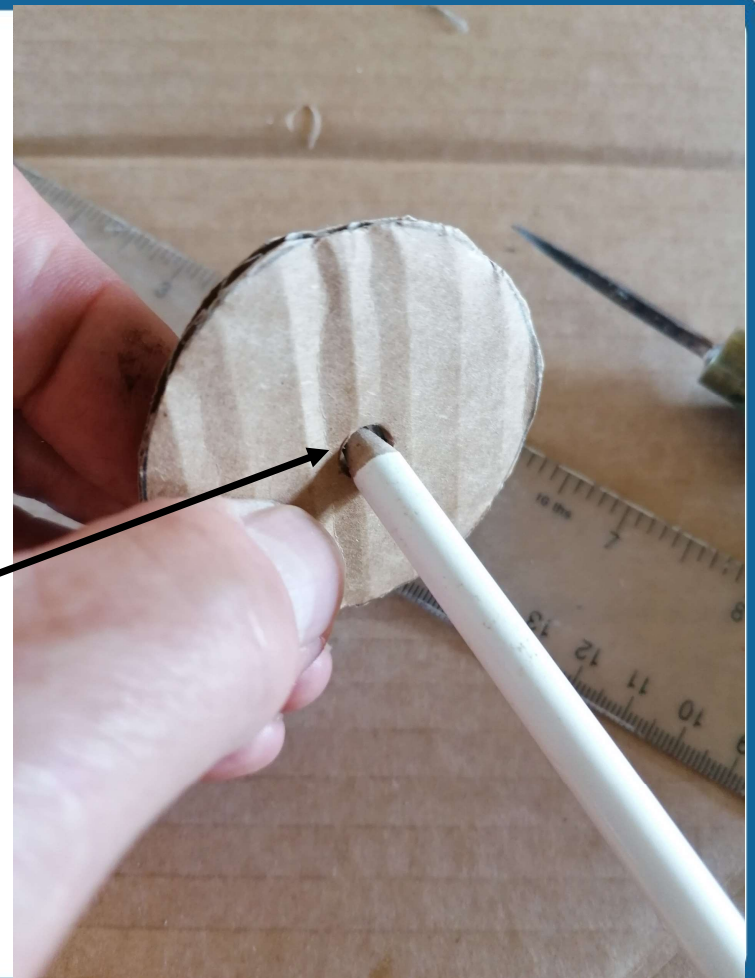


Next using something round like the bottom of a small jar mark out and cut the wheels from an old cardboard box. If the cardboard is thin you may have to glue 2 or 3 wheels together to make them strong enough to hold the weight of your yacht.



With the aid of a bradawl (you could use scissors or even a nail) and a wooden block pierce a hole in the centre of the wheel.

Then, using the sharp end carefully push a pencil through the hole formed by the bradawl. Make the hole large enough for the wheel to spin freely on the pencil





Next, fit the wheels to the axles. As you can see I have used a rubber collar on each side of the wheels to hold them in place. If you don't have a rubber collar you could make small cardboard tubes which can be cello taped into position. The collars help to keep the wheels straight, preventing your yacht from veering off to one side or the other.



All wheels and collars in place.



To fit the sail mast, take the bradawl, scissors or nail, and wooden block and pierce a hole through the bottle

Be careful not to make the hole nearest to the axles too big as you don't want your mast to slide all the way through the bottle. See next slide.



I have used a meat skewer for my mast but an old knitting needle or a pencil would do the same job.

The bottom hole must be small enough to prevent the mast from passing through thus holding it in place.





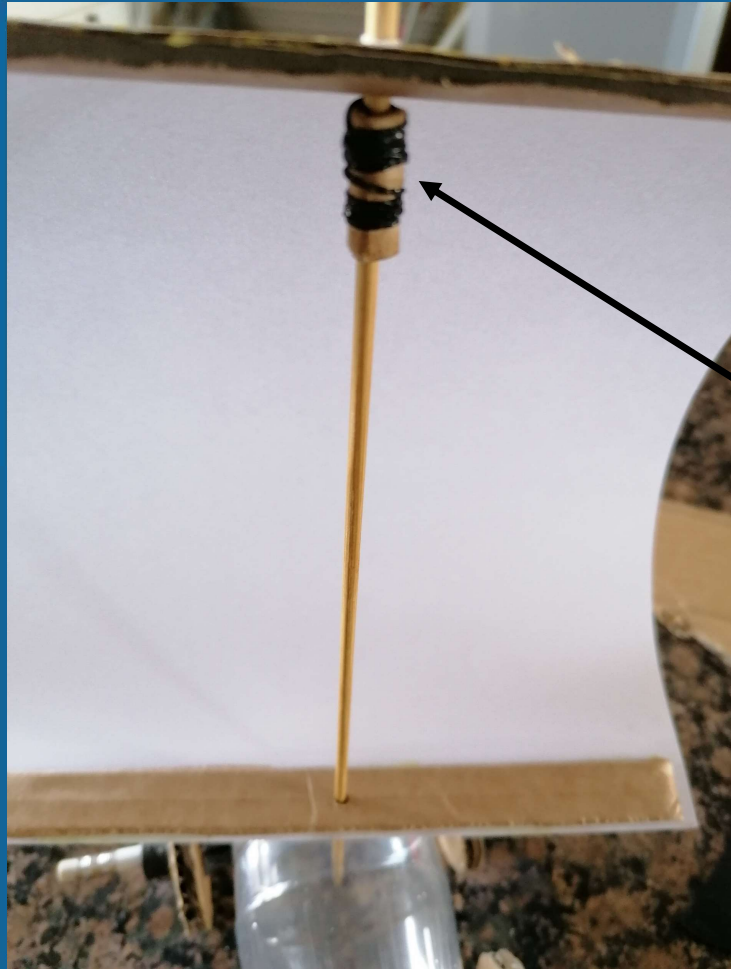
To make the sail first fix two cardboard strips to each end of an A4 sheet of paper to give the sail strengthen.

Next using the bradawl and block, pierce mast holes in the centre of the strengthening strips





Place the bottom of the sail into the position shown



To make a sail stop to hold the top of the sail in position, roll up a small strip of cardboard into a tube and fix it tightly to the mast using rubber bands or cellotape.



To prevent the sail from spinning, tape the bottom of the sail to the bottle.

You may also need to place a counter weight at the rear of your yacht to prevent the rear wheel lifting when blowing into the sail. As you can see I have used three £2 coins



TESTING

To test your land yacht place it on a long flat surface, a table top usually dose the job. Next point it in the direction you want it to travel then take a deep breath and blow into the sail.

How far did your yacht travel?

Did it travel in a straight line or veer off to one side?

Did the wheels spin freely.

What adjustments can you perform to make it travel further, faster and straighter?

Good luck but more importantly, have fun.