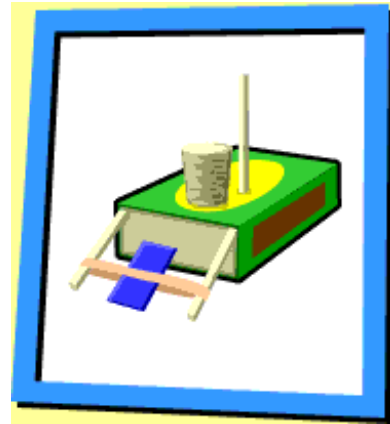




Paddle Steamer

Sometimes you'll want to travel over water, rather than over land.

So let's build a vehicle that can do just that: a matchbox paddle steamer, a vehicle that we can enter in the 'Vehicle Olympics'!



Equipment

1. Two empty matchboxes.
2. Three used wooden matches.
3. An elastic band.
4. A cork (for example from a wine bottle).
5. A pair of scissors.
6. Some paper glue (such as Copydex).

Safety Stuff

Make sure you check with an adult before you begin any of these projects, because you'll probably need their help for parts of them.

Working with items such as scissors can be dangerous, so be very careful when you use them, and make sure that you never leave them open or lying around where smaller children can reach them. When you use dangerous tools like these, always make sure you put them down in a safe place where you can easily see them. Don't lose them under your bits of paper, or fabric, or other stuff that you're working with: do that and you'll end up tripping over them or cutting yourself!

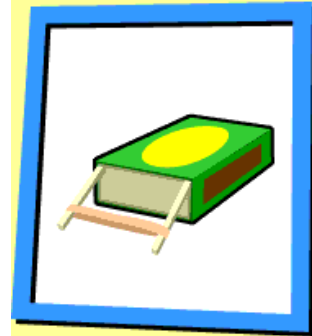
Before starting any of these projects, cover the work surface you're going to use with some newspaper or an old cloth, and make sure that you're wearing an apron or some old clothes. Gather together all the items you'll need before you begin. Most of the things you'll need can be found by simply hunting around the house, but remember to check with an adult before you take anything. Otherwise you might not be very popular!

Don't forget to tidy up afterwards and don't leave any of the vehicles lying around when you have finished making them. If any are left on the floor, other people could trip over them and injure themselves.

Steps

Step One

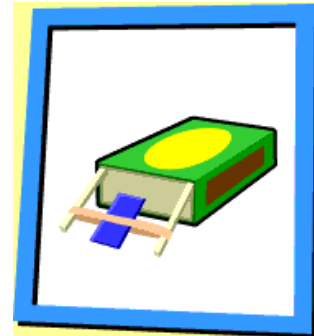
Push a matchstick into each end of one of the matchboxes. The matchsticks should be wedged firmly between the box and the tray, and need to be pointing slightly downwards. Stretch the elastic band over the ends of the two matches. If you have a long elastic band, you may need to double it over to shorten it.



Step Two

Using the scissors, cut one end from the tray of the second matchbox. This will form the paddle which will drive the completed paddle steamer.

Now slip this 'paddle' between the strands of the elastic band.

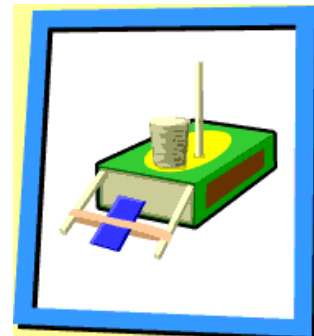


Step Three

Glue the cork and the last matchstick onto the top of the matchbox. This will form the funnel and mast for your paddle steamer, which is now ready for launching.

To wind up the paddle steamer ready to go, twist the paddle round and round in the elastic band.

Let the paddle steamer go at one end of a bath of water, and watch it move away.



Step Four

Is the matchbox you used for your paddle steamer waterproof? If not, if it is made of cardboard, for example, you may find that your steamer will sink after a while.

Can you think of a way to make the matchbox waterproof?

Your paddle steamer should work quite well, but it is not very big. Can you design and make a bigger one? You could adapt your design to make a life-sized duck, for example, that could move across the water.

Enter the Vehicle Olympics!

When you have built some vehicles you can test them to see how they perform. You could compare the vehicles you have made against each other, or you could test your vehicles against some that your friends have designed and made. The competition can be held between individuals or with small teams working on different vehicles.

Find a large open space to hold your Vehicle Olympics. For a water event you will need to find a bath or body of water, such as a small pond, that you can hold the race on. You should make sure that an adult is present if you are using an open body of water, as this can be dangerous.

Start by allowing each team to have a trial run. The teams can then have some time to carry out any improvements to the design of their vehicles.

Then hold the final race run. How far did the furthest vehicle travel? Did they all make it past a certain distance? Which vehicle travelled the fastest? Which vehicle won?

After the race, get the different teams together and see if you can think about why some of the vehicles did better than others. What improvements could you make to the various designs? Can you combine the best of each design to build a super-vehicle?