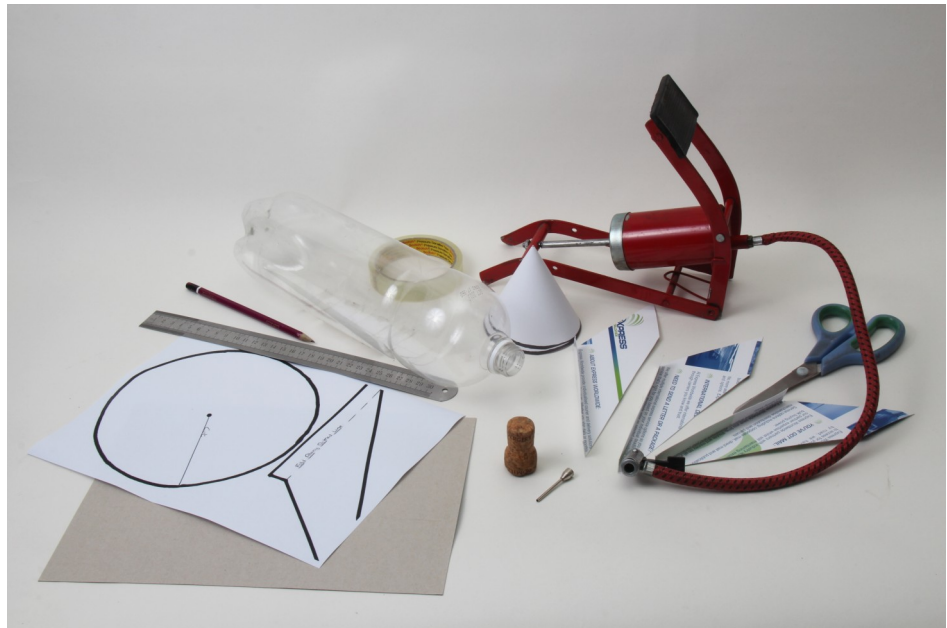


Build your own Hydro Pneumo powered Rocket

Materials

1. One empty 2 litre fizzy drinks bottle
2. Card—an old cereal packet will do
3. Bottle cork—the best corks tend to be those from bottles of cider, sparkling wine or even champagne as they tend to be wider at one end.
4. Sticky tape
5. Pencil
6. Ruler
7. Car foot pump with football pump adaptor
8. Few bricks to use as a launch pad

Materials
required to
build your
rocket



Instructions

1. Use the template attached to cut out the nose cone. Cut out the circle then cut along the solid line to the centre of the disc. Over lap the circle to form a nose cone shape that will fit neatly over the base end of the bottle. Use sticky tape to attach it to the bottle.
2. Cut out the template for the fins and use to cut out three or four fins from a stiff piece of card. Fold along the dotted line shown on the template then stick to the sides of the drinks bottle such that the tail end of the fins are lower than the neck of the bottle.
3. Push the football adaptor through the centre of the cork so that it sticks all the way through. You may need to cut the end off the cork if the cork is longer than the adaptor.
4. Push the cork into the bottle. The cork should have quite a tight fit but not too tight
5. Your rocket is now ready to launch

Launching the Rocket

1. Remove the cork with pump adaptor through it from the bottle and pour about 100ml of water into the bottle. The amount is not too critical. Then replace the cork.
2. Attach the pump adaptor to the foot pump.
3. Place your rocket in an upright position in your launch pad.
4. Start pumping on the foot pump.
5. When the pressure inside the bottle becomes greater than the force holding the cork in place your rocket will launch high into the air.

Warnings

1. Ensure the rocket is facing away from you at all times
2. Ensure the cork is not pushed in too tight otherwise the pressure e could cause the bottle to explode
3. Do not over pressurise the bottle—if in doubt leave the bottle alone for a while to let the air release slowly from the bottle
4. Always carry out the launch with adult supervision

Additional Activities

1. Before assembling the nose cone and fins decorate them to your own design
2. Experiment launching with different volumes of water
3. Vary the angle of trajectory
4. Modify the design for use with smaller bottles
5. Find out how to make a different sizes of nose cone
6. Hold a rocket party



The finished
rocket



