

Balloon Powered Car



Kit List

- Sheet of Card for making the car chassis (You can also use also make use of cardboard boxes you already have)
- 4 x Wheels
- 2 x Wooden Axles (10cm each)
- 1 x Balloon
- 2 x Drinking Straws (Compostable) – If you have paper straws these should work too.

Additionally you will need

- Scissors
- Sellotape or similar sticky tape
- Rule
- Pencil OR Felt Tip

Please take care with scissors and small parts.

Warning – Balloon Contains Latex and Adult Help Needed.

Avoid flattening the straws as this may stop the Rocket Car Working

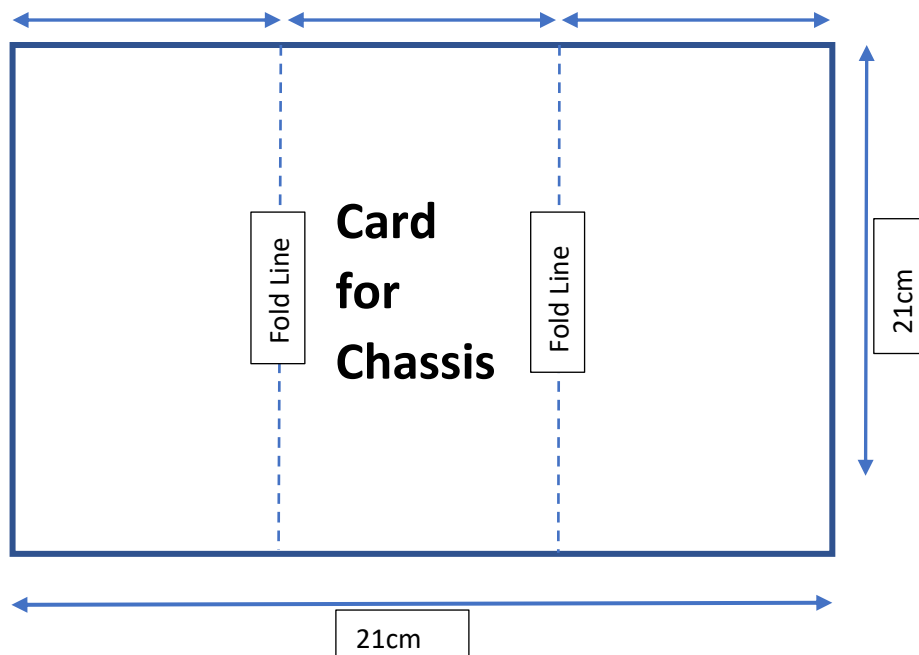
Step One

First you need to make the chassis. To do this you will use the sheet of card.

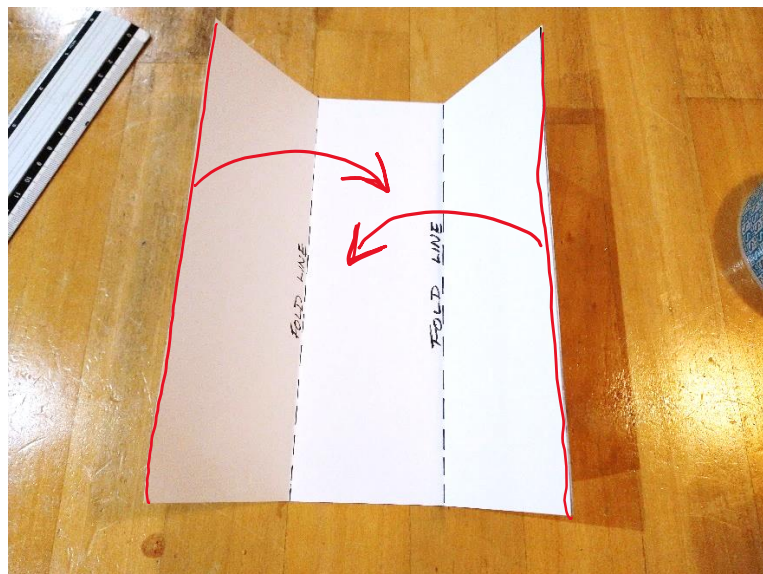
The size of the chassis should be 7 cm wide and between 21cm in length (you can make it shorter but try not to make it less than 15cm, a longer chassis will make the car more stable).

Using your Rule mark an area of card of 21cm by approximately 21cm as below and then carefully cut this out.

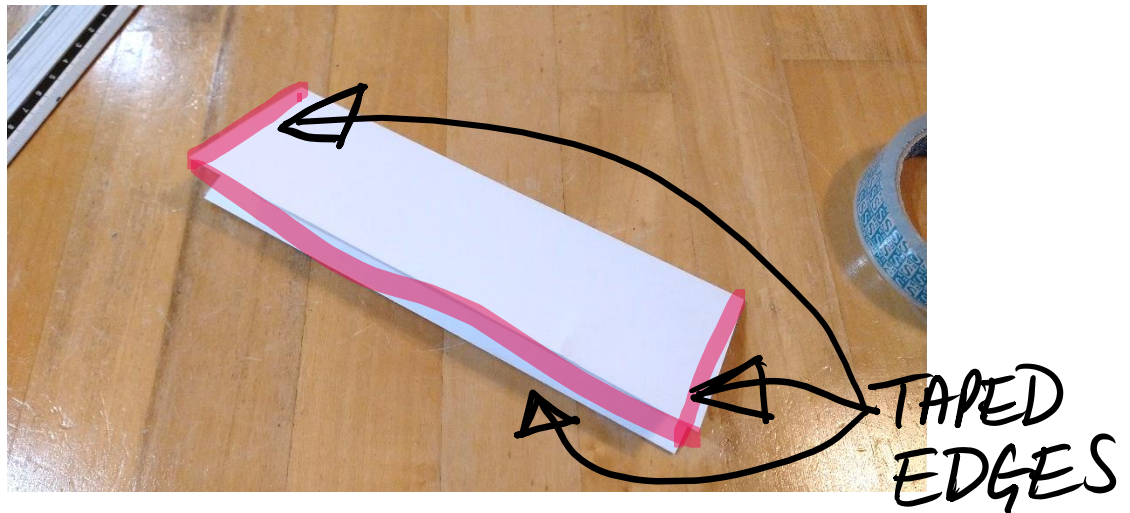
Next mark two lines at spacings of 7cm across the 21cm length as shown below.



Then carefully fold the two outer parts in towards the centre as shown.

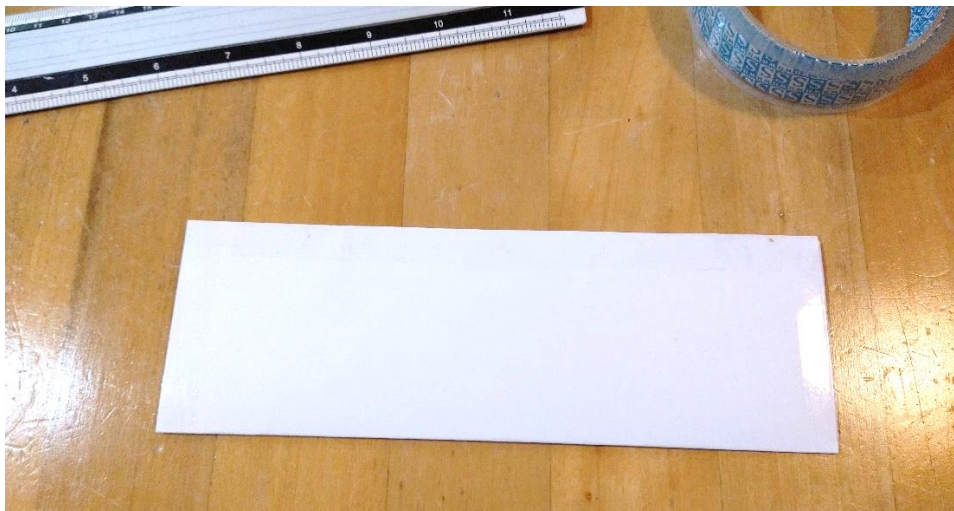


Then Sellotape along the open edges of the card, you then have the chassis.



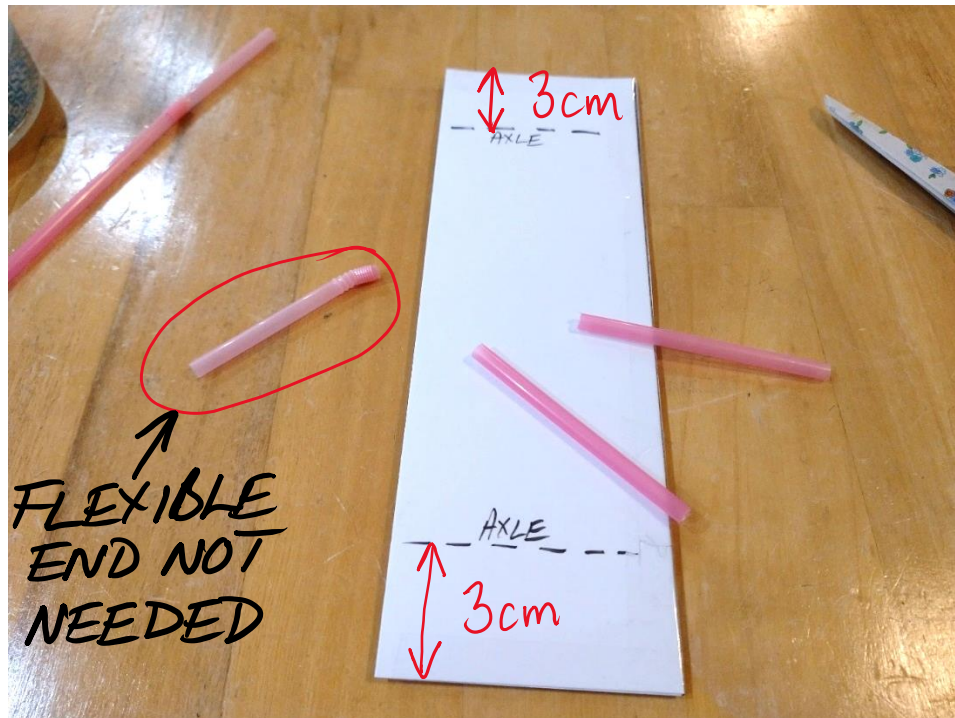
If you have some old corrugated cardboard boxes you might want to use that instead of folding the thinner card sheet. If you do then just cut a piece to 7cm wide by 21 cm in length. Try to maintain the width below 7cm but the length can be approximately 21 cm.

The chassis should look something like this:

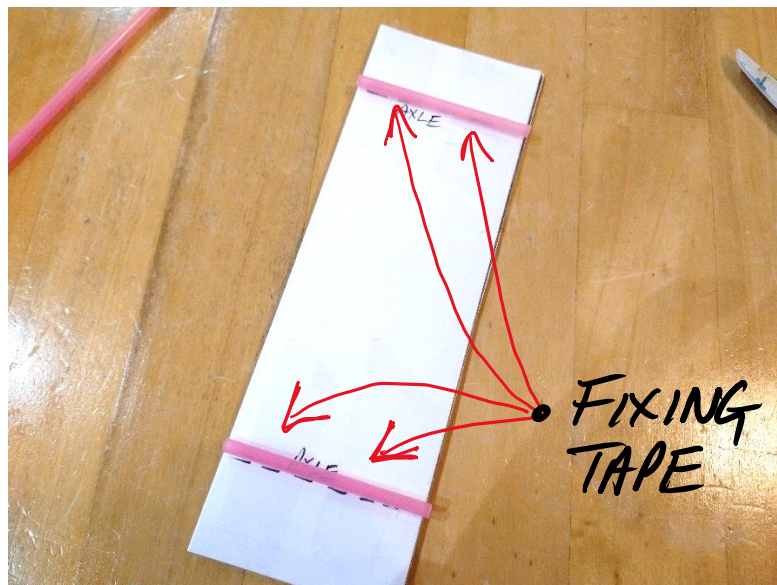


Step Two

Next you need to cut one of the straws into 7cm lengths, these are used for the axles to slide through. You should be left with two lengths of straw as below. Be careful not to flatten the straws.



You then need to fix these across the width of the chassis with Sellotape, one near the front and one near the back. It is suggested that you **do not** place them at the very front and rear though. Place them about 3cm from the front and rear. Try to make sure the straws are lined up to be across the width of the chassis rather than diagonal, this will help the car travel as straight as possible.

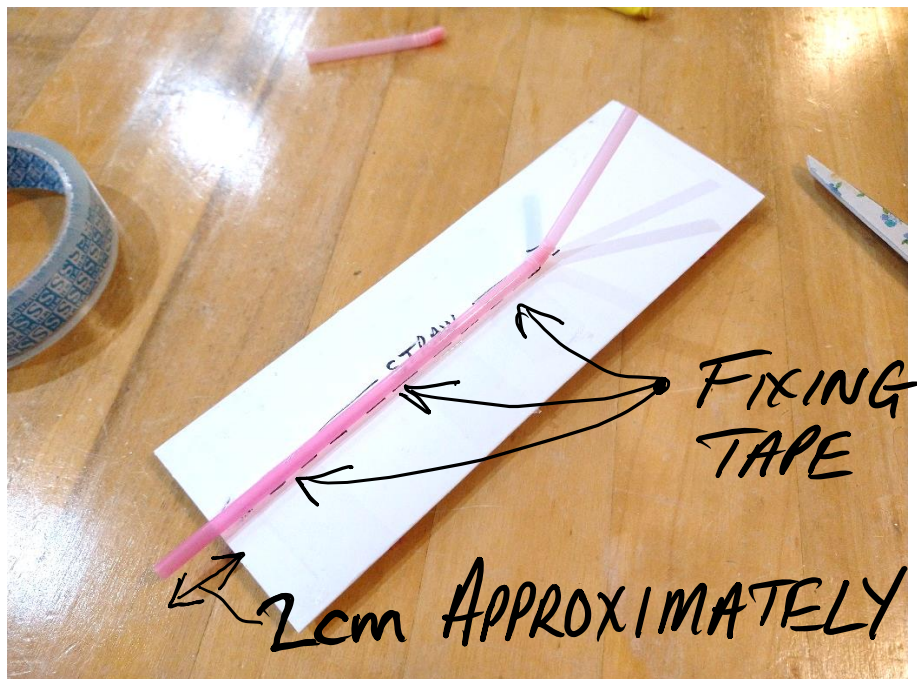


Step Three

Next you will use the other straw to fix to the other surface of the chassis running from the front to back. This is used to power the car and direct air from the balloon rearwards and provide the thrust.

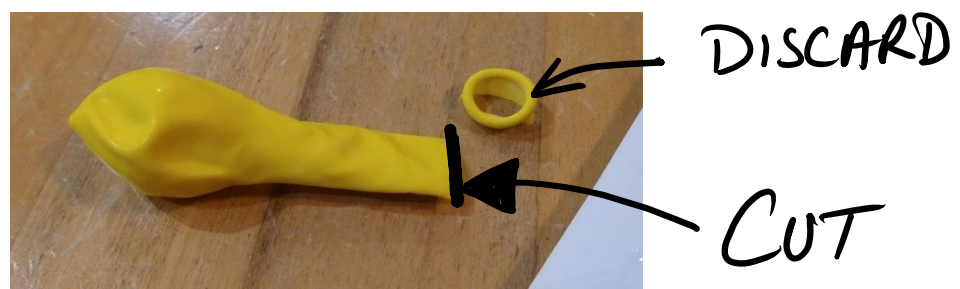
If the straw is flexible then you will locate the short flexible end towards the front of the car (the balloon will attach to this short end).

Using the Sellotape fix the straw at three locations along the length but make sure the short, flexible, end is free to be moved upwards. The other end of the straw should be approximately about 2cm behind the front of the chassis (card). Make sure that the straw overhangs the chassis by about 2cm as you will need to use this to inflate the balloon.



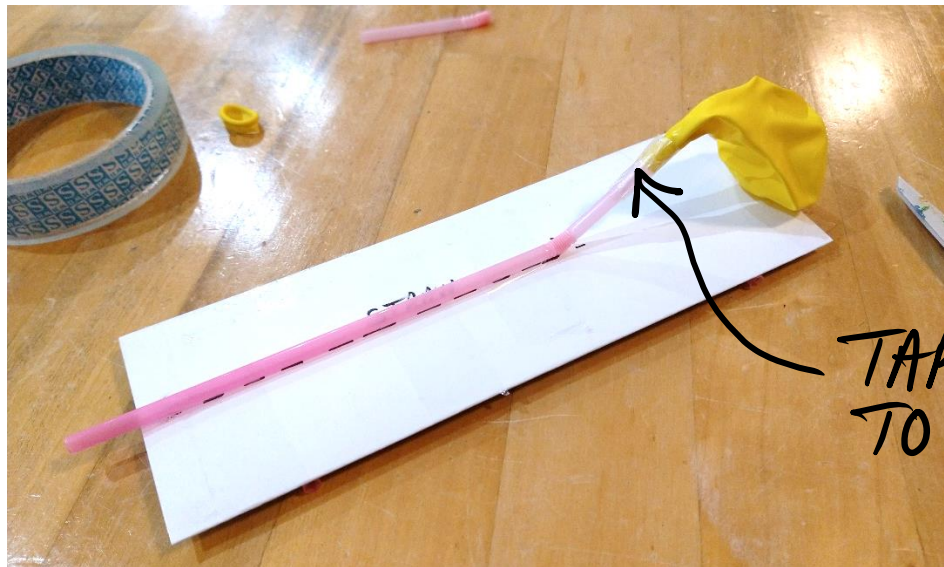
Next you need to attach the balloon to the straw. Before you fix the balloon get an adult to inflate it to make it easier to inflate when attached to the rocket car, you might also want to stretch it first too. The thrust for the car comes from the balloon and so you need to make sure the balloon is sealed around the straw to stop air leaking out easily.

Top tip is to cut the ribbed end of the balloon off using your scissors - get an adult to help here.



Place the balloon onto the flexible end of the straw and using a piece of Sellotape, seal the balloon around the straw. Make sure the Sellotape overlaps the straw and balloon to make a better seal and try to wrap the Sellotape round twice.

Check the balloon is sealed, get an adult to inflate the balloon using the open end of the straw, when inflated squeeze the balloon near just in front of the straw to stop the air exiting, then release and check the air flows out the end of the straw at the rear of the car. Re-tape the balloon if it does not inflate or leaks.



Step Four

Next you need to install the wheels and axles.

Adult help needed here – use scissors to score the axle and then snap or use some pliers to cut.

Take the axles and cut them to 10cm in length. You should have two lengths now.

Take each axle and fit a wheel onto one end.



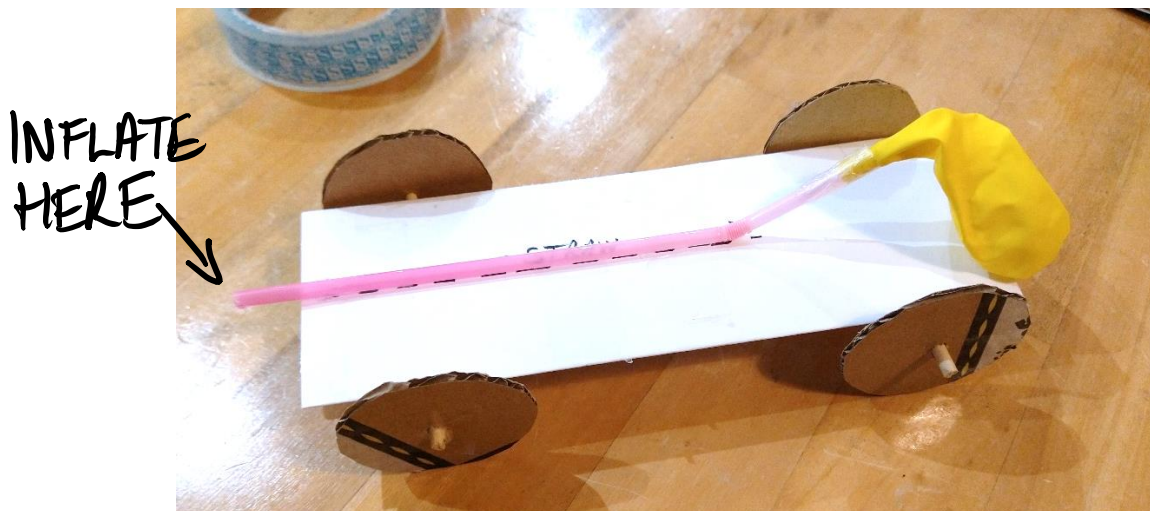
Then slide each axle through the straws on the bottom of the chassis and carefully fit the other wheel to the end of the axle.

Take care not to hurt yourself or squash the car.



Check that the wheels rotate and spin easily, make sure the wheels are not pushed tightly up to the chassis. You might need to use some tape or blutack on the end of the axle to keep the wheels on the axle.

You should now have a car that rolls along the ground.



At this stage you should be ready to launch your car.

You will need to inflate the balloon by blowing into the end of the straw. Once inflated try to seal the end of the straw to stop the air leaking, place carefully on the floor and let the power of the air jet move the car along.

If possible use a smooth floor.

ENJOY

