



Balloon Rocket

Perfect for any rainy day - whether or not you're that bothered about friction!

You will need:

- a drinking straw
- a long balloon
- about 2m of string
- a clothes peg or bulldog clip
- washing up liquid
- sticky tape
- two chairs about 2 m apart

What to do:

1. Blow up the balloon, fold the neck and put a peg or clip on it to stop the air coming out. (Warning: don't inflate the balloon yourself if you are under 8 years - ask an adult to do it for you.)
2. Thread the string through the drinking straw.
3. Tie each end of the string to two chairs placed a distance apart.
4. Make sure the string is at least 30 cm off the ground and pulled tight.
5. Pull the straw to one end of the tied string and stick the straw lengthways to the balloon using sticky tape
6. Remove the peg or clip and watch your rocket zoom away!
7. Measure how far it goes and then repeat the activity but this time RUB A LITTLE WASHING UP LIQUID ON THE STRING FIRST. Notice any difference?



What's going on:

When the air from the balloon rushes out backwards it propels the rocket forwards. If the friction between the string and the straw is high then the rocket will only go a short distance. However, if the friction is low then the rocket will go much further. The washing up liquid acts as a lubricant on the string, which lowers the friction and makes the rocket go further.

For advanced users:

Try designing a paper rocket to stick to your balloon. Remember to design a shape that will move through the air quickly. For the fastest rocket you will need an aerodynamic shape and very low friction between the straw and the string.