# Science Competition KS2

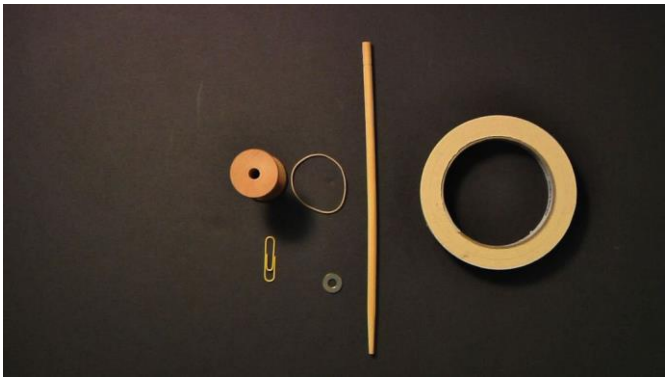
*Our theme for the Science Fair this year is 'Inventions'. During the fair we will have the Rubber Band Car Distance Challenge – How far can you make one travel? The challenge will be held during the Key Stage 2 Science Fair after school on* ***Wednesday, 4th March****. The winner will receive a Science Kit with prizes for second and third places.*

There are many ways to make a Rubber Band Car – below is one very simple version that everyone can acces but the internet has lots of different kinds any of which can be used for the competition. The more inventive the better - we ask only that **no motors or 'mousetrap motors'** are used – <u>the rubber band needs to be the main source of power</u>.

**Cotton Reel Car (sometimes called a cotton reel tank)**

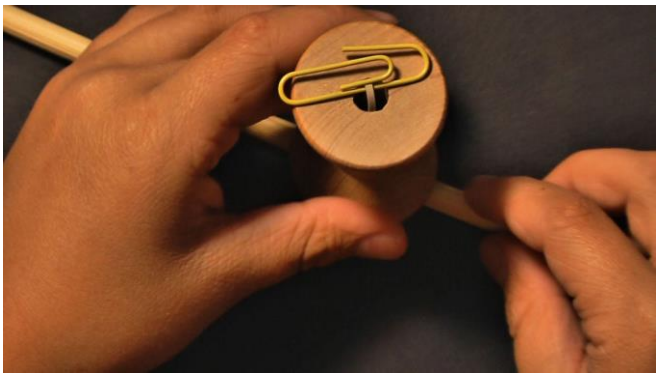
**You will need:**

- Cotton reel (available from school)
- Elastic band
- Stick eg. skewer or pencil
- 1x paper clip or matchstick
- 1x washer



**Method:**

- Use the paper clip at one end as shown (or alternatively use a match stick snapped in to a 'U' shape)
- Put the elastic band over the paper clip/matchstick and thread the band through the cotton reel.



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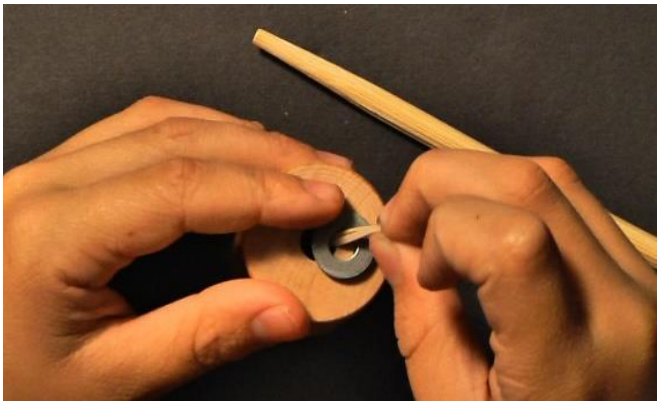
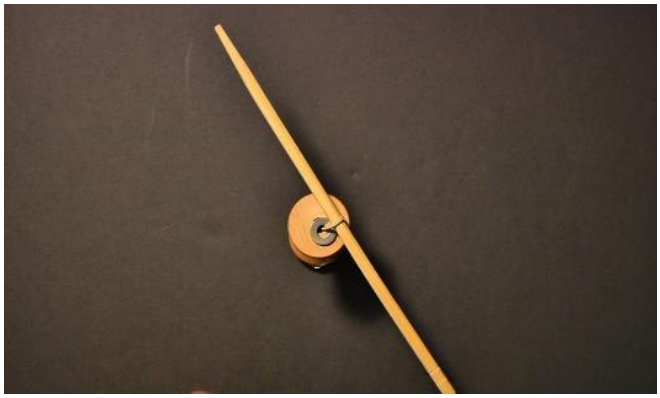
- Thread the band threw a washer and place the skewer/pencil through that end of the elastic band.



- Wind up the end of the elastic band with the skewer and let it go, watch your cotton reel move!
- If your car isn't moving, try pulling the stick away from the cotton reel to stretch the elastic band and reduce friction. The washer is important for this.



**The science bit:**

- When you wind up the elastic band it begins to store energy.
- When you let go, it starts to untwist, but because of the skewer it can't untwist fully.
- This makes the other end of the elastic band start to untwist, and because the broken match stick/paper clip is attached to the cotton reel, the reel turns with the elastic band!

This is a simple version of a cotton reel car. There are many versions of using 'rubber bands' as the main power source. Search the internet for 'rubber band racers' or 'rubber band cars' for improved designs. We also have a version available in school with instructions. Ask your teacher for a copy if you haven't got one.