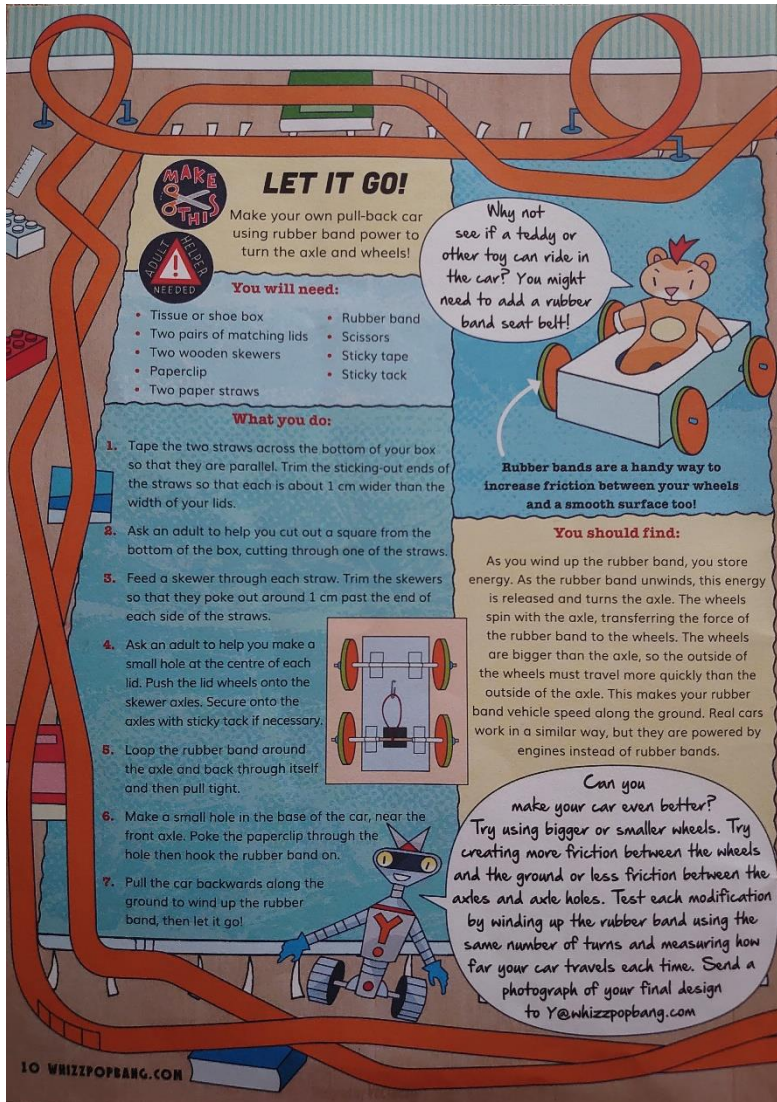


How To...

Day 12: Build a Pull-Back Car – Zooooooooooooooooooooom!

Build a pull-back car using rubber band power from the 'Wild Wheels edition of Whizz Pop Bang Magazine.

Can you make your car even better? Try using bigger or smaller wheels. Try creating more or less friction between the wheels and the ground.



MAKE IT!
ADULT HELP NEEDED

LET IT GO!
Make your own pull-back car using rubber band power to turn the axle and wheels!

You will need:

- Tissue or shoe box
- Two pairs of matching lids
- Two wooden skewers
- Paperclip
- Two paper straws
- Rubber band
- Scissors
- Sticky tape
- Sticky tack

What you do:

1. Tape the two straws across the bottom of your box so that they are parallel. Trim the sticking-out ends of the straws so that each is about 1 cm wider than the width of your lids.
2. Ask an adult to help you cut out a square from the bottom of the box, cutting through one of the straws.
3. Feed a skewer through each straw. Trim the skewers so that they poke out around 1 cm past the end of each side of the straws.
4. Ask an adult to help you make a small hole at the centre of each lid. Push the lid wheels onto the skewer axles. Secure onto the axles with sticky tack if necessary.
5. Loop the rubber band around the axle and back through itself and then pull tight.
6. Make a small hole in the base of the car, near the front axle. Poke the paperclip through the hole then hook the rubber band on.
7. Pull the car backwards along the ground to wind up the rubber band, then let it go!

Why not see if a teddy or other toy can ride in the car? You might need to add a rubber band seat belt!

Rubber bands are a handy way to increase friction between your wheels and a smooth surface too!

You should find:
As you wind up the rubber band, you store energy. As the rubber band unwinds, this energy is released and turns the axle. The wheels spin with the axle, transferring the force of the rubber band to the wheels. The wheels are bigger than the axle, so the outside of the wheels must travel more quickly than the outside of the axle. This makes your rubber band vehicle speed along the ground. Real cars work in a similar way, but they are powered by engines instead of rubber bands.

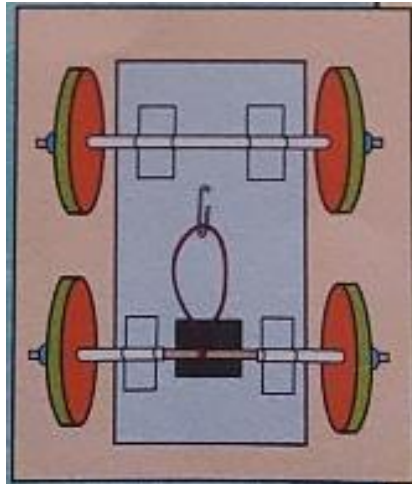
Can you make your car even better?
Try using bigger or smaller wheels. Try creating more friction between the wheels and the ground or less friction between the axles and axle holes. Test each modification by winding up the rubber band using the same number of turns and measuring how far your car travels each time. Send a photograph of your final design to Y@whizzpopbang.com

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Instructions

1. Tape two straws across the bottom of a shoe box or tissue box so that they are parallel. Trim the sticking-out ends of the straws so that each is about 1 cm wider than the width of your wheels (lids from something would work).
2. Ask an adult to help you cut out a square from the bottom of the box, cutting through one of the straws.
3. Feed a skewer (or similar) through each straw. Trim the skewers so that they poke out around 1 cm past the end of each side of the straws.
4. Ask an adult to help you make a small hole at the centre of each lid. Push the wheels onto the skewer axles. Secure onto the axles with sticky tack if necessary.

5. Loop the rubber band around the axle and back through itself and then pull tight.
6. Make a small hole in the base of the car, near the front axle. Poke the paperclip through the hole then hook the rubber band on.
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