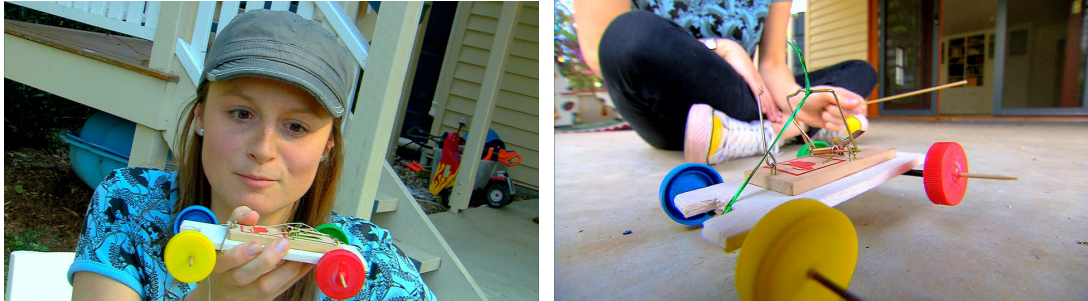


Activity: Mouse Trap Car

On SCOPE's Things that... are on wheels episode, you saw Julia make a car, powered by a mouse trap!

There are many different ways of making a mouse trap car. Use whatever you can find around your house and experiment with different designs. This is how Julia did it:

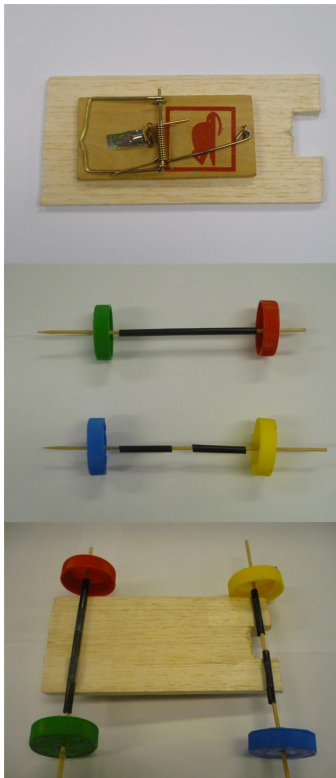


****Be extra careful when setting up mouse traps. Young scientists will need an adult to help.**

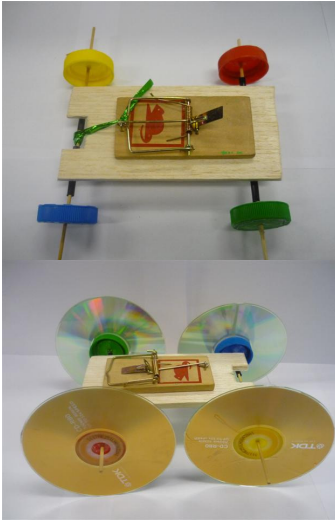
What you need:

- 4 bottle tops
- 3 skewers
- 2 straws
- Super glue
- Balsa wood
- Scissors
- Sticky tape
- Ribbon
- Modelling clay
- Balloons
- 4 old CDs

What to do:



1. Cut a piece of balsa wood into a rectangle about 16cm x 7cm.
2. Cut a rectangle at one end of the balsa wood about 2cm x 3cm.
3. Glue the mouse trap to the middle of the piece of balsa wood, making sure it is facing the correct way (see diagram).
4. To make the wheels, first use a skewer to make a hole in the middle of each bottle top.
5. For the front wheels, slide a bottle top onto one end of a skewer, making sure the top of the bottle top is facing outwards, and stick in place with super glue.
6. Cut a straw into a length of 10cm and slide it onto the skewer.
7. Slide another bottle top onto the other end of the skewer, making sure the top of the bottle top is facing outwards, and stick in place with super glue.
8. For the back wheels, slide a bottle top onto one end of a skewer, making sure the top of the bottle top is facing outwards, and stick in place with super glue.
9. Cut a straw into two 4cm lengths, and then slide them both onto the skewer.
10. Slide another bottle top onto the other end of the skewer, making sure the top of the bottle top is facing outwards, and stick in place with super glue.
11. Using sticky tape, attach the straw part of the wheels to the underside of the balsa wood, making sure they are in the correct



- position (see diagram).
12. Cut a piece of ribbon about 25cm long.
 13. Attach one end of the ribbon to the arm of the trap and using sticky tape, attach the other end of the ribbon to the skewer on the back wheels.
 14. Set up the trap. Be VERY careful with this part!
 15. Wind the ribbon around the skewer, by turning the back wheels, so it is really tight.
 16. Find a flat, open space to test out your car.
 17. Carefully set off the trap using a skewer. Make sure the skewer doesn't get caught in the trap!
 18. If the wheels spin on the spot, add some weight to the car, e.g. modelling clay.
 19. To help the wheels grip the surface, you can cut the neck off a balloon and wrap it around each wheel.
 20. To make bigger wheels you can even stick CDs to each bottle top!

What's happening?

This self-powered vehicle works thanks to the conversion of energy. When you set up the trap, the spring is stretched and you have stored energy. Then, when you attach the piece of ribbon, wind it up and set off the trap, the movement of the trap forces the ribbon to unwind which spins the wheels of the car. In other words, the energy from the mouse trap is transferred to the wheels.

By wrapping the balloons around the bottle tops, you are adding traction to the wheels, which helps the car grip to the surface.

When the wheels are small, each time they spin, they don't go very far. By adding the CDs, the same amount of energy from the mouse trap will spin the wheels the same number of times, but because the wheels are much bigger, the car will move much further!

