



“Stare at spectrUM’s logo for 30 seconds and then look away to a blank wall. What do you see? The colors are reversed because of something called afterimage. **Pretty cool, huh?**”



Rubber Band Car

GRADE 6-8

Create a car using a rubber band and cardboard tube that travels fast and far.



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Rubber Band Car



What You Need:

- Rubber band
- Two lids with center holes
- Paper Clip
- Pony bead
- Cardboard tube (not provided)
- Straw



Try it

- 1. Push** the rubber band through a hole in one of the lids and attach the paper clip to the end of the rubber band.



- 2. Pull** the rubber band through the cardboard tube so that the lid with the paper clip is stuck to one side.



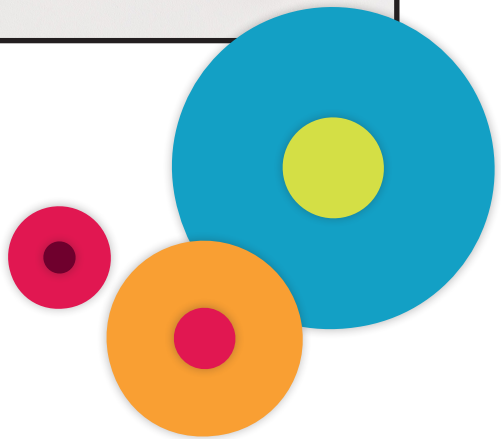
- 3. Add** the other lid to the opposite side of the tube and pull the rubber band through the hole in the lid. Keep holding onto the rubber band!



- 4. String** the pony bead onto the rubber band end that is not attached to the paper clip. Then push the straw through the loop at the end of the rubber band.

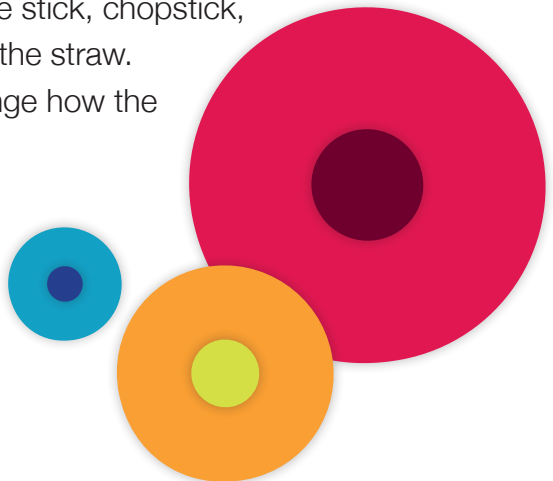


5. **Launch** your car by spinning the straw around a bunch of times, then set it on the ground and let go of the straw. How far does it go?



Experiment with different designs for the car, or add pieces to it to change how it rolls. Try some of these ideas to see what happens!

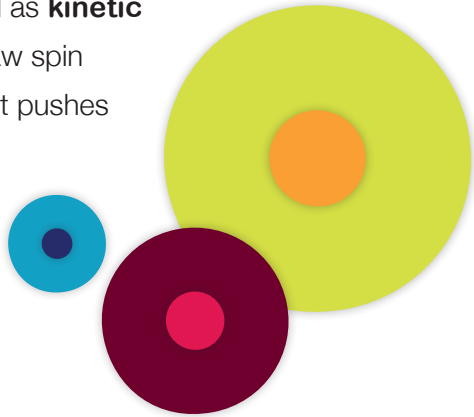
- What would happen if you added some other sized lids as wheels for your car?
- Try adding a second rubber band tied onto your first - does your car go further or faster?
- Will it go up a small incline or hill?
- Does it go straight or pull to one side - how can you change where it goes?
- How does it roll differently on different surfaces (carpet vs. a smooth floor vs. outside on rocky ground)?
- What happens if you make the straw longer or shorter?
- Substitute a popsicle stick, chopstick, or plastic spoon for the straw. How does that change how the car moves?



What's going on here?

When you spin the straw around, the paper clip on the opposite side of the cardboard tube holds that end of the rubber band in place (if it doesn't try adding a piece of tape or hot glue to secure it). The rubber band twists inside of the cardboard tube.

Rubber bands are **elastic**, and when you spin them around with one end secured they turn into a spiral. This stores **potential energy**. When they twist back to return to their original, circular shape the energy is released as **kinetic energy**. This makes the straw spin around. As the straw spins, it pushes the car along the ground.



For more information on designs to try, questions to think about, and examples see our Instructable at [tinyurl.com/rubberbandtube](https://www.tinyurl.com/rubberbandtube) or scan this QR code:



Directions

spectrUM Discovery Area is located on the Children's Floor of the new Missoula Public Library at 455 East Main Street, in downtown Missoula.



Science. Try it.

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