

REVIEW

Review the past weeks lesson. Here are some questions to ask:

- What did you guys learn last week?
- What is a chassis?
- What makes a chassis strong?

A rubber band powered car gets its power all from the rubber band.

Elastic Potential Energy- The rubber band has this when it is wound up. This is known as stored energy because nothing is in motion yet. Once you let go, this energy is known as Kinetic Energy.

Kinetic Energy - Energy in motion.

The transfer from Potential to Kinetic Energy is known as the **1st Law of Thermodynamics** which states that energy can not be created or destroyed but can be transferred from one form to another.

Hint: If you want your car to go faster or further, then it needs more potential energy and you have to find away to transfer the energy to the wheels to propel the car forwards.

Engineering with Legos : Catapults & Trebuchets

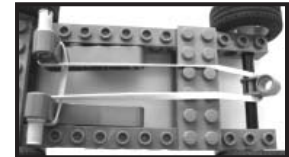
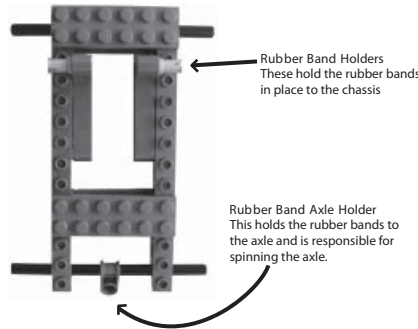
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Race Cars 101: Rubber Band Powered Cars

Building the chassis

Rubber band cars can be designed many different ways. Here is one of the simplest ones that you can build. Make sure you know how to build this basic car before building a more complex one.



To make the car go, start turning the wheels and wind the rubber band around the axle. Once you let go, the wheels will spin, so make sure you hold onto them until you are ready!

Rubber bands have "Elastic Potential Energy" when it is wound around the axle and held in place. This is also known as stored energy. Once you let go of the rubber band, elastic potential energy gets turned into kinetic energy, and this makes the car move! Kinetic energy is energy in motion. Hint: the more elastic potential energy you have, the faster the wheels will spin. But make sure you are able to transfer all that energy into making the car go forward. Too much energy and the wheels might just spin in place!



Optional rubber band stopper
This prevents the rubber band from coming off the vehicle and makes it easier to put it back around the axle.



Don't forget to add your own engineering style! What kind of different designs can you come up with?

Challenge 1 - Individual or team of 2 build

5 foot challenge- Design a car that can go 5 feet

Challenge 2 - Individual or team of 2 build

10 foot challenge - Design a car that can go 10 feet

Challenge 3 - Individual or team of 2 build

Who can design a car to go the furthest?