Tractor Pull - RCX

Suggested Time

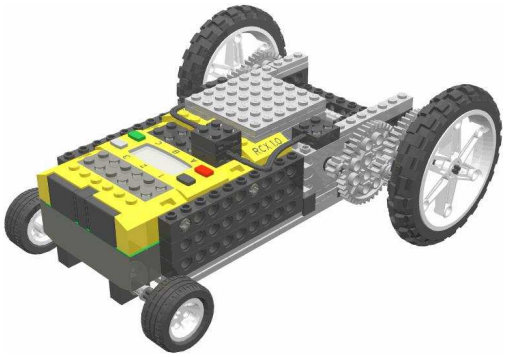
75 minutes

Age

8 - 13

Challenge

In this activity, design and construct an RCX tractor that is capable of pulling a heavy load across a floor. (NOTE: Gears will be needed.)



Topics

Gears, Gear Trains, Friction

Subjects

Math, Science, Engineering, Technology

Programming Themes

Motor Forward

Related Math & Science Concepts

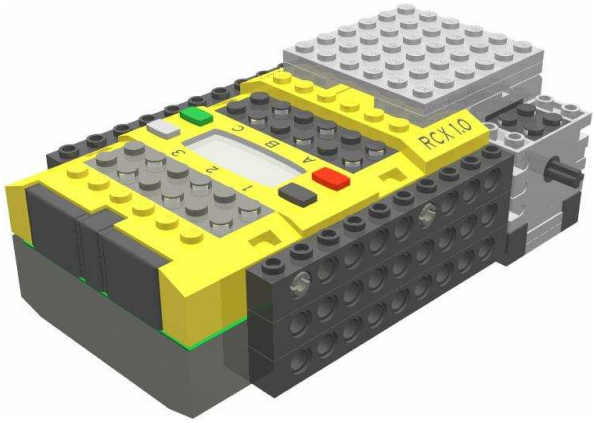
- Acceleration
- Friction
- Gears
- Wheels and Axles
- Force
- Velocity
- Tension
- Weight

Materials

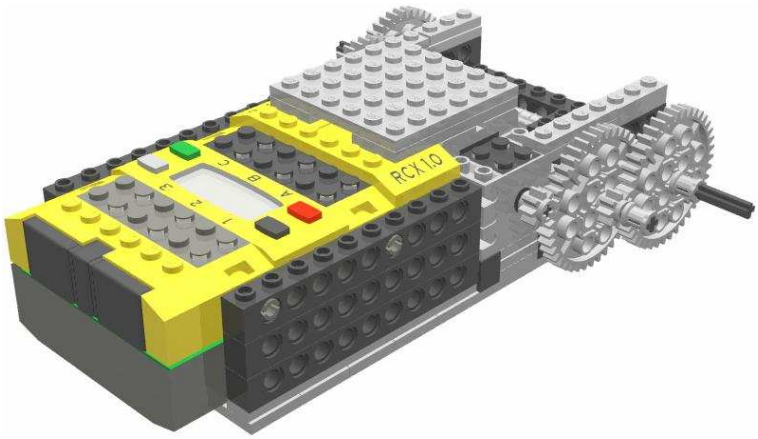
- RCX car
- Gears

Building Instructions

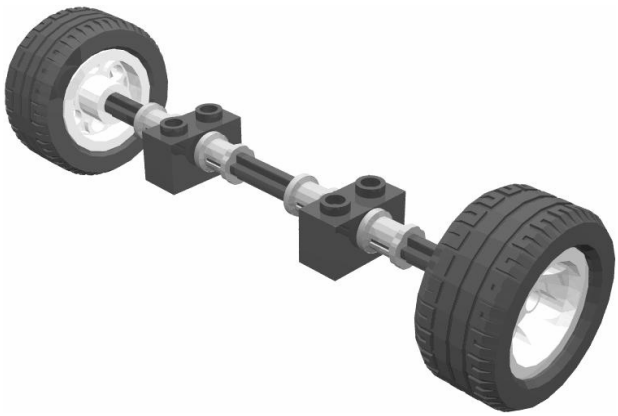
1. Assemble an RCX car with 2 motors and a set of beams to build a gear train.



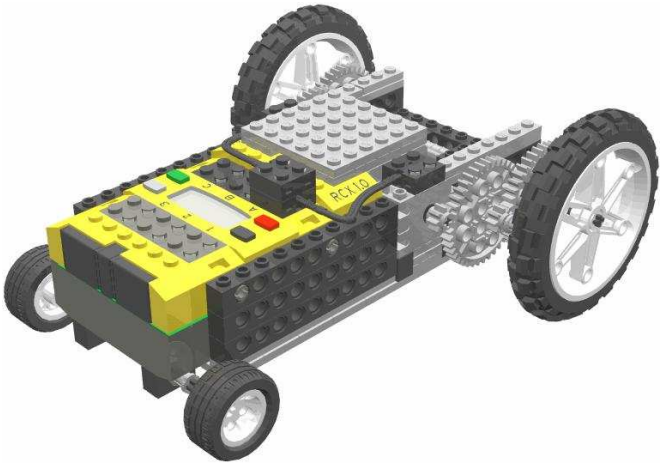
2. Gear down the motors.



3. Assemble a front wheel assembly.

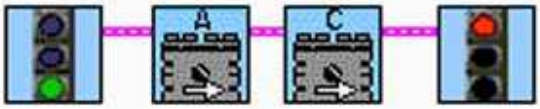


4. Attach front wheels and wire motors.



Programming Instructions

1. In ROBOLAB Inventor 4, program a car to run continuously.



In Action

The tractor should be capable of pulling a significant amount of weight. The vehicle is built for power, not for speed.

Related Activities

- Sturdy Car: The Drop Test
- Snail Car
- Mountain Rescue
- Peak Performance
- Fan-tastic

Building and Programming Refrences

- Building With Bricks
- Building With Plates
- Building With Beams
- Axle Uses
- Connector Pegs & Bushings
- Hubs and Tires
- The RCX
- RCX Motors & Wires
- Gears

Knowledge Base

- My car drives but not straight.
- My car is driving backward.
- My car falls or tips backwards when I drive.
- My wheels spin but the car does not move.
- My car spins in place – why won't it move?
- My motors/wheels fall off when I drive my car.