



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences –particularly students of color and girls – by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Work through the the engineering design process to solve a problem and build a model car!

Supplies Required:

- Graphic organizer
- 1 balloon
- 1 paper cup
- 2 plastic drinking straws
- 4 spools or bottle caps with holes
- 4 rubber bands

Video

Watch this video to understand the car design process! <https://tinyurl.com/y32c9h2r>

Overview

Chicago is known for its annual, and one of the nation's largest and longest-running auto shows; featuring some of the hottest and latest designs to the latest technology in the industry! The purpose of the engineering design process is to keep track of what you've tried, what worked and what didn't. It allows the best ideas to move forward. When automakers come to Chicago to showcase their ideas, they have already gone through the engineering design process. They've found solutions, built, models, and redesigned, in hopes that their car will be the best!

You have been given the gift of time travel and have decided to go back to the 1800s and show people how to design a car! The problem is, they don't even understand the idea, so you have to show them a model with very simple materials--they don't have anything high tech!

Using the materials given, create a model car. Be sure to use the engineering design process: Problem, Solutions, Model, Test, Reflect and Redesign.



Instructions

1. Use the graphic organizer.
2. STEP 1 Problem: How can we show people of the past a concept of a car?
3. STEP 2 Solutions: What are some ways to solve the problem?
4. STEP 3: Build your design. Think about the materials. How can they be used to show how a car looks and moves? What can be used to propel the car forward?
5. STEP 4 Test: Did your model work? Blow up the balloon and release the air. Does your car move forward? How fast?
6. STEP 5 Reflect & Redesign: Was your model successful ? Does it need to be redesigned?

Additional Resources

1. Top ten and most expensive cars in the world: <https://tinyurl.com/y4ka7spa>
2. Careers in engineering found here! <https://tinyurl.com/y6t5lmlw>

Share It Out

Share on social media: Share the results of your design with your friends and family on social media! Explain the steps of the engineering design process in a video! Use the hashtags:

#EngineeringDesign
#ProjectExploration
#StemAtHome

Share via PE's website: Students who complete STEM@home activities and share what they learned with the PE team via our website will earn points which can be traded in for cash prizes at the Explore Store. Your project number is 208. Learn more at www.projectexploration.org/explore-store



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