



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](http://www.projectexploration.org/stemathome).

## In this activity, you will:

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

## Supplies Required:

- Graphic organizer
- 5 (9x11) cardboard sheets
- 8 toilet paper or paper towel rolls
- 1 pair of scissors
- 1 roll of masking tape

## Video

Watch this video to see how chairs are made: <https://tinyurl.com/yxopb9r8>

## Overview

Engineers are very busy people. From the previous activity we learned that engineers solve problems. They build things like bridges and chairs. To be successful in building these things you must use the engineering design process: Problem, Solutions, Model, Test, Reflect & Redesign.

The Little Pigs made another mistake! They failed to move any furniture into the brick house and so they have called on Project Exploration to help them with their pieces. They need strong, sturdy chairs in time for football season—they need a place to plop down and watch the game! Using ONLY cardboard, rolls, and tape, construct a chair that can support a Little Pig!



## Instructions

1. Use the graphic organizer.
2. STEP 1 Problem: How do we build a chair that pigs can use ?
3. STEP 2: Solutions: What are some ways to solve the problem? What are parts of a chair that are necessary?
4. STEP 3 Model: Build your design!
5. STEP 4: Test: Does your model work? Test your chairs by placing different weights on the seat.
6. STEP 5 Reflect & Redesign: Was your model successful? Does it need to be redesigned? If so, how?

## Additional Resources

1. Watch this cool video about building tables and chairs in MineCraft: <https://tinyurl.com/y4otyzzu>

## 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 206. Learn more at [www.projectexploration.org/explore-store](http://www.projectexploration.org/explore-store)



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