



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 engineering design process to build a boat!

Supplies Required:

- Graphic organizer
- 1 large sheet of cardboard
- Several yards of wax paper
- 1 roll of tape
- 1 bottle of glue
- Several rubber bands
- Several yards of foil

Video

Learn about different types of boats: <https://tinyurl.com/y6sb6b73>

What is buoyancy? <https://tinyurl.com/y6ojfosk>

Overview

You have found yourself stranded on an island. While it's sunny and beautiful and there's a lovely sandy beach, you're missing having Wifi to Tik Tok. The problem is, you don't have a way off the island, but you do have a big Project Exploration brain and materials! You will use the materials to build a boat so you can row yourself off of the island. Remember, engineers use the steps of the engineering design process to help them find a solution and test their designs. Don't forget to follow the steps! Bon voyage!



Instructions

1. Walk through the graphic organizer
2. STEP 1 Problem: How can we make a boat that will transport us safely to the mainland?
3. STEP 2 Solutions: What are some ways to solve the problem? What are parts of a boat that we need to have?
4. STEP 3 Model: Build your design! What are something you need to pay attention to while building? Think about a successful boat. What makes it work?
5. STEP 4 Test: Fill your tub or sink and test your boat! How long does it float? Add weight and see what happens!
6. When a boat is placed in water, it displaces an amount of water equal to the boat's weight – as long as the object is less dense than the water, it will float.
7. STEP 5 Reflect & Redesign: Was your model successful? Does it need to be redesigned?

Additional Resources

1. Fun facts on Marine Engineers: <https://tinyurl.com/yxa9gaha>

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 308. Learn more at www.projectexploration.org/explore-store



Call or text us for help: 312-772-6634

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