



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:

Use the engineering design process to solve a problem and save Fred, the worm!

Supplies Required:

- Graphic organizer
- 1 Gummy worm (Fred)
- 1 Gummy life saver candy (life preserver)
- 1 Small, clear plastic cup (boat)
- 3 Paper clips (rescue materials)
- Optional: Small tray (lake)

Video

Learn more about Fred: <https://tinyurl.com/yy3pa52q>

Overview

Poor Fred went out on his rowboat on a beautiful sunny day to catch fish. Everything was going according to plan, until a BIG gust of wind came and capsized his boat! When the boat flipped over, he crawled on top of the boat, but his life preserver is trapped underneath. The coast guard called Project Exploration to see if our students could help him out! Can you save Fred?

We clearly have a big problem! When we need solutions, we follow the engineering design process to help us find the best solution to our problem. Remember the steps: Problem, Solutions, Model, Test, Reflect & Redesign



Instructions

1. Place the gummy ring on the tray and place the cup upside down over the ring.
2. Lay the gummy worm on top of the cup.
3. Using the paper clips **ONLY**—not your hands—help Fred get off of the boat and into his life preserver without falling into the lake!
4. Use the graphic organizer to help you save Fred!
5. **STEP 1 - Problem:** What do we want to solve? How will we save Fred?
6. **STEP 2 - Solutions:** What are some ways to solve the problem?
7. ***STEP 3 - Model:** Build your design!
Sometimes we don't have a model to build, if that's the case, get right to the testing step!
8. **STEP 4 - Test:** Does your solution work? How long did it take you to save Fred? What was the hardest part?
9. **STEP 5 - Reflect & Redesign:** Was your technique successful? Does it need to be changed?

Additional Resources

1. If Fred didn't have PE, he could use a lifeboat: <https://tinyurl.com/y4gr6zo9>

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



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

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