



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:

build and create with LEGOs!



Supplies Required:

LEGOs
Dominos
Blocks
Other building materials!

Video

What is an engineer? <https://tinyurl.com/otpp65w>

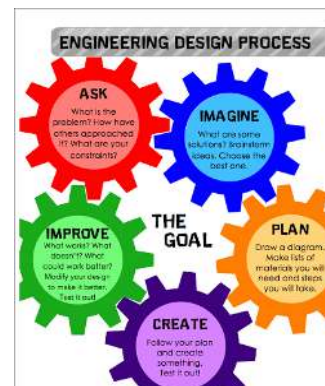
Learn how to solve problems like an engineer: <https://tinyurl.com/yxlgdhmn>

How to go through the engineering process: <https://tinyurl.com/q8jr8jq>

Overview

Anything that is built must first be engineered, or planned out. An engineer is a person who designs and builds complex products, machines, systems, or structures. Engineers enjoy learning how and why things work. They're very creative and they're great at solving problems and finding solutions. The field of engineering is divided into branches such as civil, electrical, mechanical, and chemical engineering. Engineers work hard to design and build complicated structures or systems that help the world work! The engineering design process is a series of steps that engineers use to guide them as they solve problems. The steps they follow are:

1. Ask
2. Imagine
3. Plan
4. Create
5. Improve



Challenge yourself!

What can you build with the LEGOs or blocks? Try to build them all! Get creative and don't forget to follow the engineering and design process!

1. Make a LEGO bridge
2. Build something with just 4 LEGO pieces
3. Build something that starts with the letter S
4. Construct an upside-down house
5. Build something using all of the LEGO pieces
6. Construct a simple machine, like a lever, a wedge, a wheel and axle, or a pulley
7. Build a boat that floats
8. Create a marble maze
9. Build a model of your living room
10. Build a model of your school
11. Use the LEGOs to create a pattern

Additional Resources

Think About It! What was your most successful design? What design did you have to improve? What was your most challenging design?

1. Be a part of the Design Squad on PBS Kids: <https://pbskids.org/designsquad/>
2. Look at these amazing LEGO creations: <https://tinyurl.com/y2uaw2qa>
3. The most amazing engineering feats: <https://tinyurl.com/y92jo7ge>

Share It Out

Share on social media: Show off your engineering skills on social media! Encourage your family and friends to build and create! Share photos of your engineering feats using the hashtags:

#LEGOChallenge
#ProjectExploration
#StemAtHome

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please complete our interest form and a staff member will be in touch with you: www.projectexploration.org/interest.

