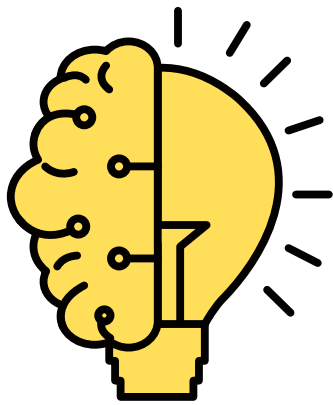




LEARN HOW TO



**THINK LIKE AN
ENGINEER.**

- 
- 
- 1. IDENTIFY A PROBLEM**
 - 2. BRAINSTORM**
 - 3. BUILD A SOLUTION**
 - 4. IMPROVE DESIGN**

BUILD YOUR OWN PROSTHESIS



1. Identify a Problem

Some people are born without arms or legs, or their limbs are amputated after a bad accident or illness. Prosthetic devices replace the function of body parts, such as hands, arms, or legs. A person may choose to use a prosthetic device to increase their mobility or allow them to perform daily tasks like holding a glass of water or brushing their teeth.

Imagine you are an engineer designing a prosthetic hand. What functions are important to a replacement hand?



2. Brainstorm Solutions

Brainstorm designs that could perform the functions you identified.

What properties are important to your design? Try thinking about. . .

- Grip strength
- Stability
- Durability
- Comfort
- Weight
- Appearance
- Longevity
- Size
- Cost

Choose your best design to build a prototype.



3. Build a Prototype

How can you use materials around your house to make a prototype, or model, of your design?

Suggested Materials:

- Straws
- String or yarn
- Popsicle sticks
- Jumbo paper clips
- Tape
- Play-Doh
- Rubber bands
- Pipe cleaners



4. Make Improvements

What parts of your design worked well? What parts of your design can you improve? What would you do differently next time?

You just learned the engineering design process! Try following it to make another prosthetic device. Remember to use your imagination!