

“Be a Robotics Engineer”

Job Task:

You are a robotics engineer, an engineer who designs, builds, and tests robots and robotic platforms. Every year, thousands of people get in accidents and lose one of their hands. The science of developing robotic hands, and other artificial limbs, is called prosthetics. Prosthetics are intended to restore as many normal functions as possible for the missing body part. A local medical device company has reached out for your assistance. Your job is to design a simple robotic hand that can grasp and pick up a small object.

Time Frame: 1-2 hours

Materials:

- 5 plastic straws
- Scissors
- Toothpick
- String
- Paper cup
- Tape
- Small object (i.e., ping pong ball, rubber ball, etc.)

Procedure:

1. Using your scissors, cut a V-shaped hole (joint) about 1/3 of the way down a straw.
 2. Using a toothpick, poke a hole for the string (tendon) about 1 cm in front of the joint.
 3. Insert the string into the straw (bone) and through the hole you made with the toothpick. Knot the string so that it cannot be pulled back through the hole.
 4. Repeat this process to construct as many “fingers” as you need (2-4 recommended).
 5. Attach the “fingers” to a paper cup.
 6. Test your robotic hand by trying to pick up a small object.
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