

Robotic Hand

Objective: Create a straw-string pulley system to resemble the mechanics of a robotic hand

Materials:

- 4 Straws
- 1 Needle
- 1 Cardboard box
- 4 Rubber finger rings
- String
- Glue
- Scissors

Procedure:

- 1) Using scissors, make 2 diamond-shaped cuts/notches near the top of each of the four straws (refer to images for reference). Leave around 2 in. from the bottom of the straws.
- 2) Thread the string into the needle, making sure to tie a knot at the end of the string. Just above the top of the first cut, poke the needle through the straw and pull the needle through the straw.
- 3) Pull the string until it comes through the opposing end of the straw.
- 4) Gently twist the four altered straws through the corresponding holes of the cardboard box, having the string end hanging from the bottom of the block.
- 5) Tie the rubber rings to the hanging end of the string.
- 6) If necessary, glue the straws in place to increase stability.

Questions to think about:

- Why was it necessary to create the diamond-shaped cuts in the straws?
- How does the straw-string pulley system replicate a robotic hand?