

## ACTIVITY: Make a Robotic Hand!

### Directions:

Gather these materials listed next to the first picture below.

Watch the [video](#) to understand how to build your robotic hand. You can also use the visual instructions below to help step by step. Then use your robotic hand to pick up a plastic bottle and move it to the open payload without dropping it.



### Materials:

- Two cups
- 3 rubber bands
- Duct tape
- Scissors



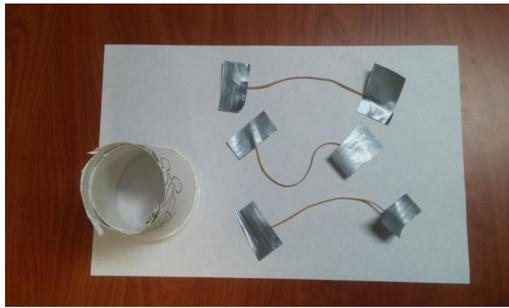
1. Remove the bottom end of each cup by cutting along the curved wall of the cup.



2. Discard the cup bottoms and place one cup inside the other.



3. Take three rubber bands and cut them so they no longer make loops.



4. Place a strip of tape on each end of the rubber band.



5. Tape one end of a rubber band to the inside of the inner cup. Repeat this process with the other two rubber bands. Space each rubber band out evenly.



6. Tape the other ends of the rubber bands to the outside of the outer cup so that the rubber bands make a small loop over the cut edges of the cups.

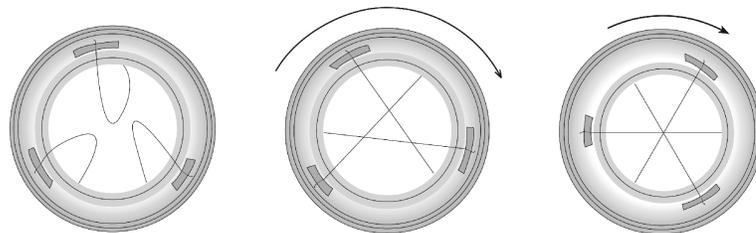


Image credit: NASA

7. Position the cup so the rubber bands are facing down. Twist the inside cup clockwise while holding the outside cup in place. The motion should be similar to using a pepper grinder. The rubber bands should all intersect in the middle of the cups. This is your snare.

8. Adjust rubber bands as needed to make them even.

9. Turn the opposite way to make rubber bands go back to their starting positions.

10. As a team, have one person control the robotic hand effector with their eyes closed. The other participants will give directions to that person so that they successfully land the bottle inside the payload!



Payload must be completely within the red square to be considered loaded.