ROBOTIC ARTICULATED CLAW

EXPERIMENT

MATERIALS YOU'LL NEED

- CONSTRUCTION PAPER
- STRAWS
- STRING
- BEADS (WITH AN OPENING BIG ENOUGH FOR THE STRING)
- CLEAR TAPE
- BALLOON
- SCISSORS

STEPS

1. BUILD THE BASE

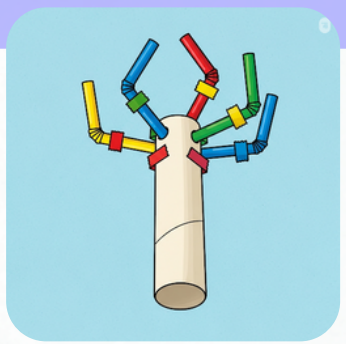
1. ROLL UP A SHEET OF PAPER TO FORM A CYLINDER.
2. SECURE IT WITH TAPE SO IT KEEPS ITS SHAPE.

2. PREPARE THE FINGERS (STRAWS)

1. CUT STRAWS INTO 3-INCH PIECES (MAKE 3-5 DEPENDING ON HOW MANY "FINGERS" YOU WANT).
2. ON EACH STRAW, CUT TWO SMALL SLITS ABOUT 1 INCH APART ALONG ONE SIDE (THIS ALLOWS BENDING).

3. ATTACH THE FINGERS

1. TAPE THE BOTTOM END OF EACH STRAW TO ONE END OF THE PAPER CYLINDER, ARRANGING THEM EVENLY LIKE CLAW FINGERS.

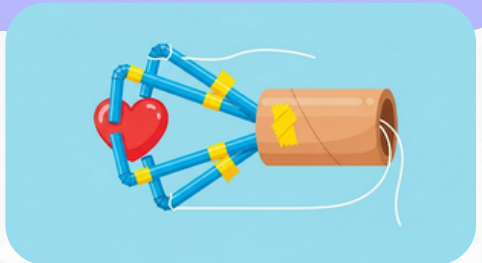


4. PREPARE THE STRINGS

1. CUT 4–5 INCH PIECES OF STRING (ONE FOR EACH STRAW).
2. TIE A SMALL BEAD AT THE END OF EACH STRING (THIS WILL STOP THE STRING FROM SLIPPING THROUGH THE STRAW).

5. INSERT THE STRINGS

1. THREAD EACH STRING THROUGH A STRAW FROM THE "FINGERTIP" END TOWARD THE CYLINDER.
2. THE BEAD SHOULD REMAIN OUTSIDE AT THE TIP, AND THE LOOSE STRING SHOULD COME OUT NEAR THE CYLINDER.



6. PREPARE THE OBJECT TO GRAB

1. BLOW UP A BALLOON TO A SMALL SIZE (ABOUT 1.5–2 INCHES IN DIAMETER).
2. THIS WILL SERVE AS THE OBJECT THE CLAW CAN GRAB.

7. OPERATE THE CLAW

1. PULL ON THE STRINGS—THIS WILL BEND THE STRAWS AT THE SLIT POINTS.
2. AS THEY CURVE, THE STRAWS CLOSE AROUND THE BALLOON, SIMULATING A ROBOTIC CLAW GRIPPING IT.

FINAL RESULT