

EXTENSION ARM INSTRUCTIONS

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Supplies:

Popsicle sticks

Straws

Masking tape

Skewers

Curved scissors

Yarn Needle

Ruler

Marker



- 1.) Take three straws. Using a ruler, measure and mark 3 inches from both ends of each straw.



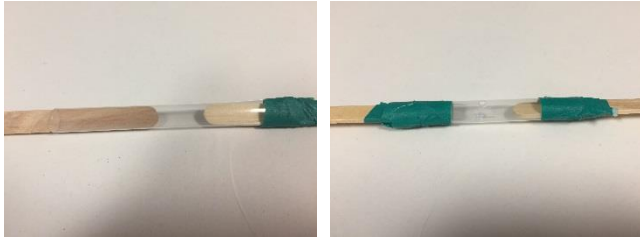
- 2.) Cut the straws at the mark. When finished, you should have 9 straw pieces total.



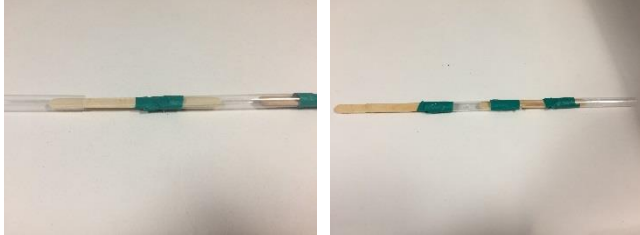
- 3.) Take a popsicle stick and a straw piece. Insert the popsicle stick approximately 1 inch into the straw. Use masking tape to tape the straw closed over the popsicle stick.



- 4.) Take another popsicle stick and inserted it approximately 1 inch into the other end of the straw used in the previous step. Use masking tape to tape the straw closed over the popsicle stick.



- 5.) Take another straw piece and insert it approximately 1 inch over the exposed end of the popsicle stick from the previous step. Use masking tape to tape the straw closed over the popsicle stick.



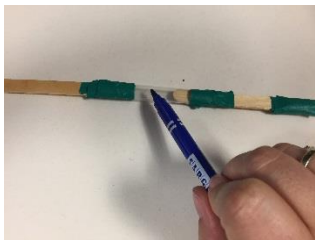
- 6.) When finished with steps 3-5, you should have an arm piece that has a straw on one end and a popsicle stick on the other. Set the arm piece aside.



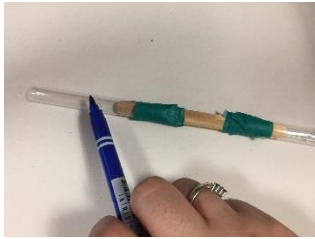
- 7.) Repeat steps 3-5 an additional 3 times. When finished, you should have a total of four arm pieces.



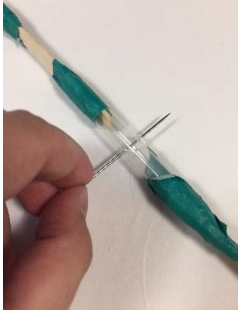
- 8.) When all arm pieces are assembled, mark the center point of each straw piece that is between two popsicle sticks on all four arms.



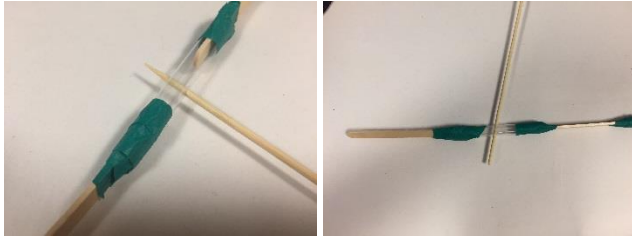
- 9.) On all four arms, find the straw pieces that are only attached on one end to a popsicle stick. On those straw pieces, measure and mark a spot approximately one inch away from the inserted end of the popsicle stick on the straw.



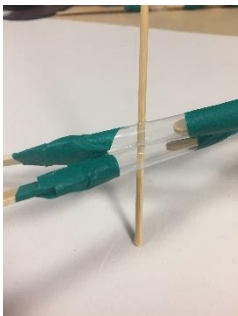
10.) Using a yarn needle, **carefully** poke a hole all the way through each straw piece on the marked spots.



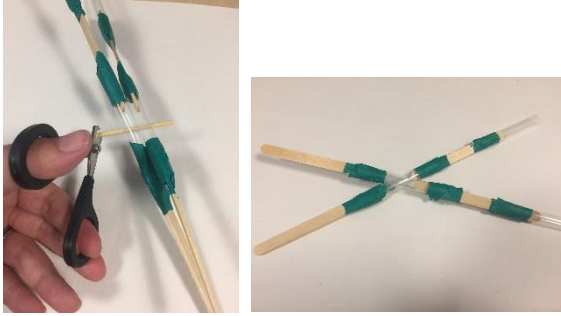
11.) Once all the holes are punched, take an arm and a skewer. **Carefully** push the pointed end of the skewer through the holes on the straw piece that is between two popsicle sticks. Push the skewer until approximately $\frac{1}{2}$ inch of the blunt end of the skewer remains on the other side of the straw piece.



12.) Take another arm piece and find the straw piece that is between two popsicle sticks. **Carefully** push the pointed end of the skewer from the previous step through the straw piece. Pull the skewer through the straw piece until the new arm rests atop the old arm, both arms held in place together with the skewer.

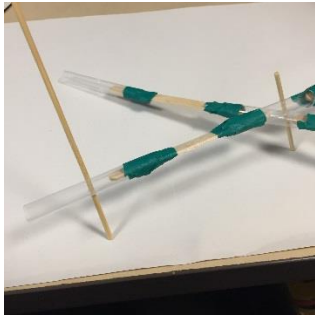


- 13.) Take the curved scissors and **carefully** clip the long, pointed end of the skewer approximately $\frac{1}{2}$ inch from where it emerges from the straw pieces. When finished, the two arms should create a moving X shape.

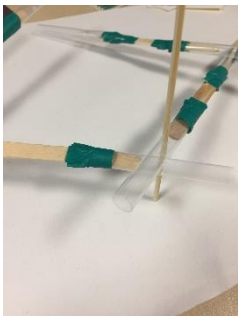


- 14.) Repeat steps 10-13 for the remaining two arm pieces.

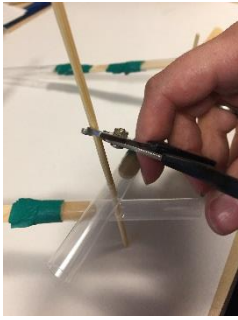
- 15.) Take an X piece and a skewer. **Carefully** push the skewer through the hole on one of the straw pieces that is only attached to a popsicle stick on one end. Push the skewer until approximately $\frac{1}{2}$ inch of the blunt end of the skewer remains on the other side of the straw piece.



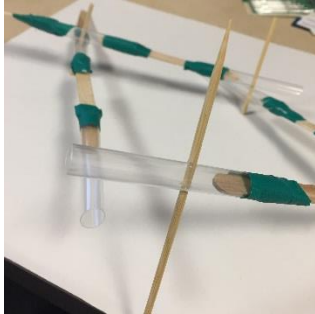
- 16.) Take the other X piece and **carefully** push the pointed end of the skewer from the previous step through a straw piece that is only attached to a popsicle stick on one end. Pull the skewer through the straw piece until the new X piece rests atop the old X piece. The two ends of the X pieces should be held in place together with the skewer.



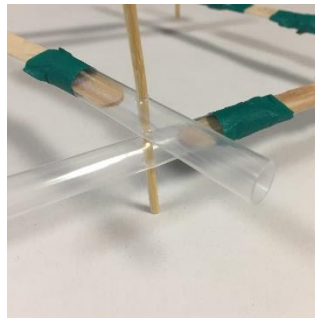
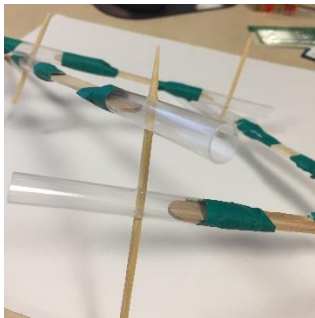
- 17.) Take the curved scissors and **carefully** clip the long, pointed end of the skewer approximately $\frac{1}{2}$ inch from where it emerges from the straw pieces.



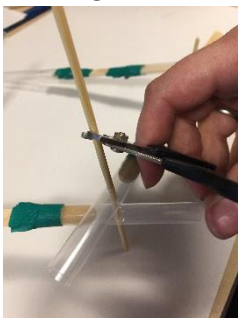
- 18.) Using one of the two remaining straw piece ends of the X shapes, **carefully** push the pointed end of a skewer through one straw piece. Push the skewer so the pointed end is about 2 inches out of the straw



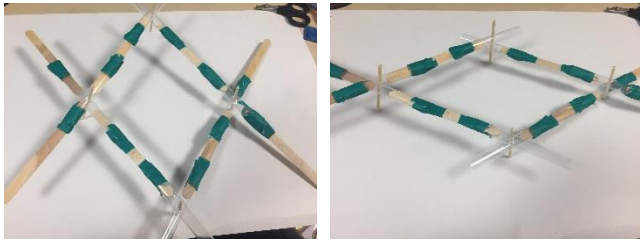
- 19.) Using the skewer from the previous step, **carefully** push the skewer through the remaining straw piece end, until the straw piece rests upon the previous one, and approximately $\frac{1}{2}$ inch of the blunt end of the skewer remains on the other side of the straw pieces.



- 20.) Take the curved scissors and **carefully** clip the long, pointed end of the skewer approximately $\frac{1}{2}$ inch from where it emerges from the straw pieces.



- 21.) You should have one complete moving arm unit. Each end should have an exposed popsicle stick, and the center should form a diamond shape. When the exposed popsicle sticks are pushed and pulled together, the extension arm should expand and contract.



22.) At the point, you can either create a longer extension arm by creating more moving joints or design your own claw grabber ends for your extension arm. Have fun and be creative!