

How to make a NOT gate

(out of popsicle sticks and fasteners)

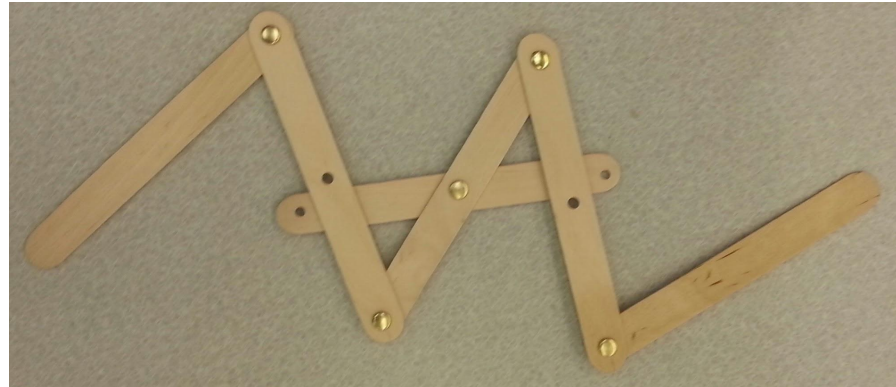
Drill Holes

- Drill holes in at least 6 popsicle sticks.
- Have one hole at each end and one in the middle.
- Make the size of the hole slightly bigger than the size of the fastener you are using, this will allow them to rotate well.
- Depending on method of hole making available, consider making spare in case some break.

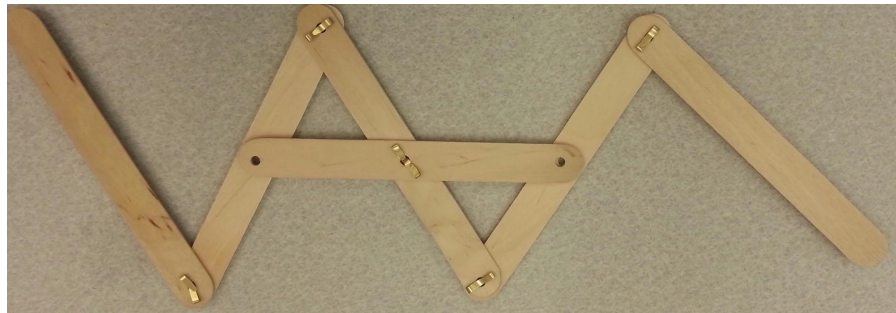


Make Linkage

- Next, attach the popsicle stick together in the manner shown.
- Pay attention to which sticks are on top of others, this will ensure no binding occurs later on.
- Note that only the center popsicle stick really need holes in the center.



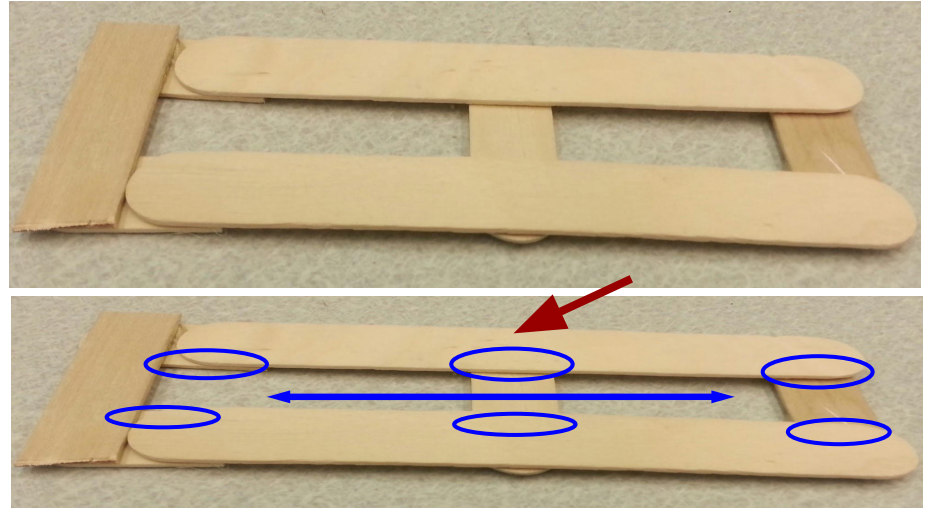
The fastener chain from the top.



From the bottom.

Make Slide Case

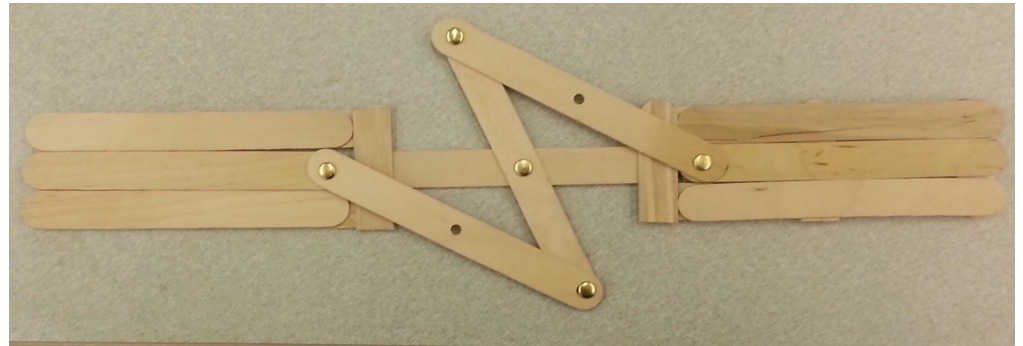
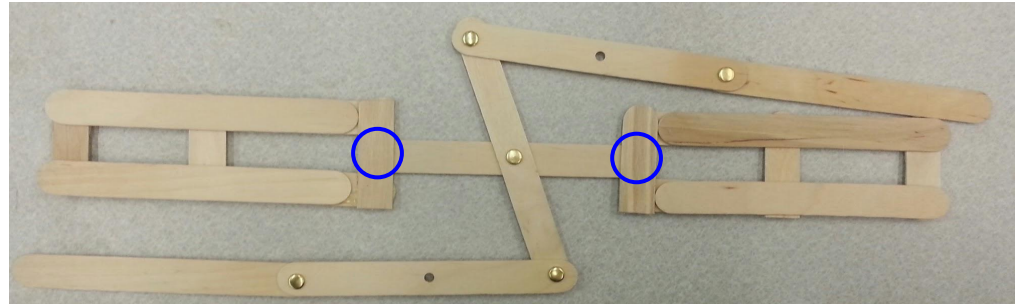
- Next, construct two slide cases like the ones shown
- Cutting the popsicle sticks is not essential if you don't have a way of doing it easily or don't want to just snap them.
- Note, the red arrow support will limit the movement of the slide. Put it as far back as you want your input size to be.



Watch for glue in the indicated areas. Another popsicle stick will be sliding along the blue area and glue will bind or cause friction.

Connect Slide and Fastened Chain

- Glue the two slide cases to the linkage as shown, glue at the blue circles.
- Insert the last sticks in the linkage into the slide cases.
- Test sliding the last stick in the linkage up and down. If there is a large amount of friction, consider sanding the sticks if you have sandpaper.



Finishing Touches

- To finish your NOT gate, glue two sticks on the tops of the slides, to keep the popsicle stick inside from falling out.
- If you want, you can draw symbols on the slide sticks.
- Remember, for the slides, a pushed stick is True, and one that is pulled out is False (or 1 and 0 respectively as is marked on the example.)

