

LET'S BUILD A MINI TREBUCHET!



STEP #1: WRITE YOUR NAME ON YOUR CARDBOARD



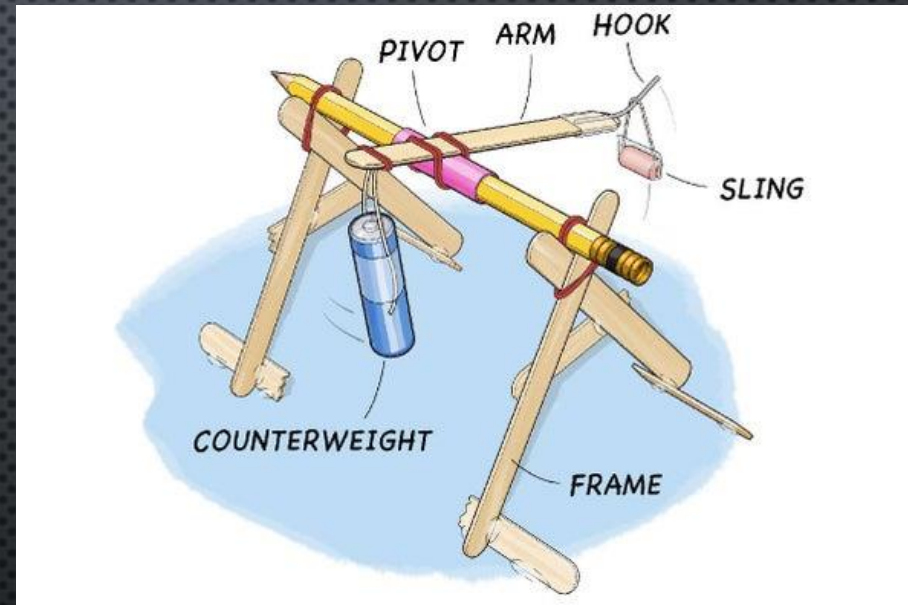
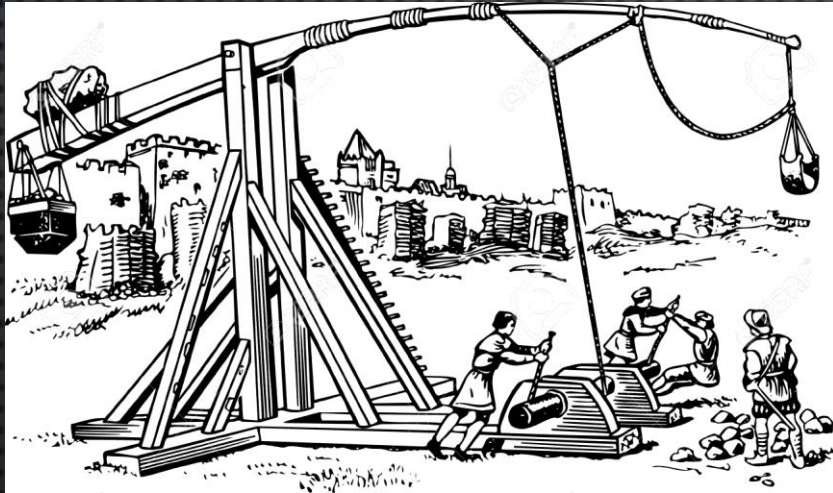
STEP #2: CHECK OUT YOUR MATERIALS (NOT ALL ARE IN YOUR BAG)

Materials:

- Corrugated cardboard
- Popsicle sticks (8)
- Scissors
- Pencil
- Milkshake straw
- Hot glue gun
- Tape
- Rubber bands
- String
- Paper clip
- AA battery (or similar size/weight object)



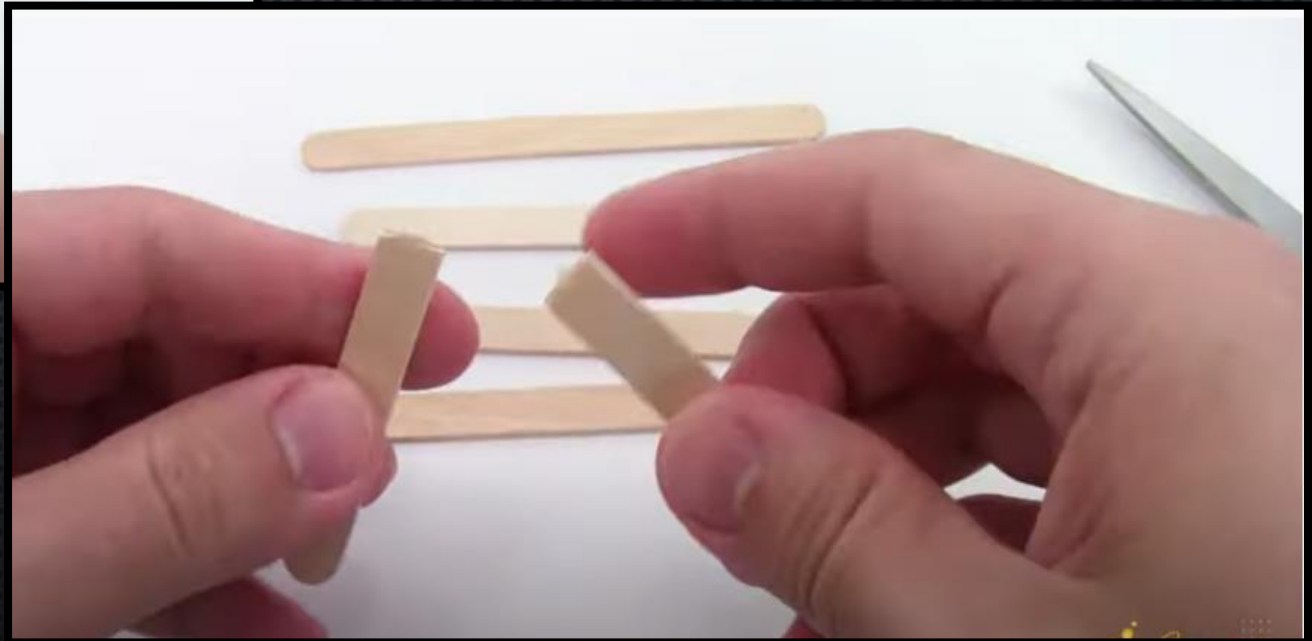
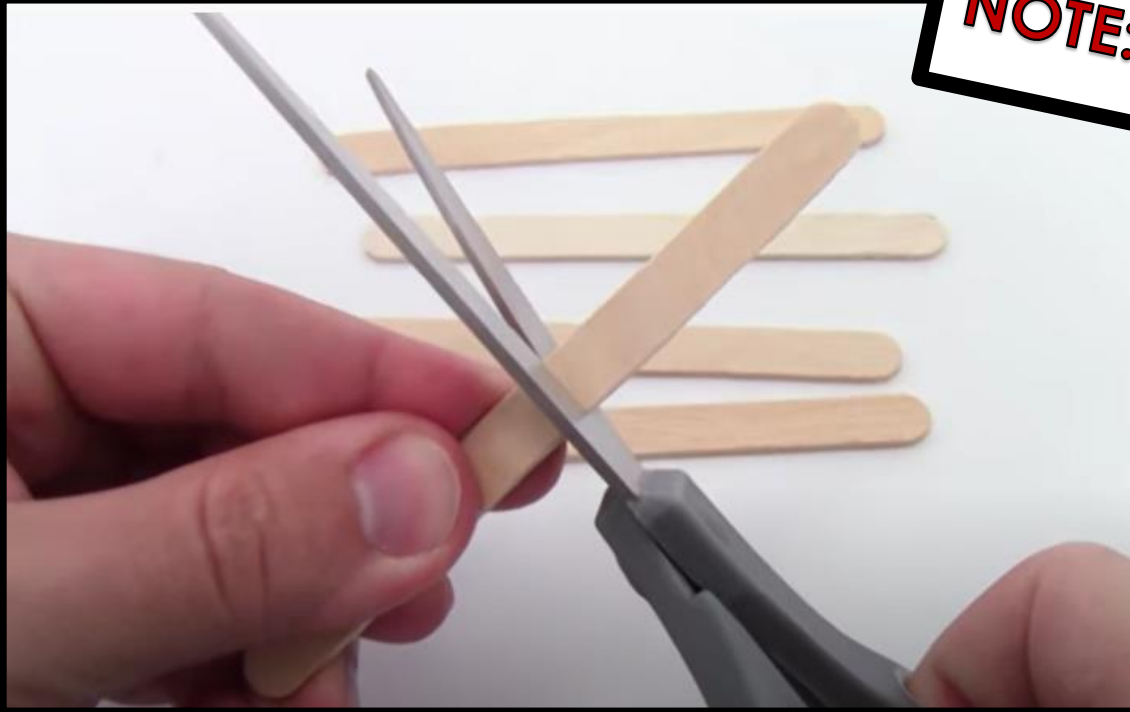
TREBUCHET: A type of catapult that uses a long arm to throw a projectile. All energy is provided by the counterweight.



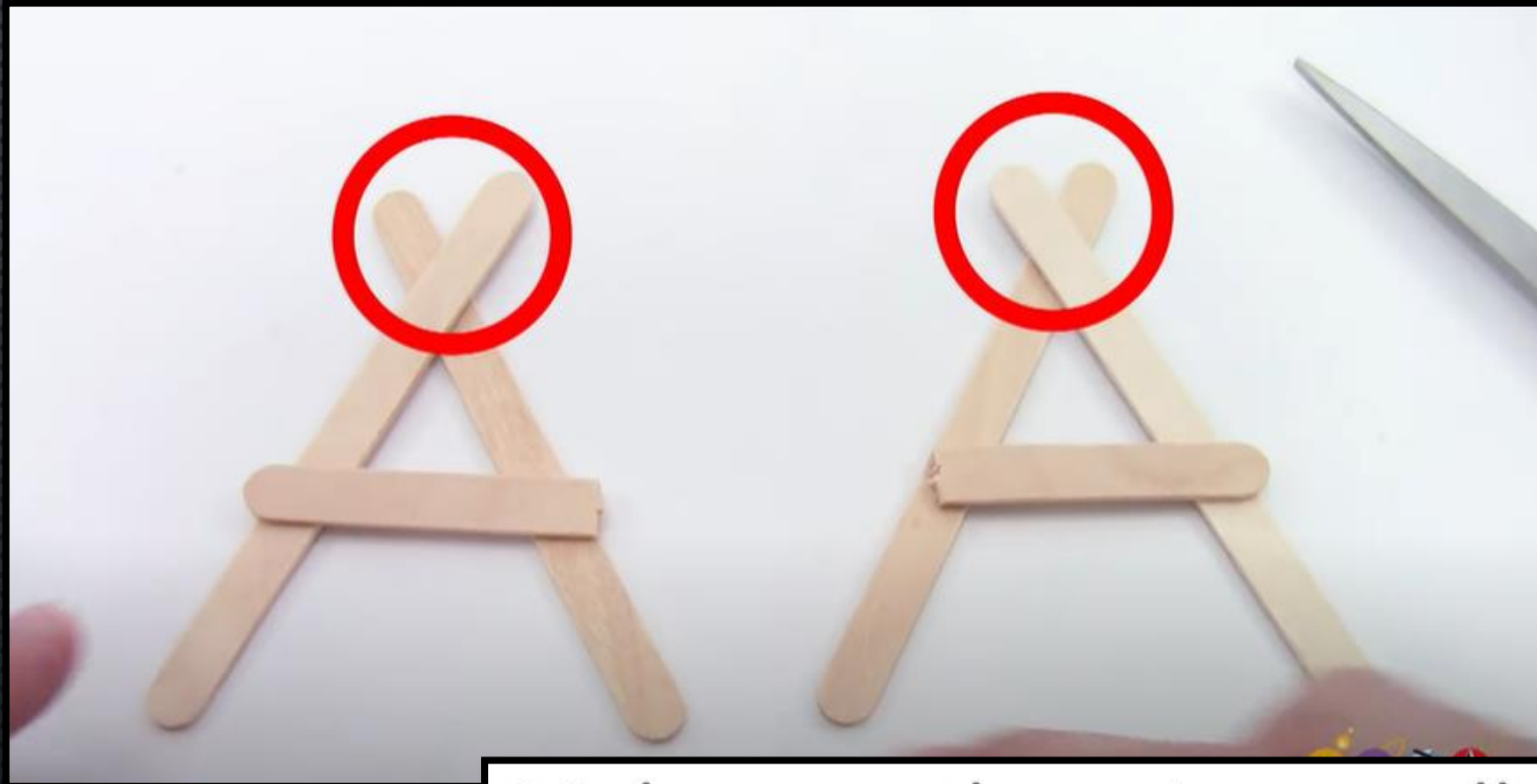
LET'S GO! —————→

Cut a popsicle stick in half.

NOTE: ONLY CUT ONE. LEAVE THE OTHERS WHOLE



Form two "A" frame pieces.

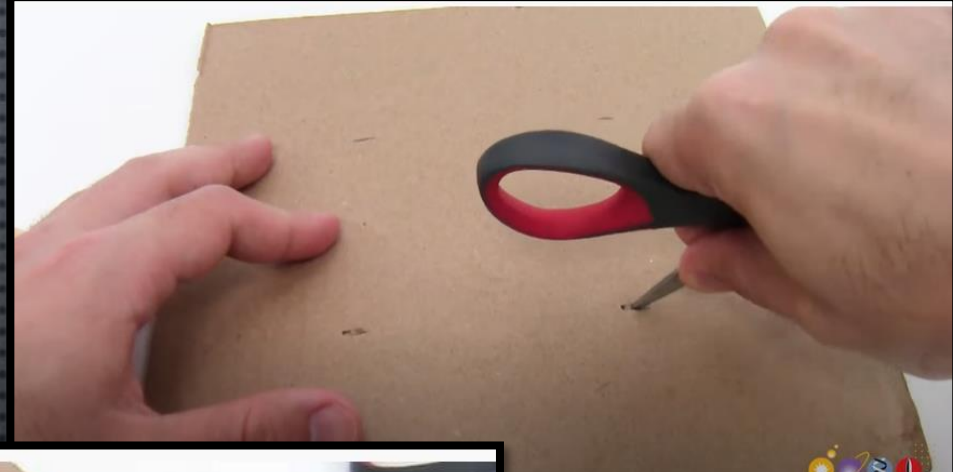


Make sure there is a small notch at the top.

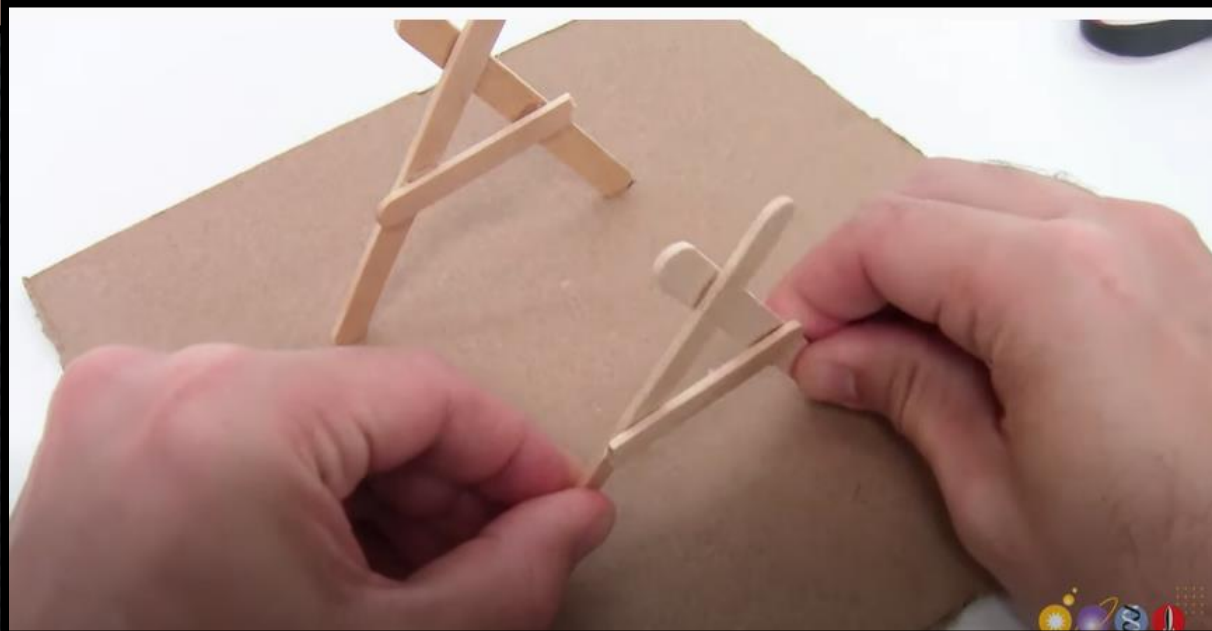
Glue the frames together.



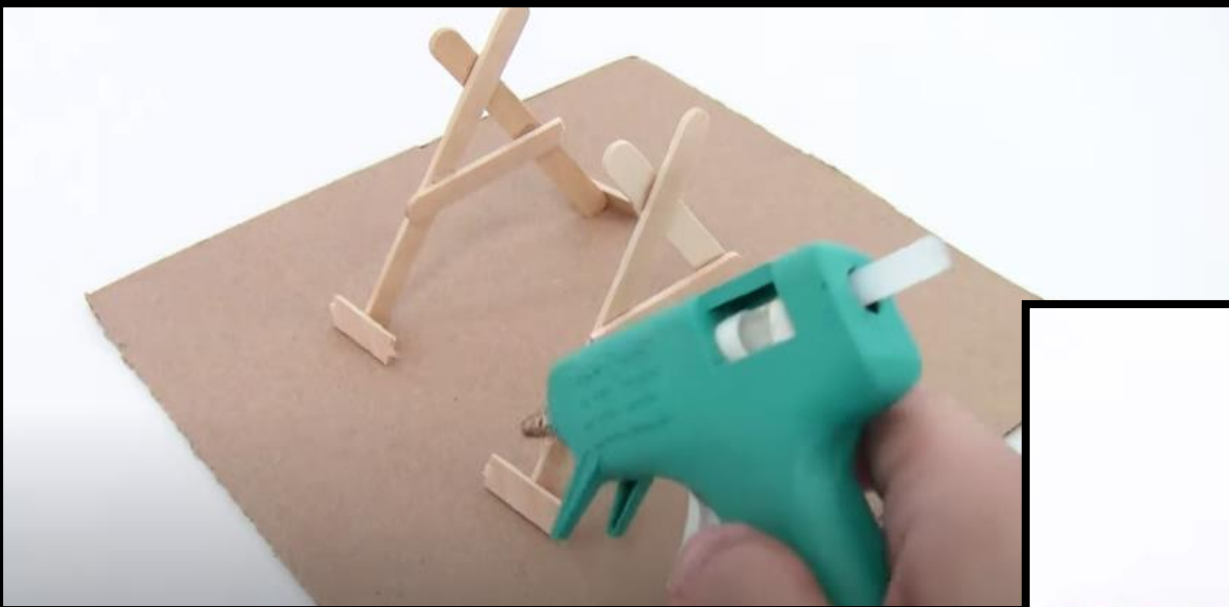
Cut slots in the cardboard so the A-frames can stand vertically.



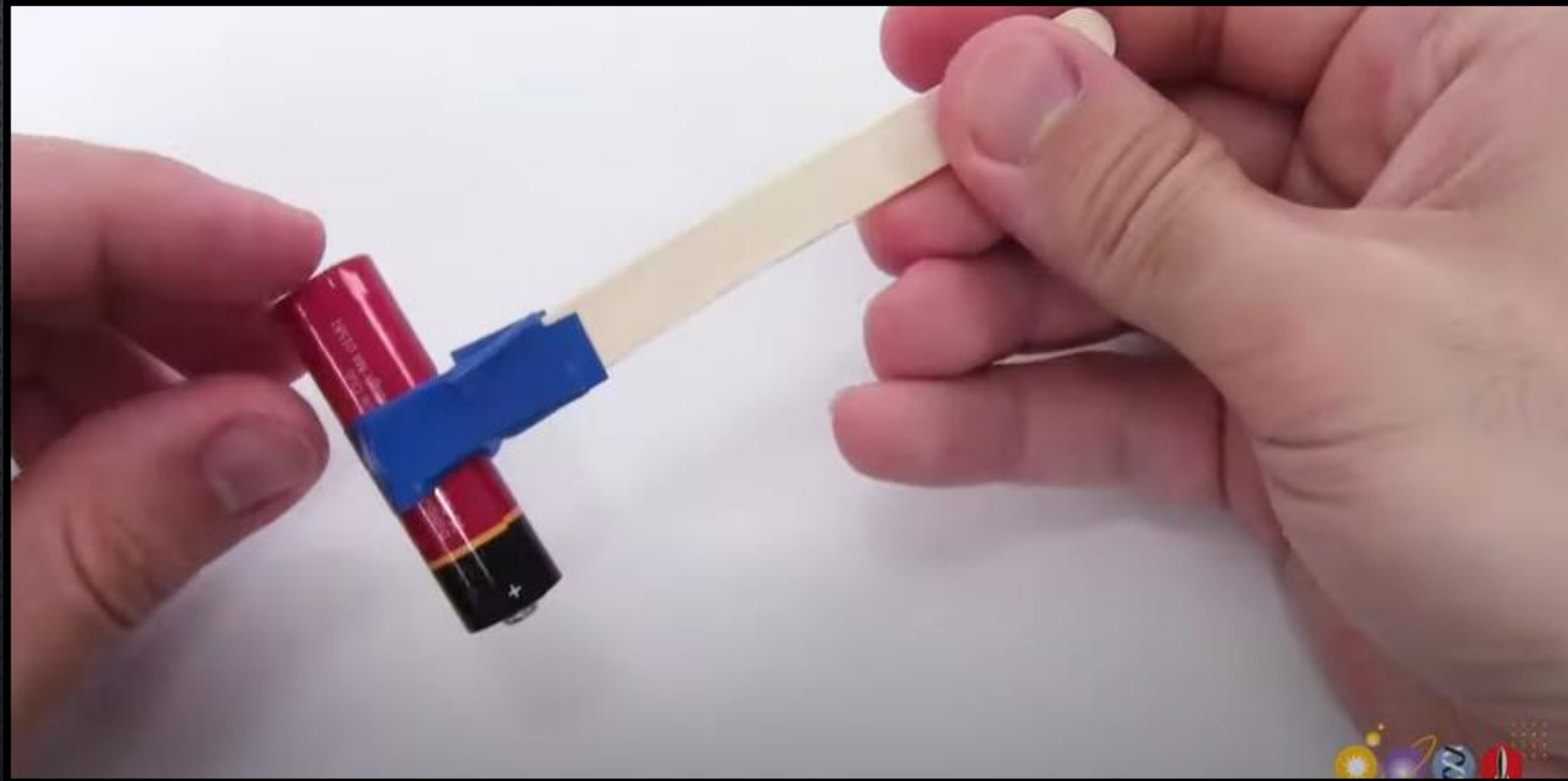
MEASURE



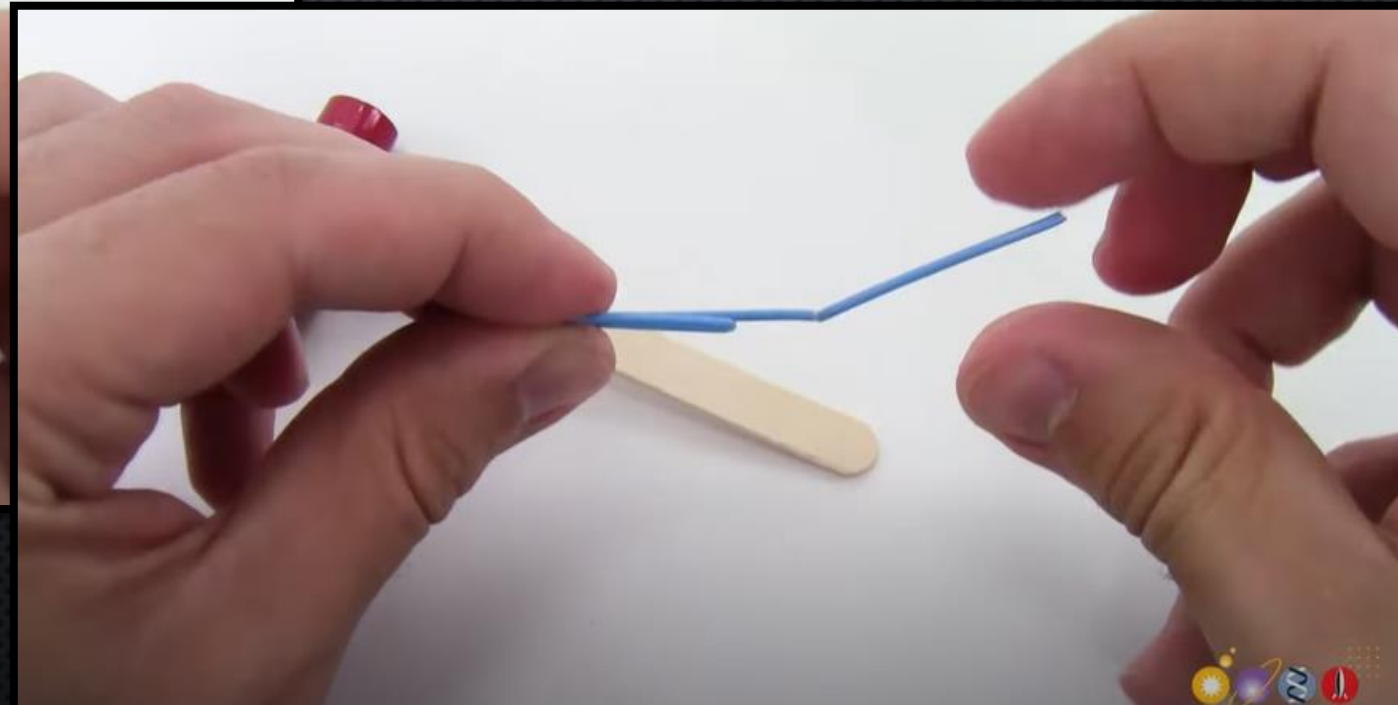
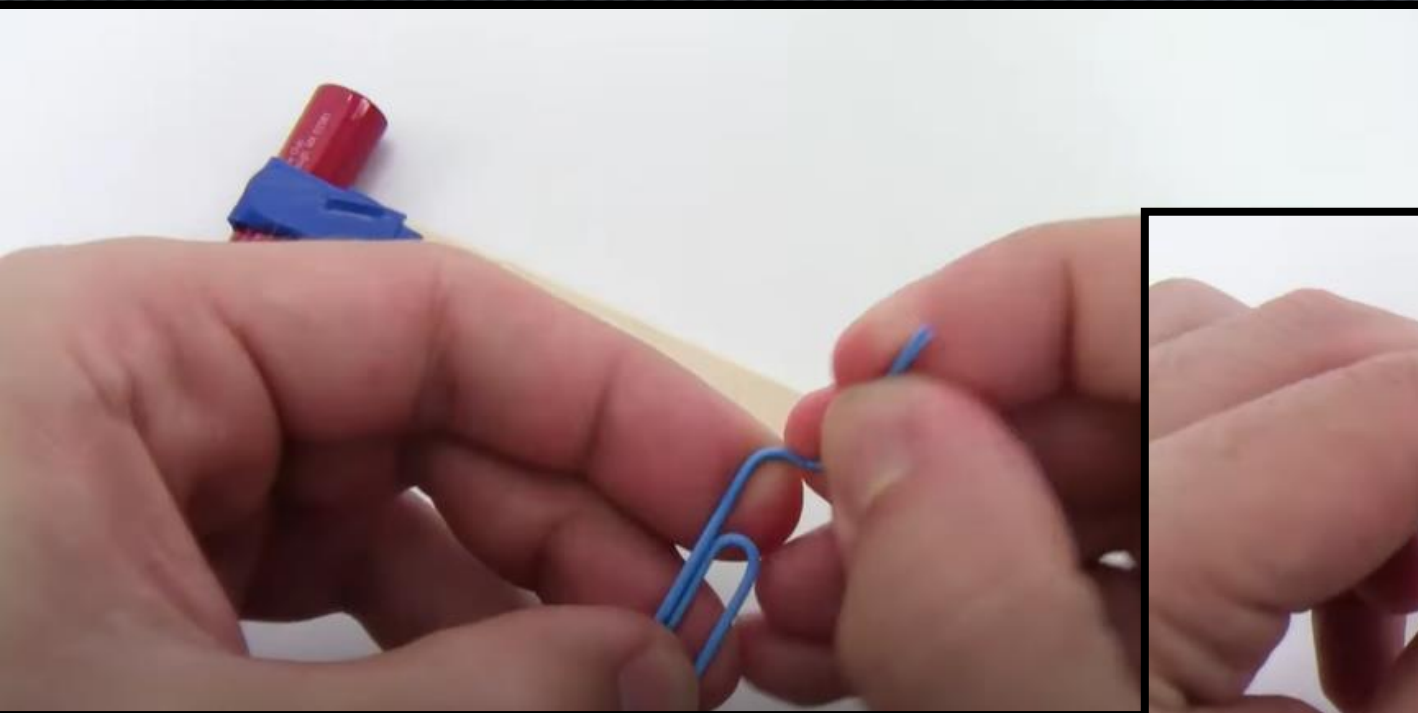
Glue them in place with extra popsicle sticks as supports.



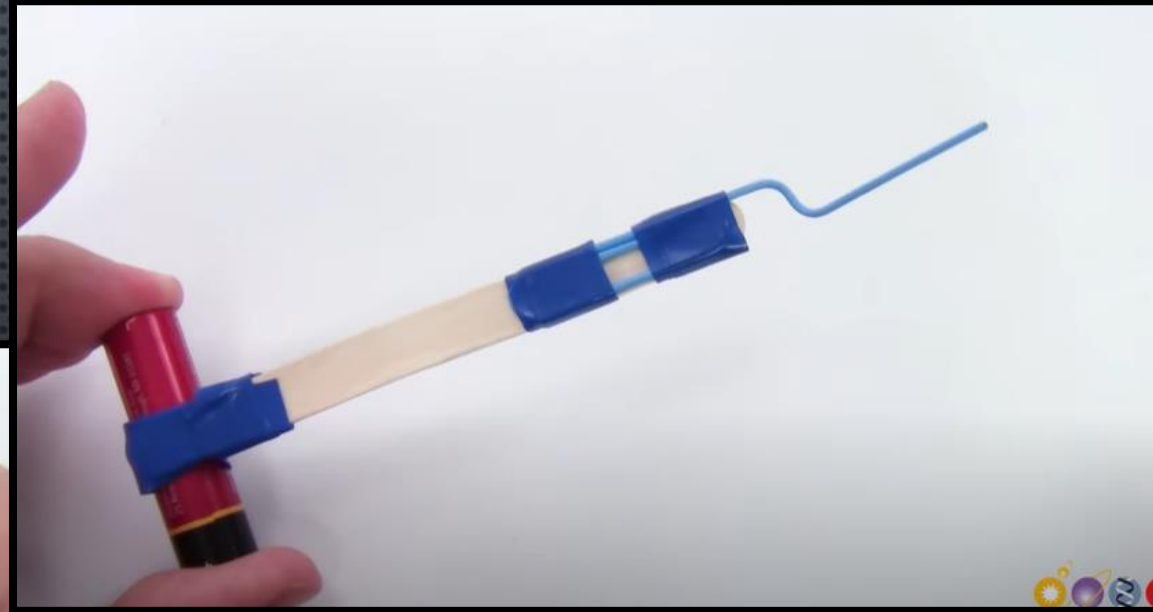
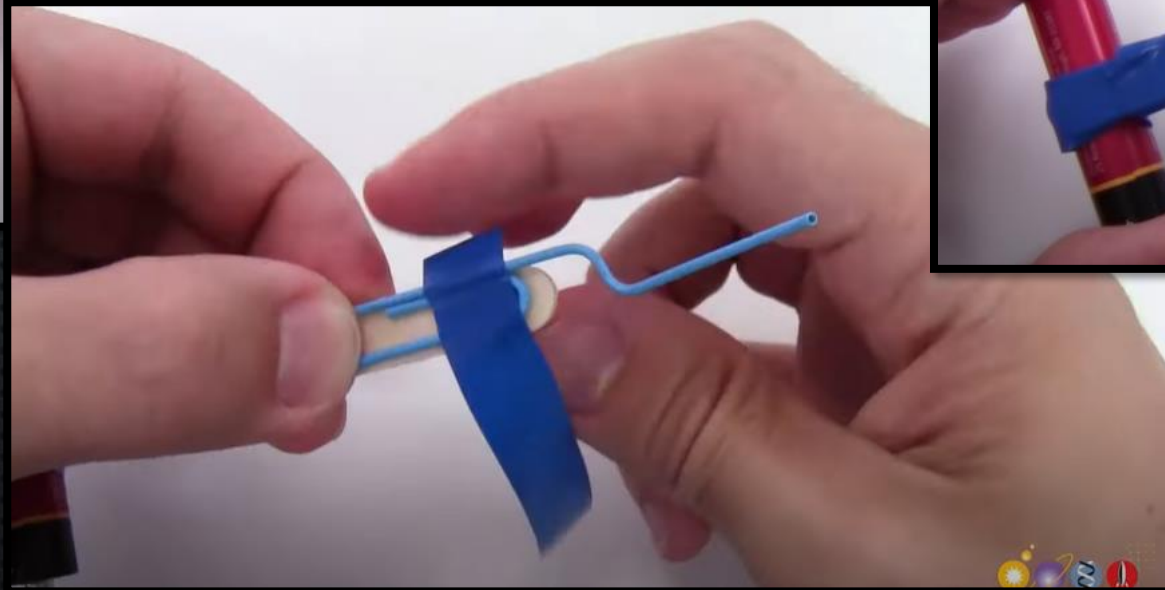
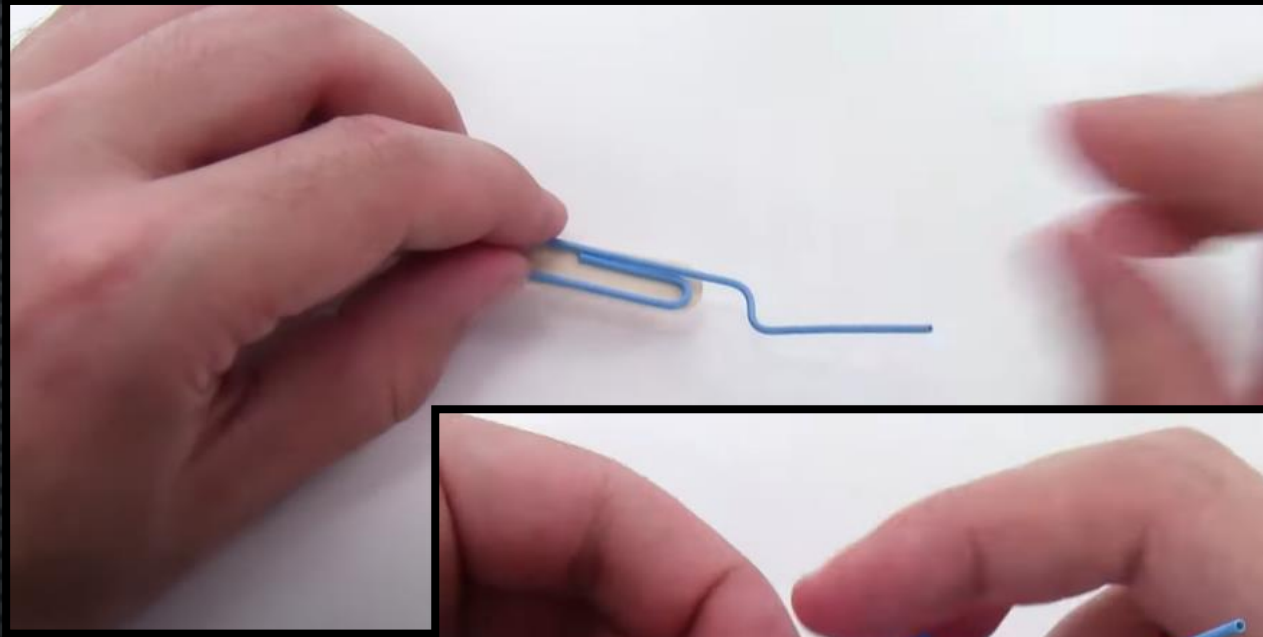
Tape the battery to the end of a
popsicle stick.



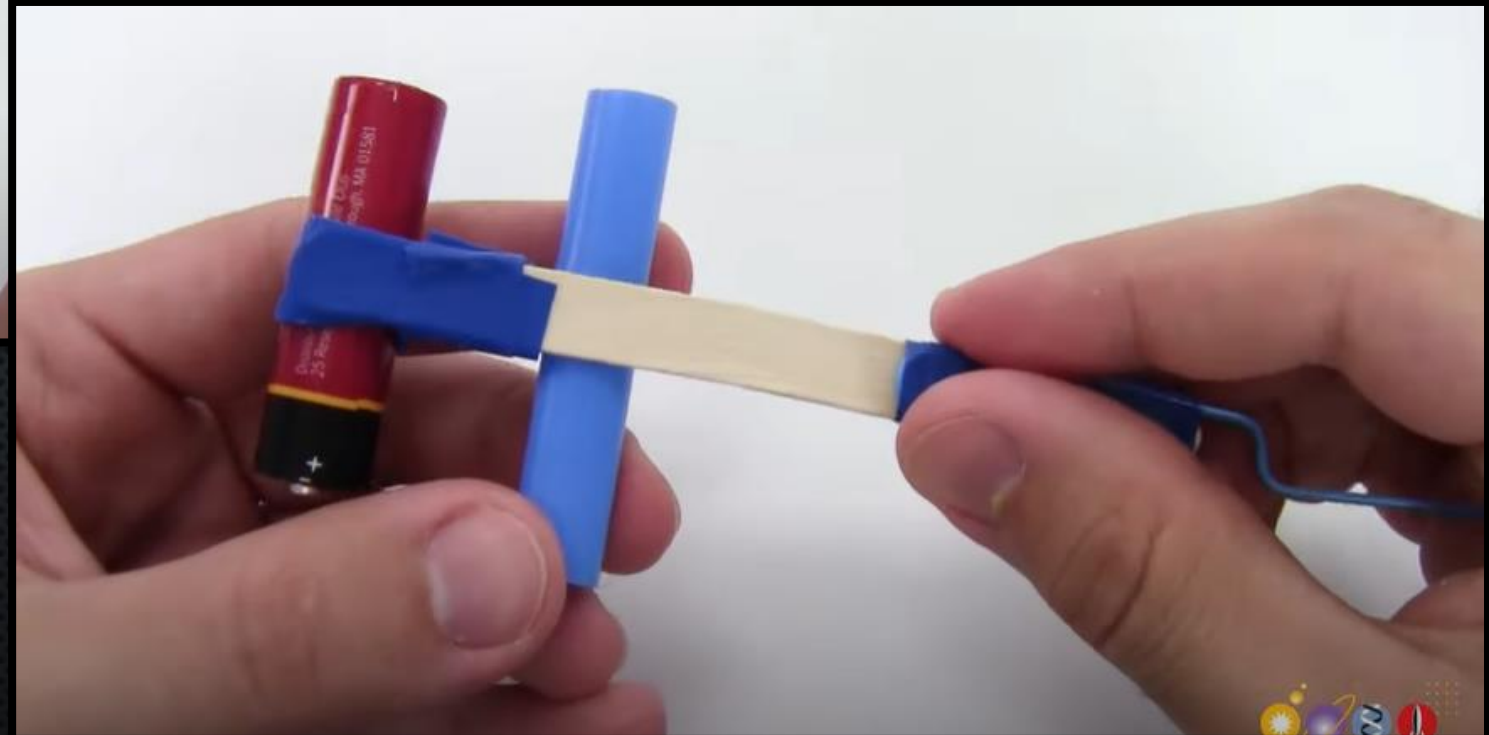
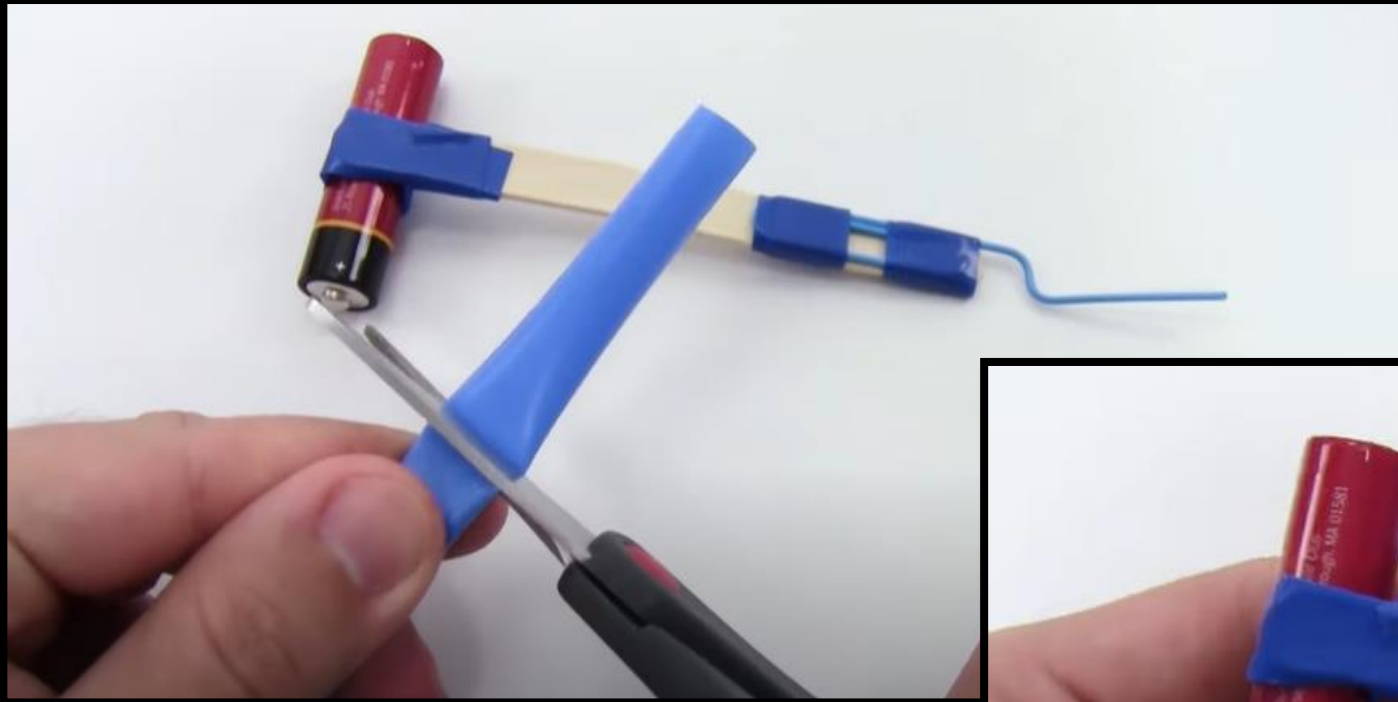
Straighten one end of a paper clip, leaving it bent slightly upward.



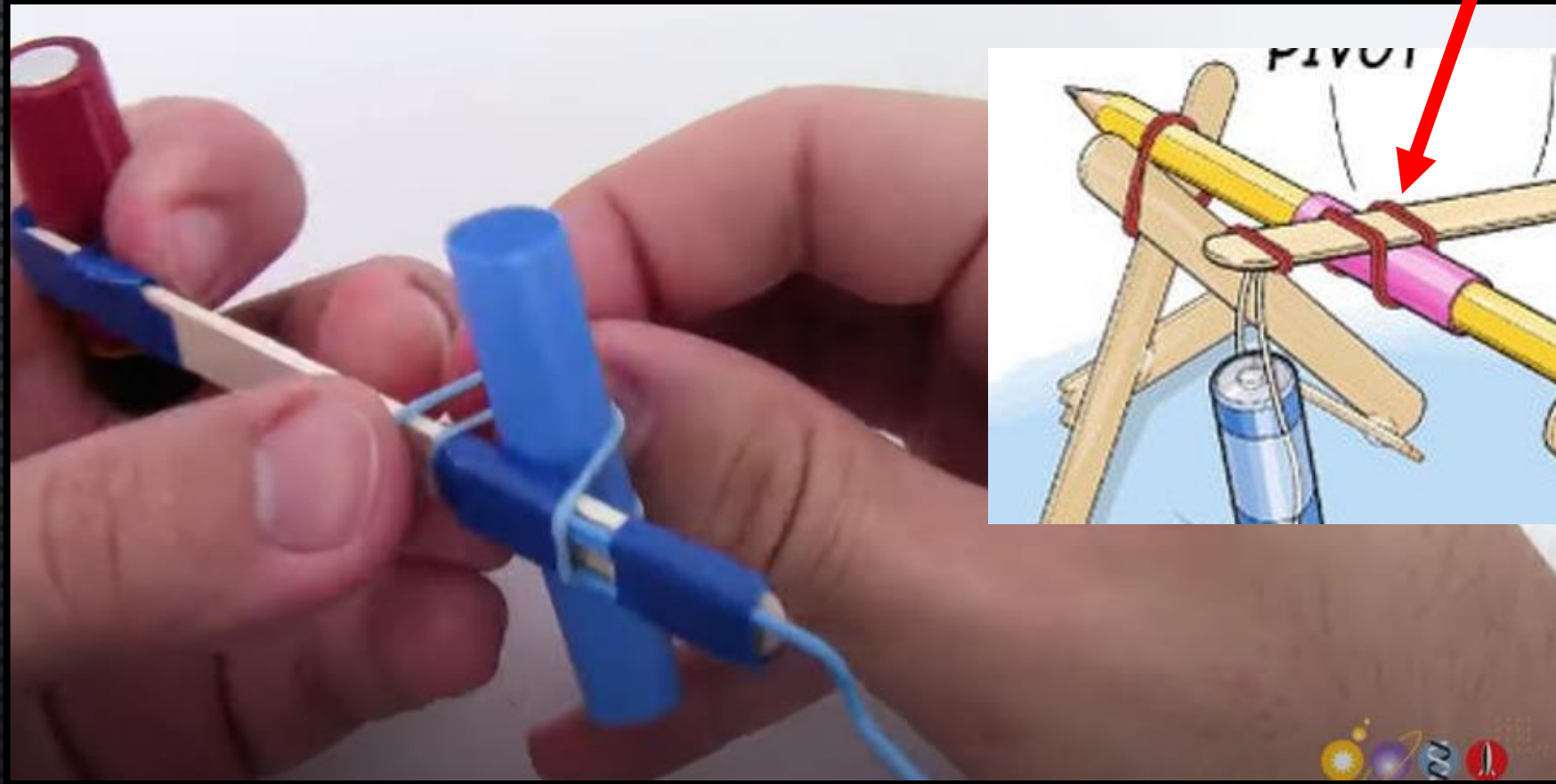
Tape it to the popsicle stick, with the straight end sticking out.



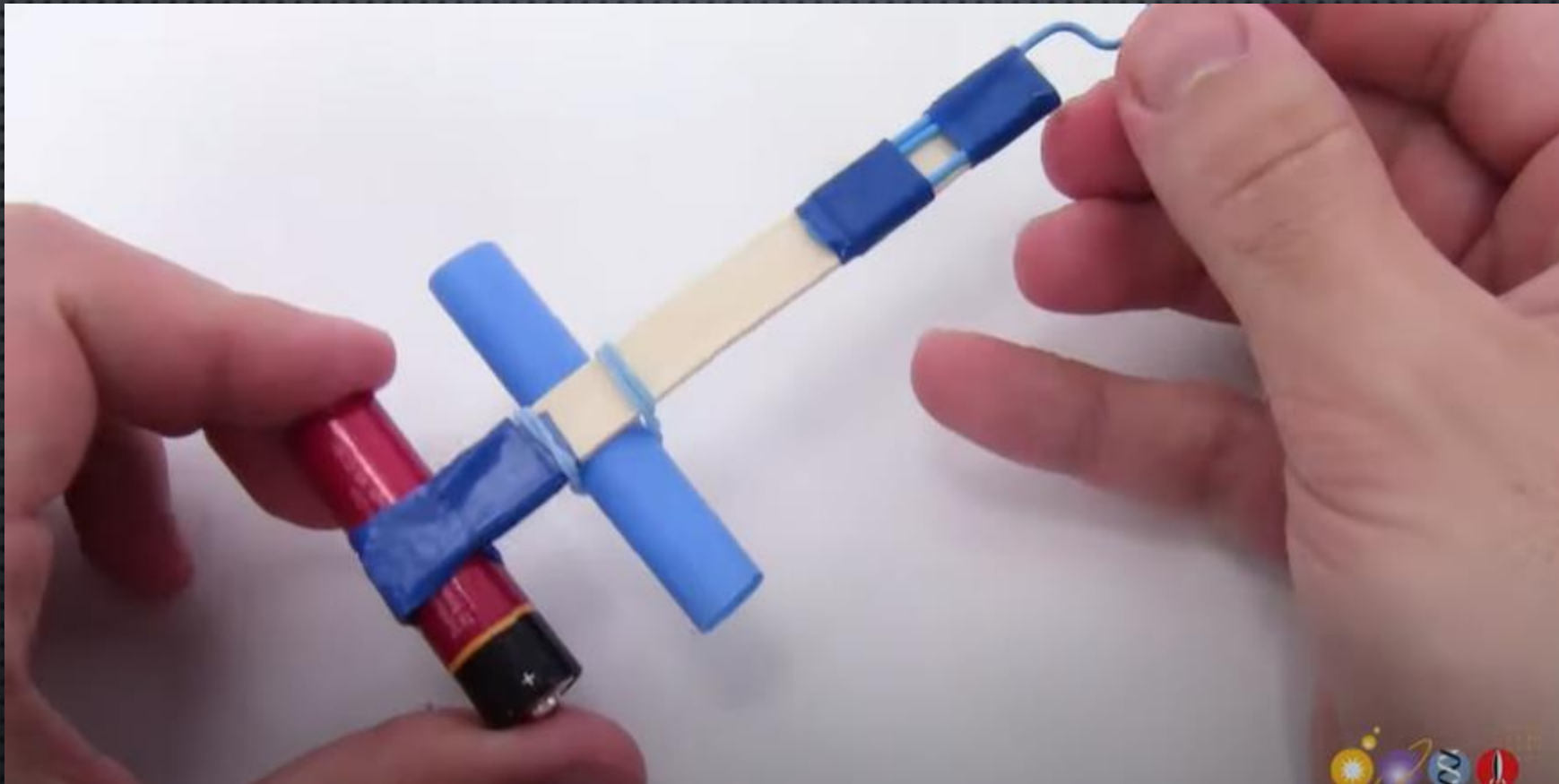
Cut a piece of the straw about the length of the battery.



Attach it to the popsicle stick with rubber bands.



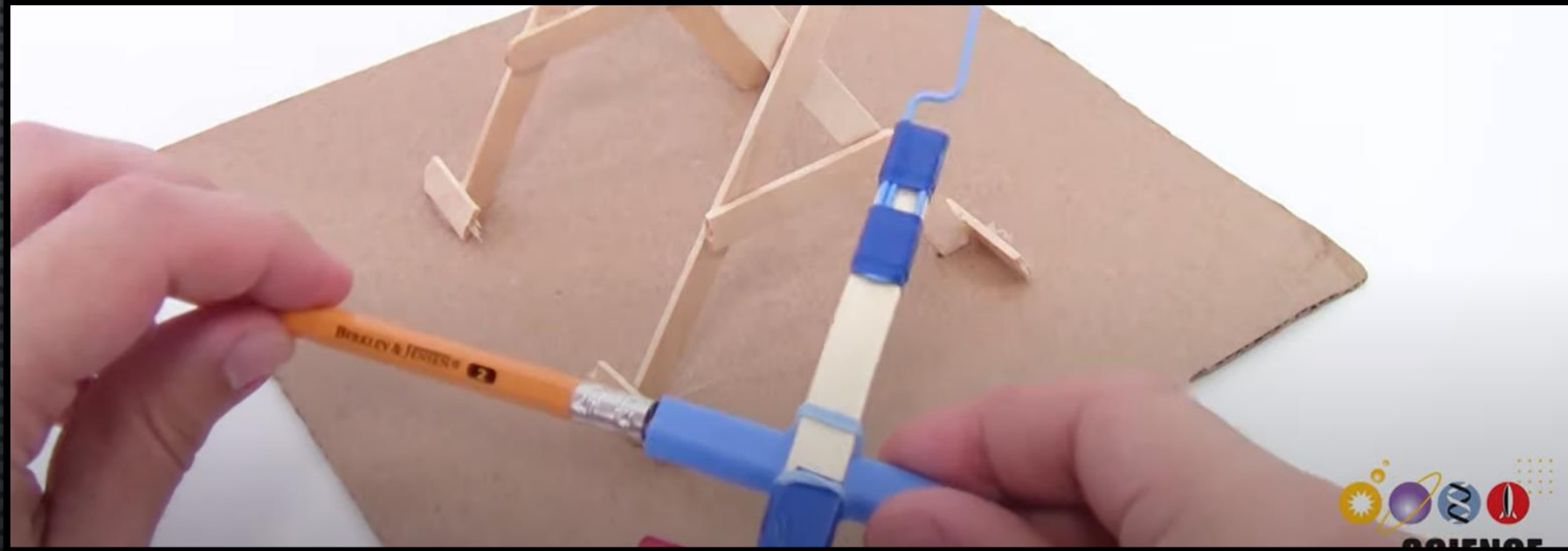
Position the straw closer to the battery than to the paper clip.



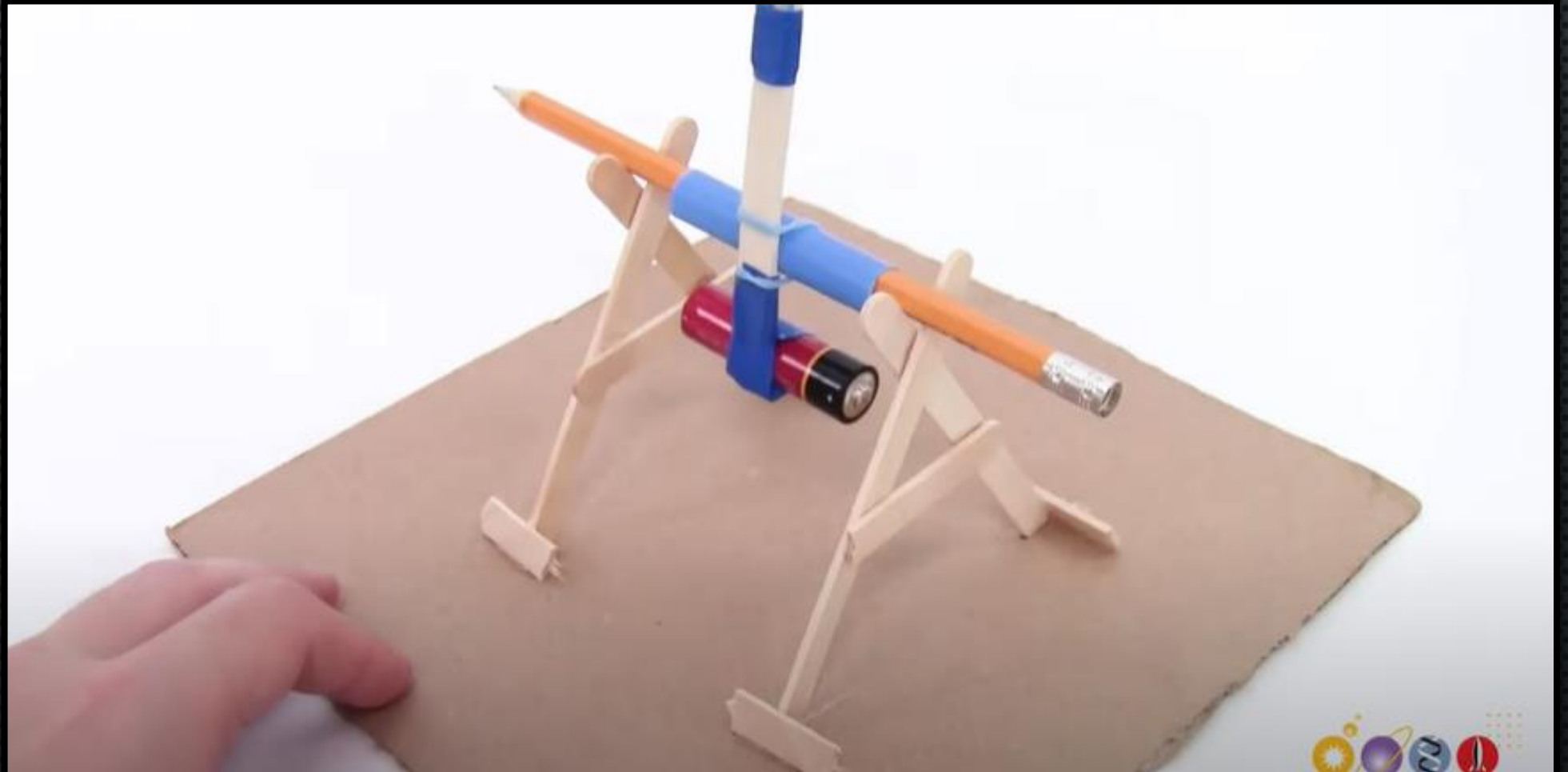
Remove the eraser from the pencil.



Thread the pencil through the straw.



Place the pencil in the notches on top of your frame.

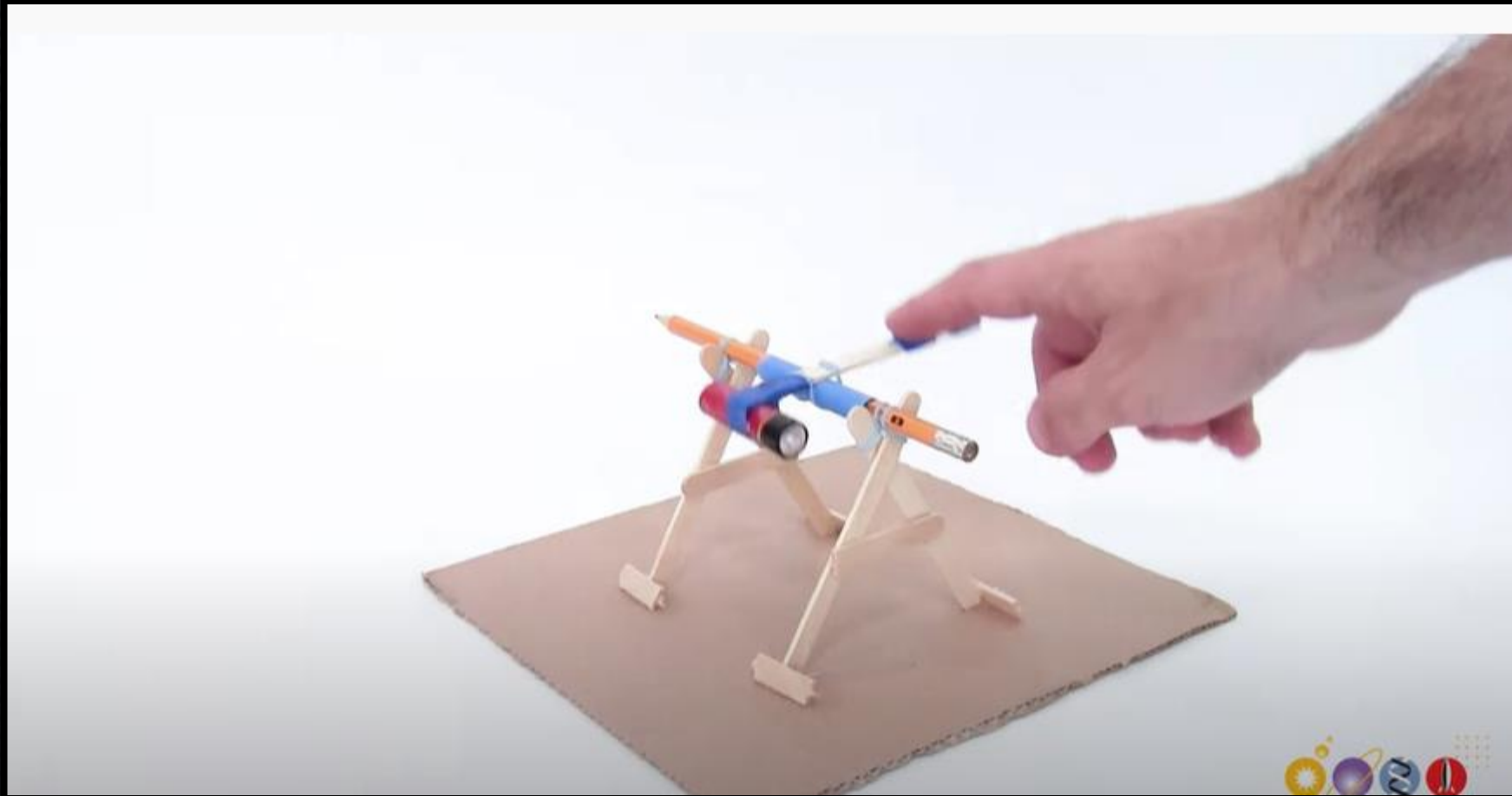


Hold the pencil in place with rubber bands.

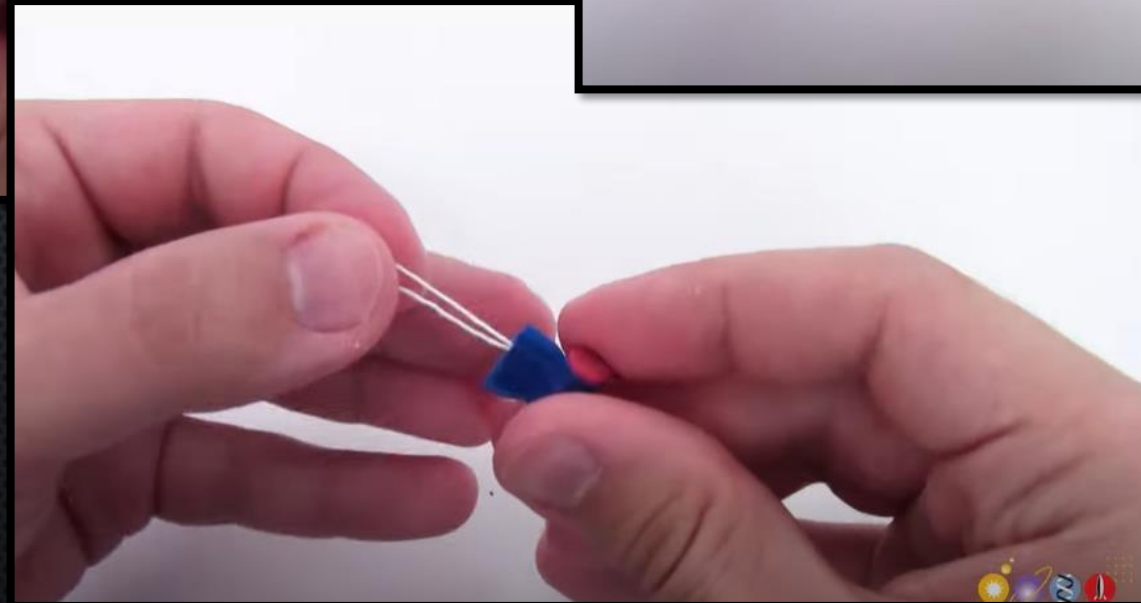
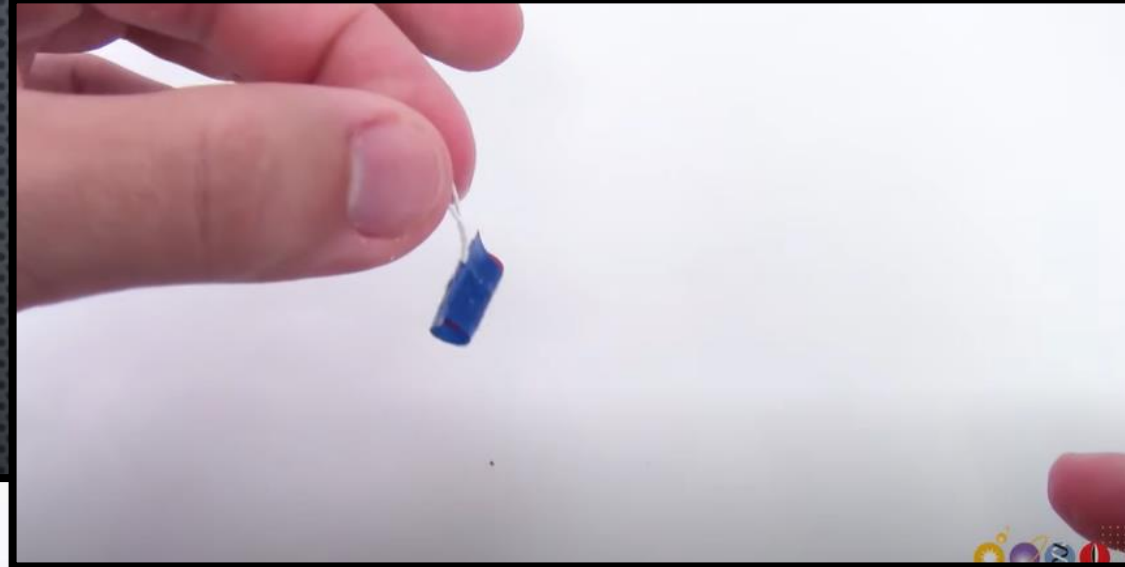
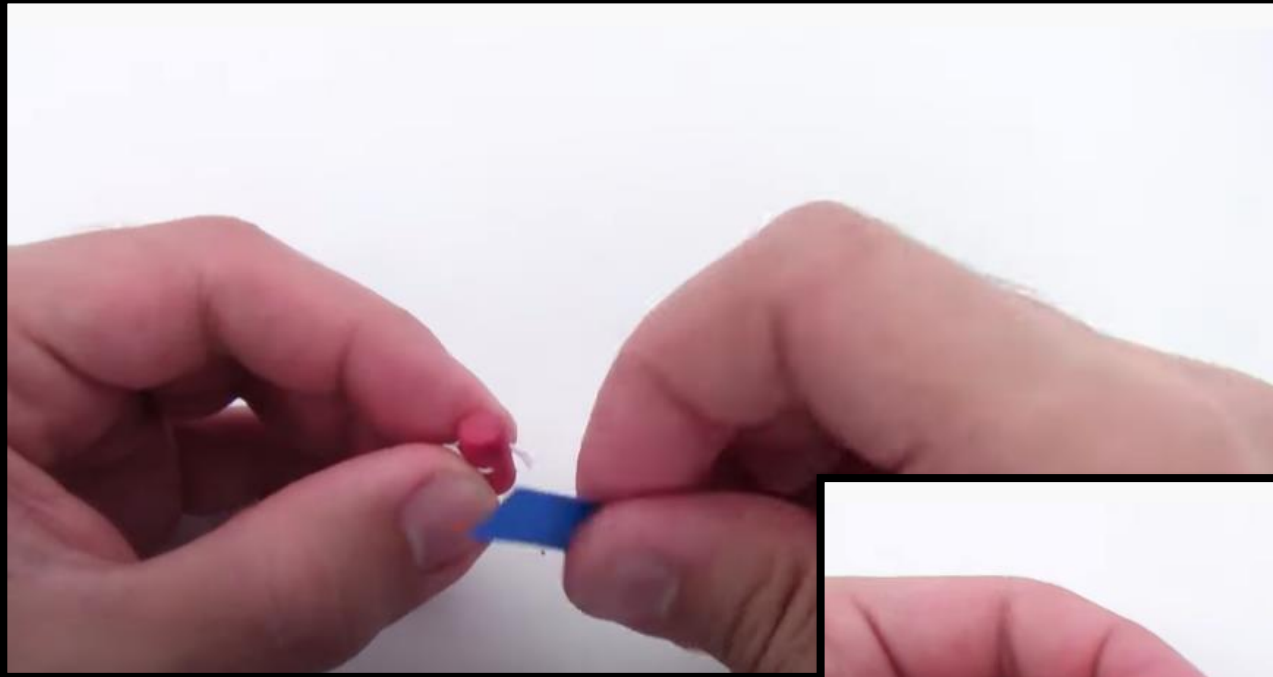


Do not use glue. This way you can remove the pencil to make adjustments if needed.

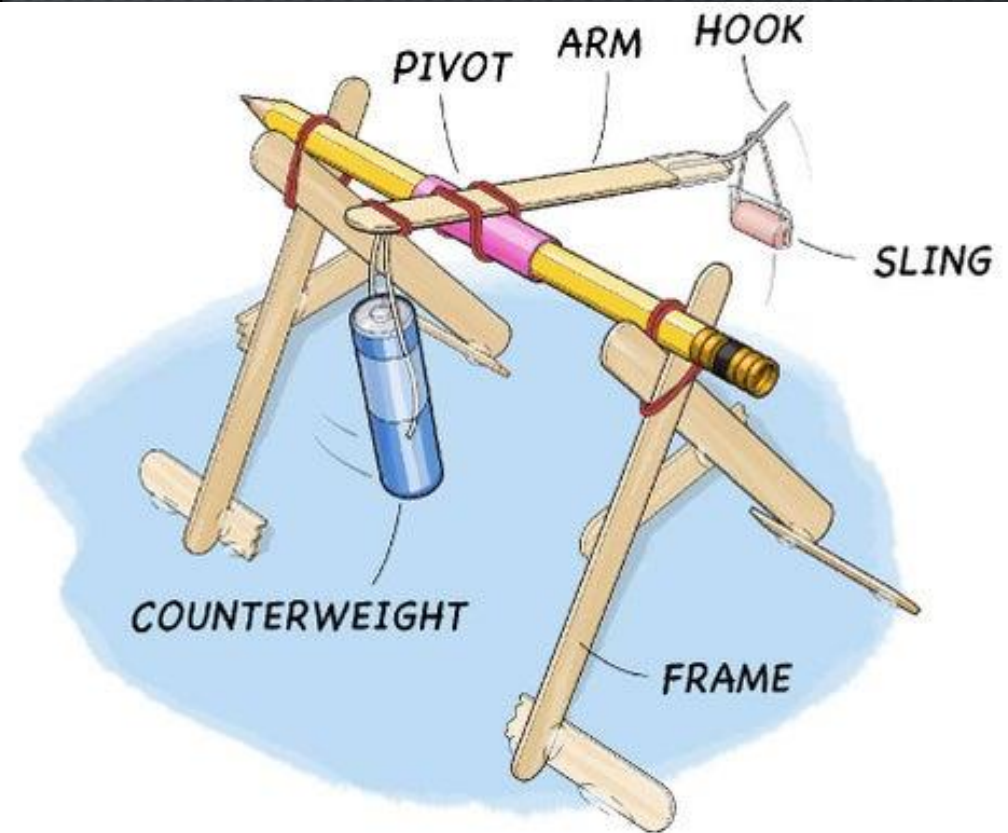
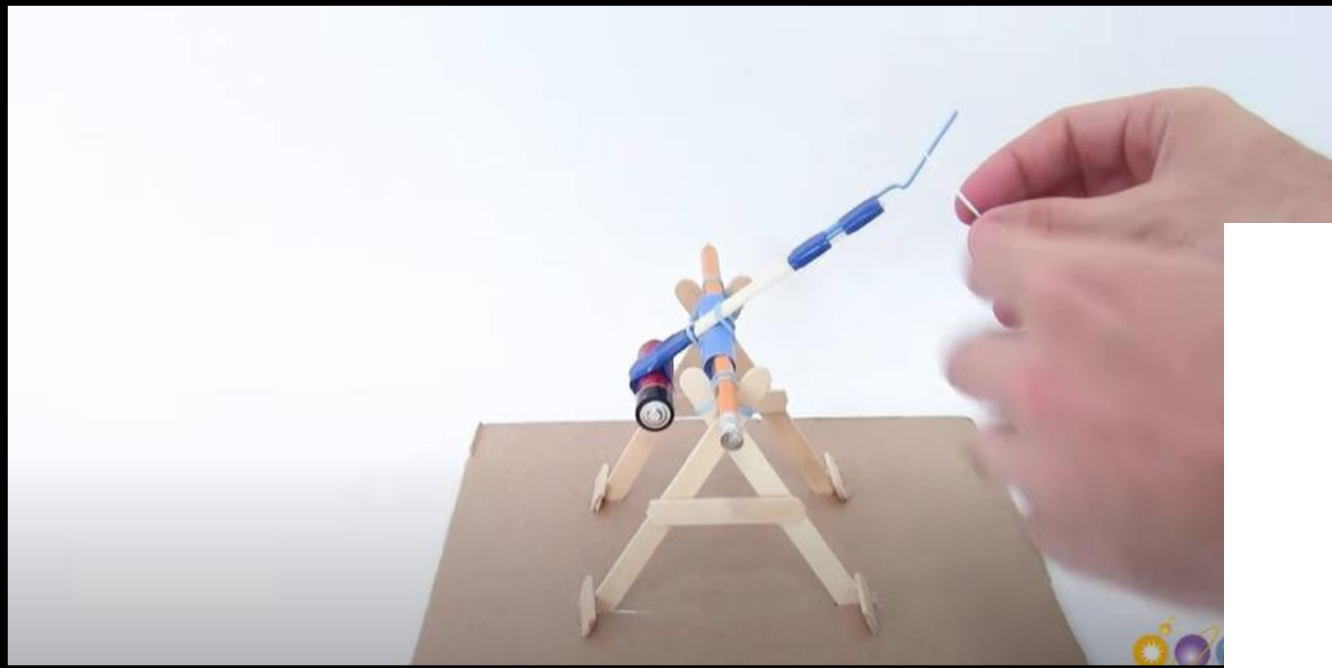
Make sure the popsicle stick rotates freely.



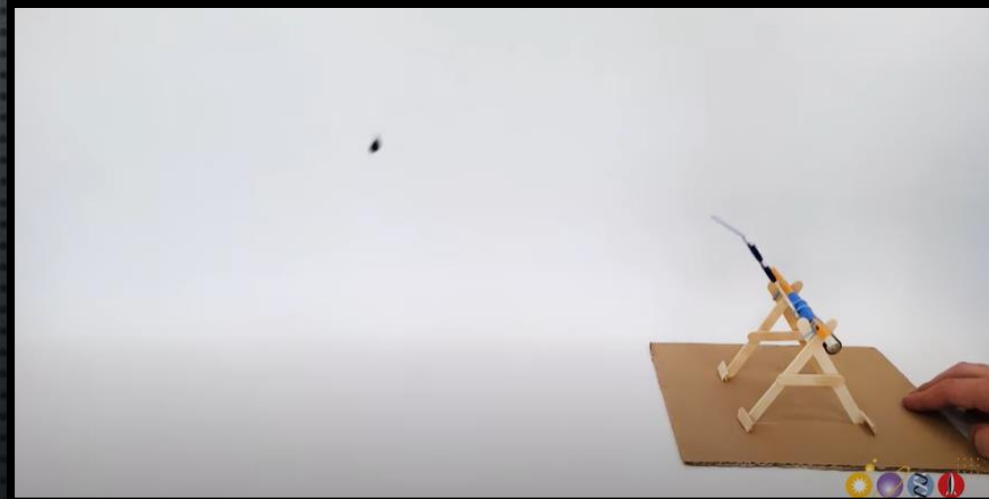
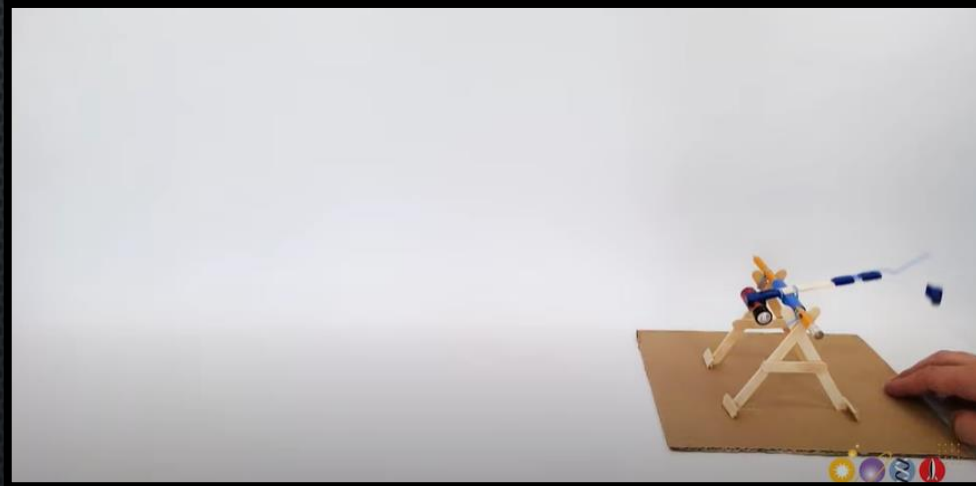
Tape a small loop of string to the eraser.



Hook the string onto the paper clip.



Pull down, then release to launch!



What adjustments can you make to launch farther?

FULL PRINTABLE LESSON:

[HTTPS://WWW.SCIENCEBUDDIES.ORG/STEM-
ACTIVITIES/PENCIL-TREBUCHET?FROM=YOUTUBE](https://www.sciencebuddies.org/stem-activities/pencil-trebuchet?from=youtube)

