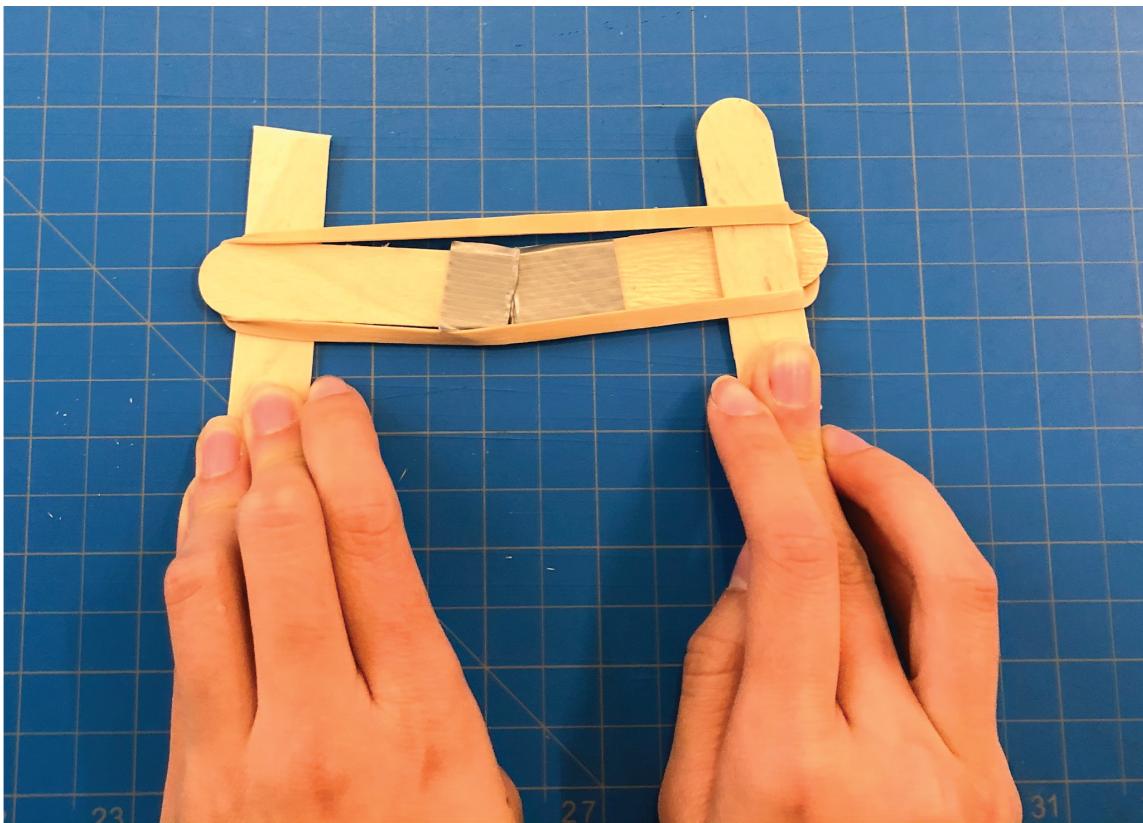




SHIFTING RHYTHMS

HOPPERS

Time Estimate: 1 hour



Tags: Design, Mechanical

What is a Hopper?

A hopper is a small mechanism that jumps off the floor or a table into the air. This module will show you how to build and launch them.

Here are a few things to think about once you've built the hoppers...

- Try flattening the hopper more or less before it jumps. What happens?
- Lay a jacket or shirt on top of the table and launch it off that. How does the surface you launch off of effect the hop?
- How could you change the design of the hopper to make it go higher?

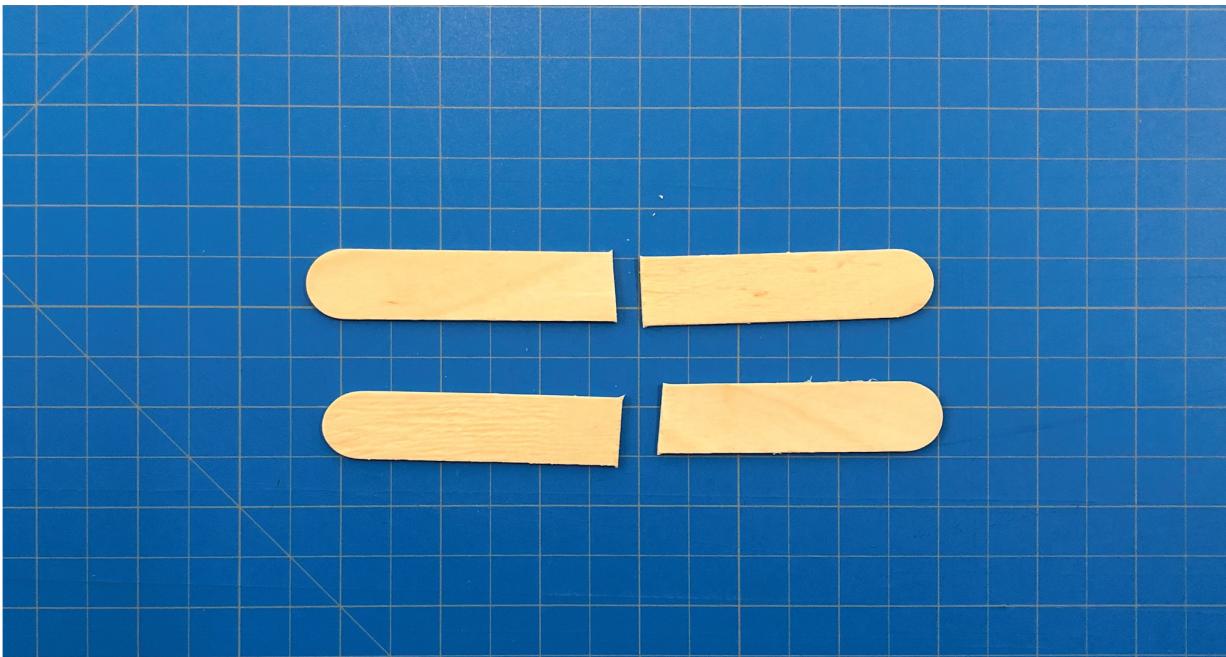
Part 1: Materials and Tools



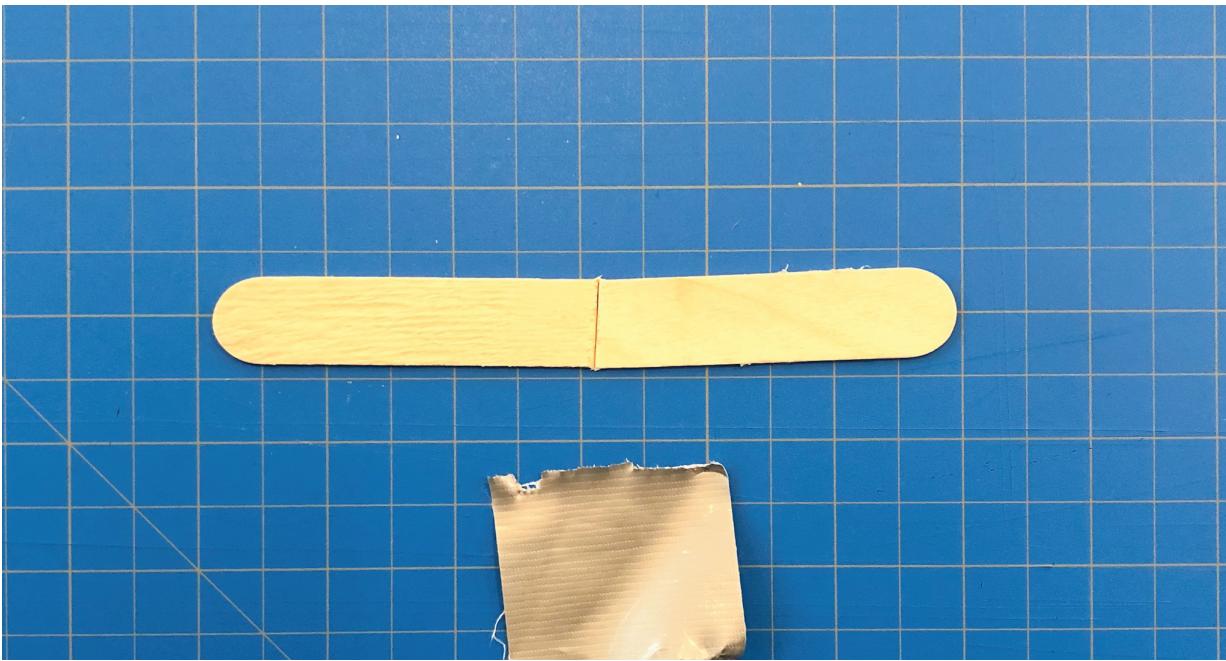
Each person will need...

- **2 Popsicle Sticks**
- **1 Rubber Band**
- **Masking Tape**
- **Scissors**
- **Hot Glue**
- **Paint (optional)**

Part 2: Making the Hopper

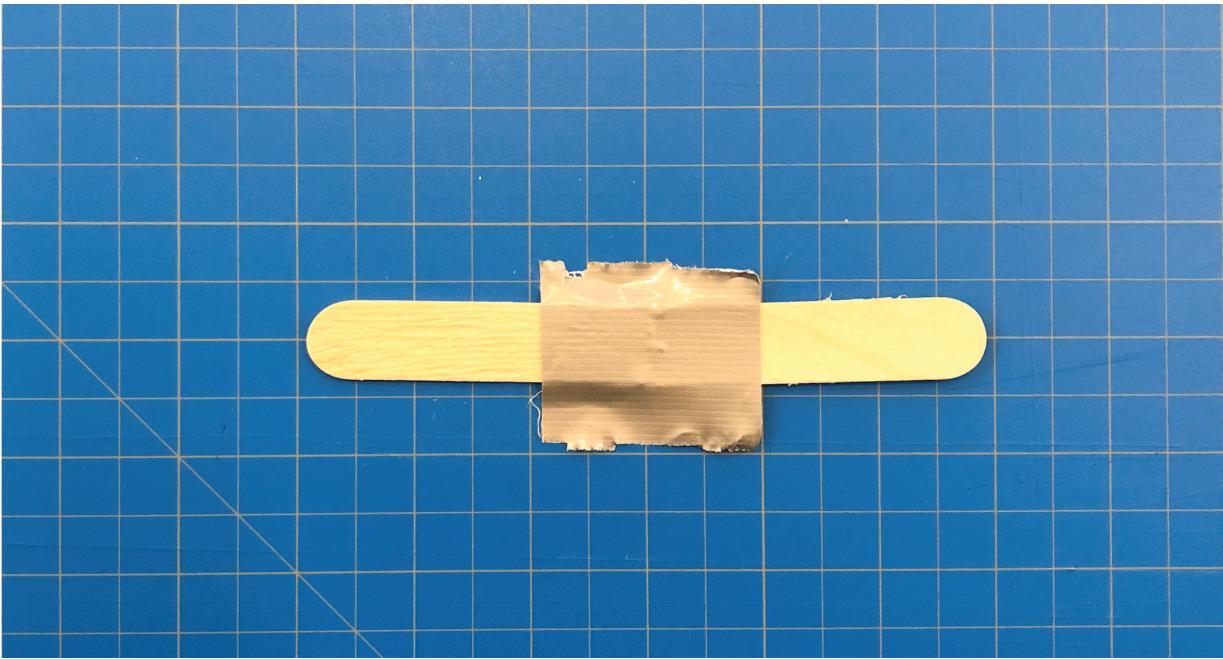


Cut both popsicle sticks in half with the scissors.

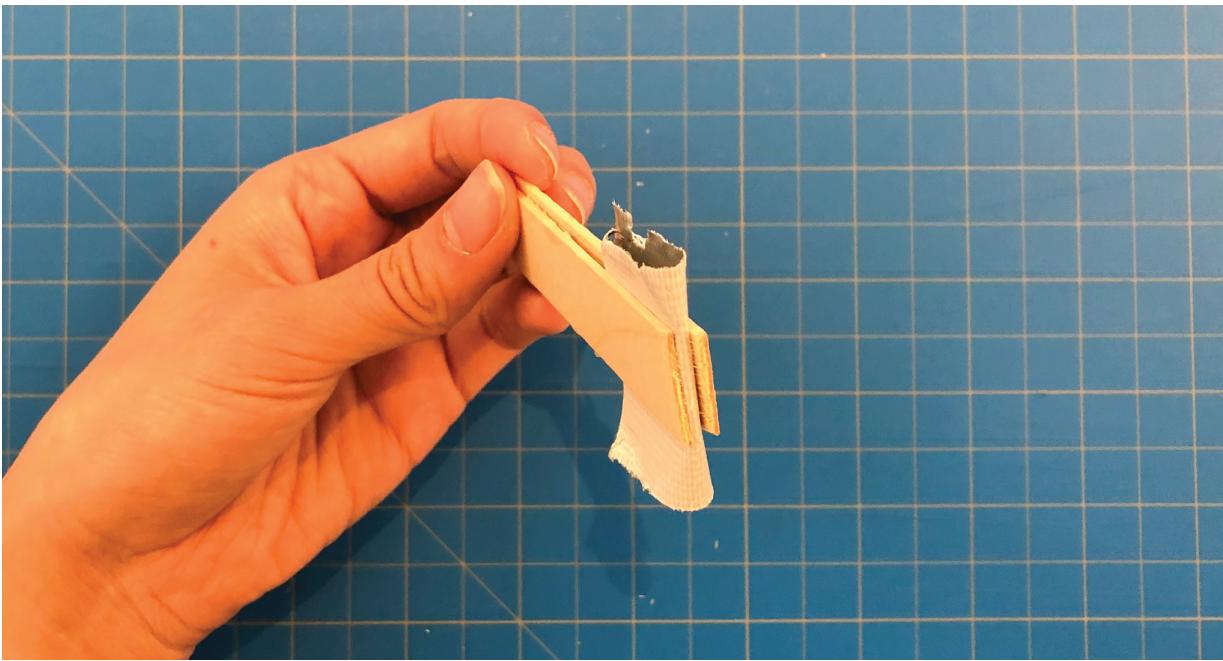


Lay the halves of one of the sticks back together.

Part 2: Making the Hopper

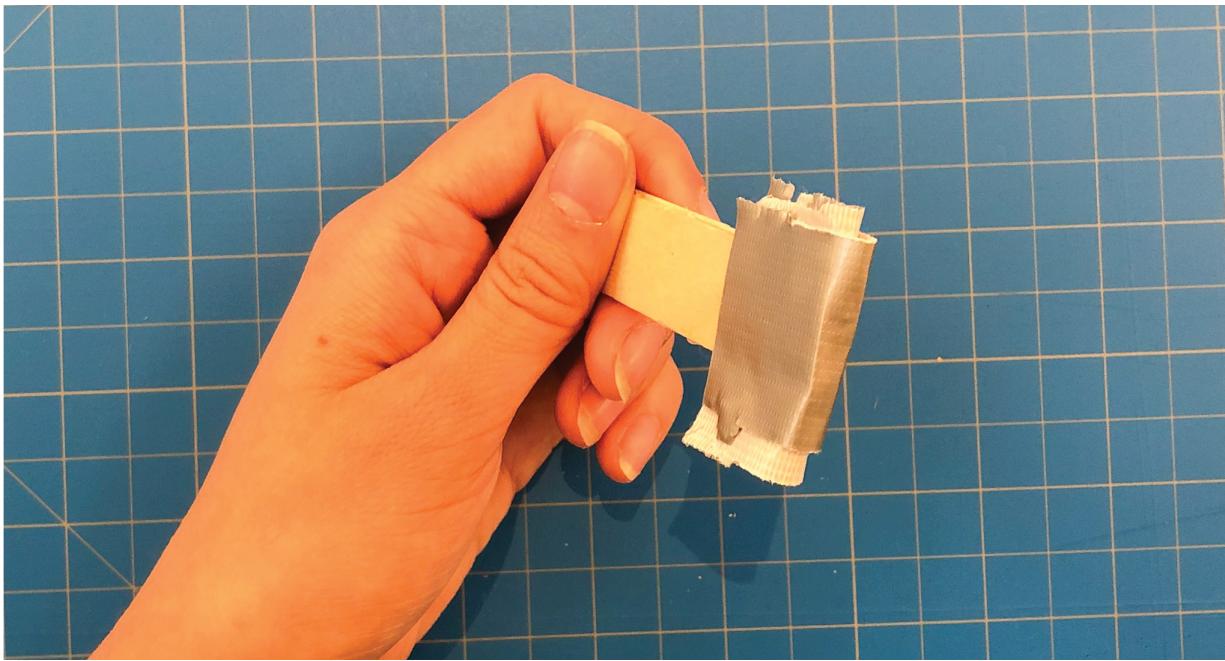


Tape them together. Leave the tape flat, don't wrap it.

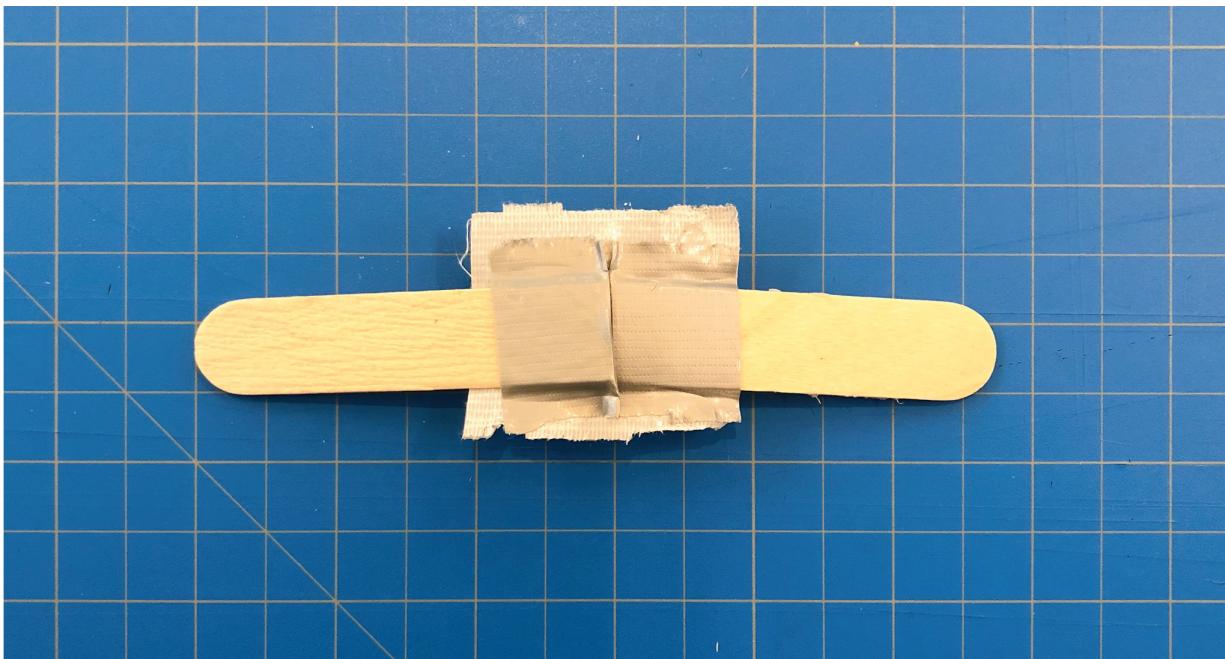


Fold it in half, with the tape on the inside of the fold.

Part 2: Making the Hopper

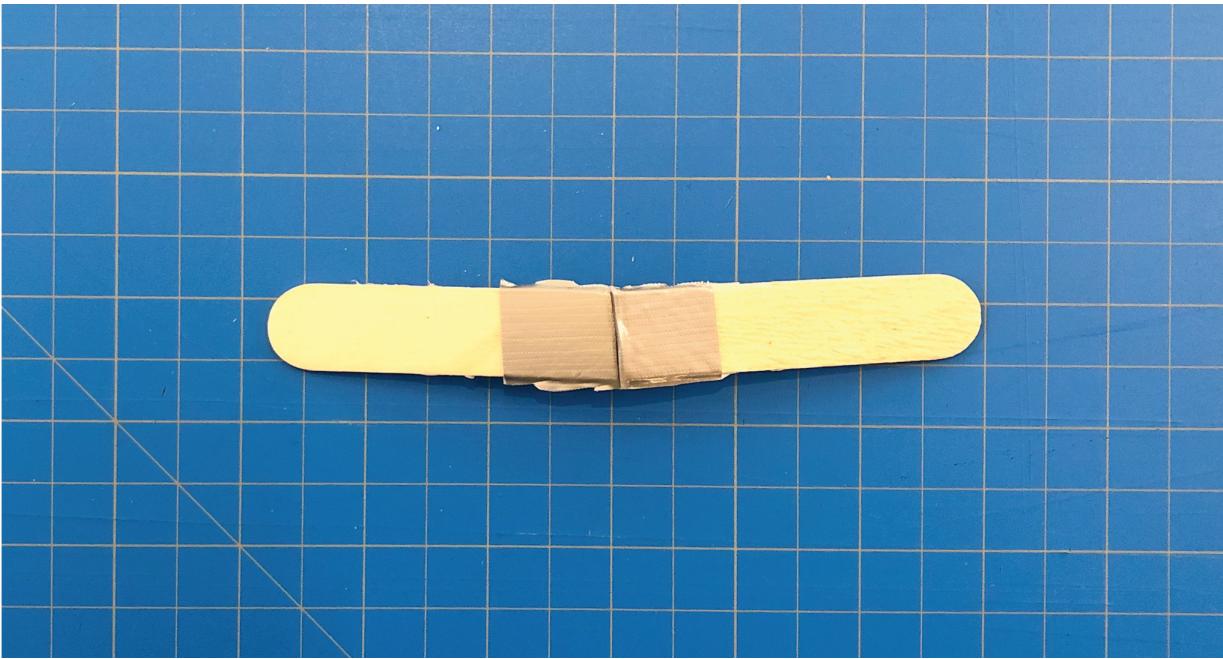


Put another piece of tape over the folded part, facing the other way.



It will now only fold one way. You've made a hinge!

Part 2: Making the Hopper

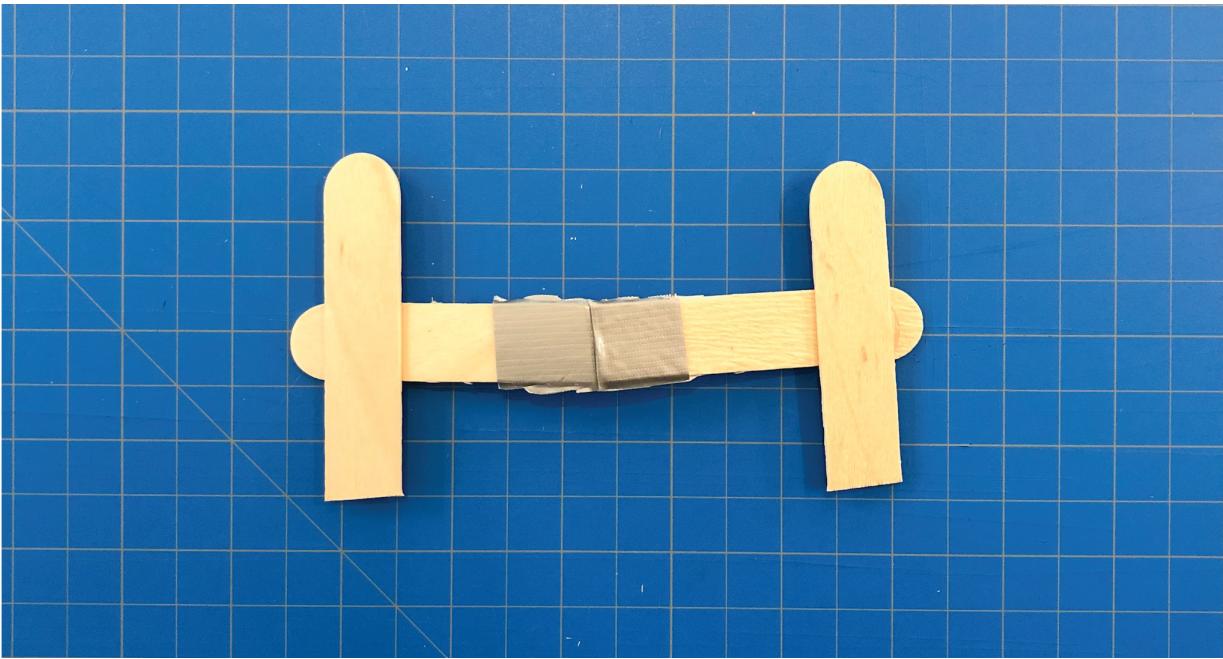


Unfold the hinge and lay it flat on the table. Trim the tape flaps off the sides.



Using a small amount of hot glue, glue one of the other half-sticks to your hopper, so it is shaped like a T.

Part 2: Making the Hopper

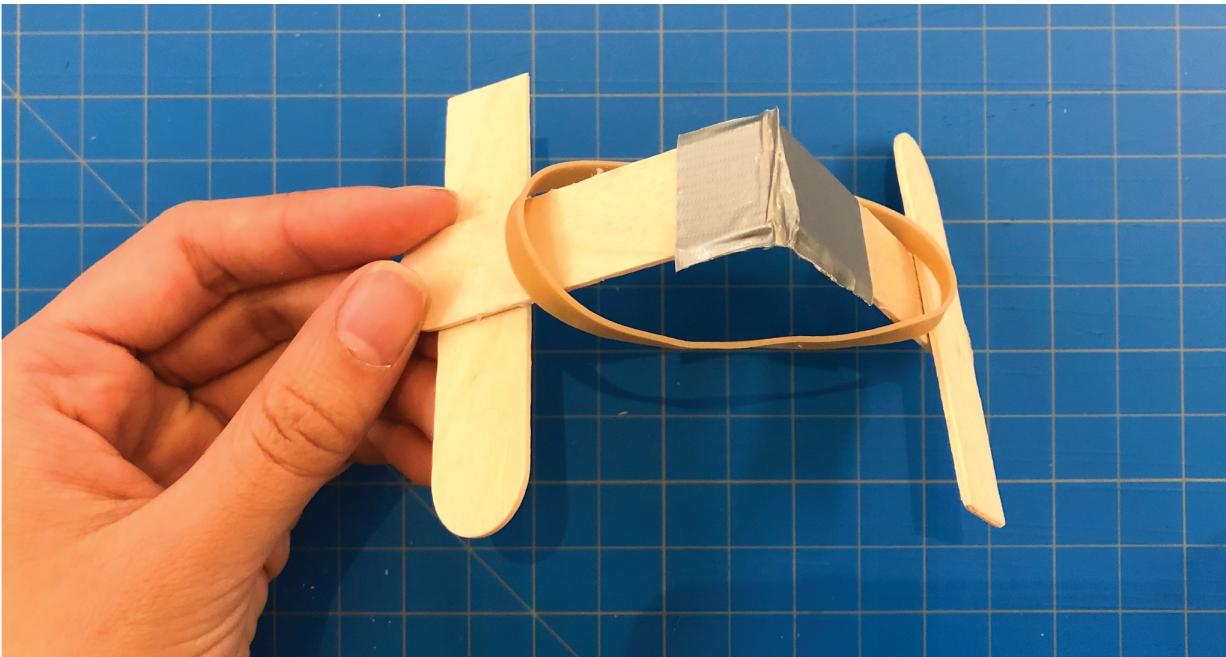


Repeat the process to make another T on the other end.

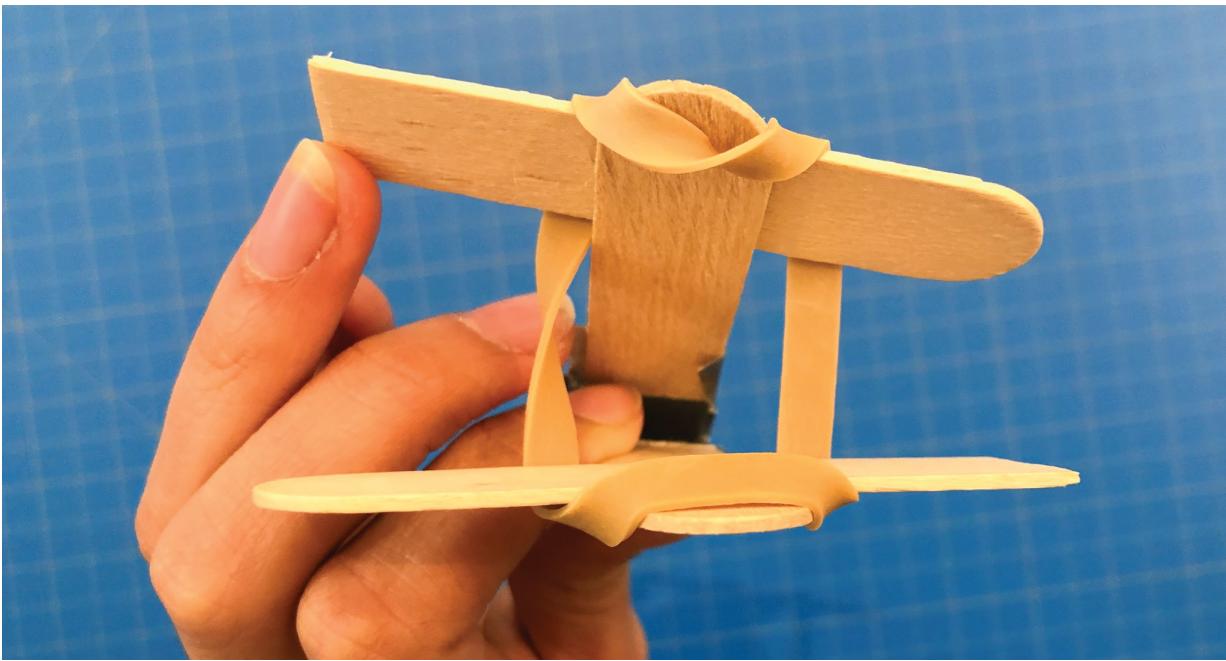
Now just wait for the glue to dry. You've made a hopper!

Now is a good time to paint or decorate your creation if you have extra time.

Part 3: Making it Jump

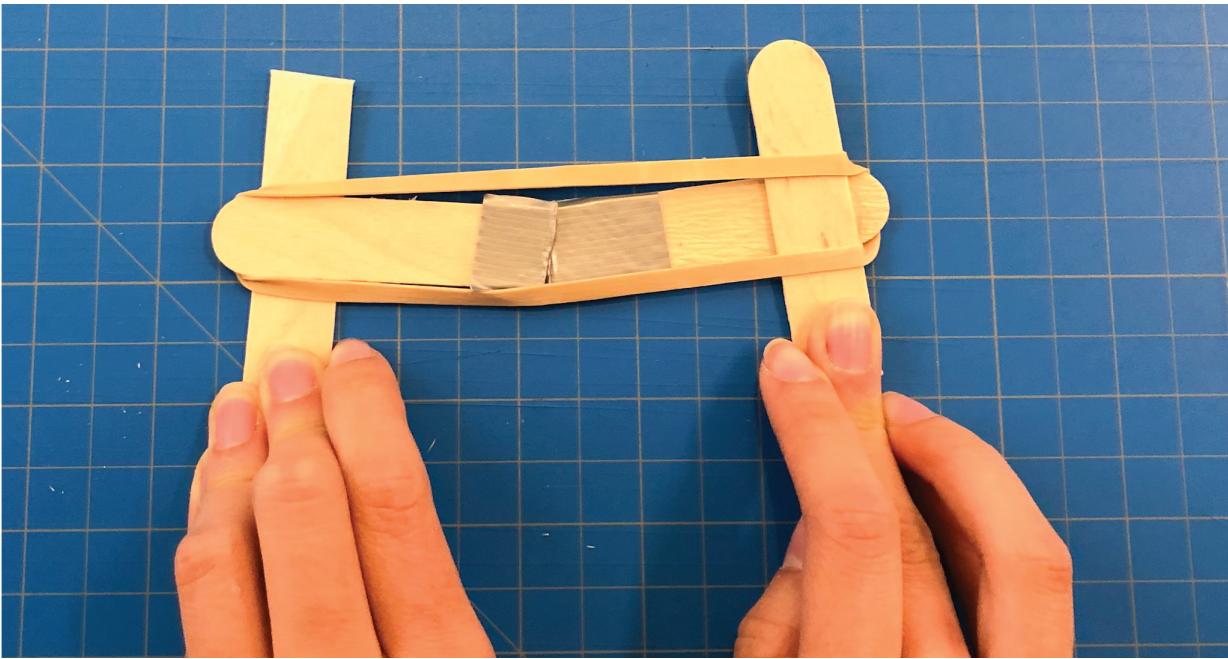


Loop a rubber band around the point of the hopper.



Wrap both ends of the rubber band around the ends of the hopper.

Part 3: Making it Jump



Press the top of the hopper down so it flattens against the table. Don't lean right over it!

Let go of your hopper and watch it jump!