

Strawbees®



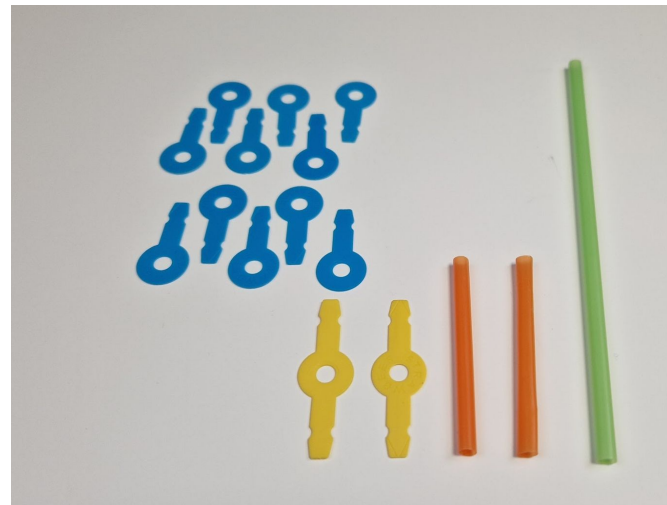
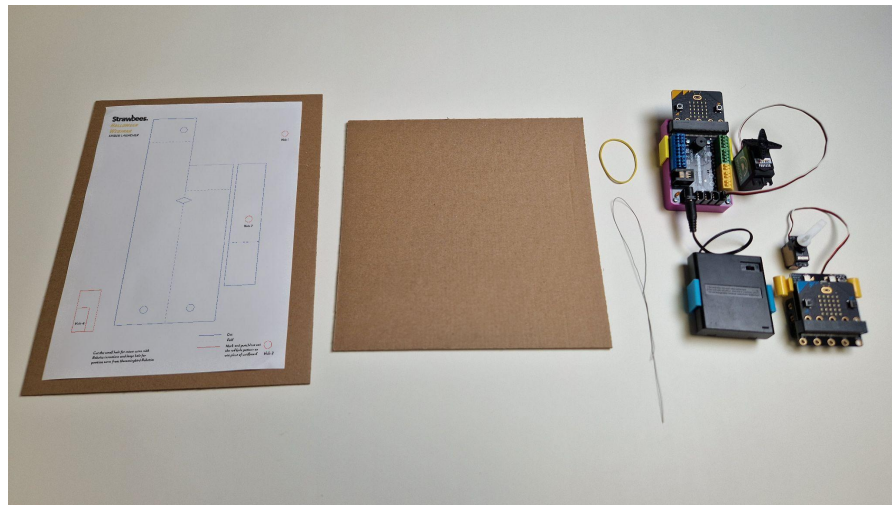
Spider launcher

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Spider launcher

What you need



Materials

- Cardboard & Template
- String
- Rubberband
- Tape or glue
- Micro:bit
- Robotic Inventions or Hummingbird kit

Strawbees

- 11 x 1:s
- 2 x 2:s
- 2 x Orange Straw
- 1 x Green Straw

Download and print template pdf

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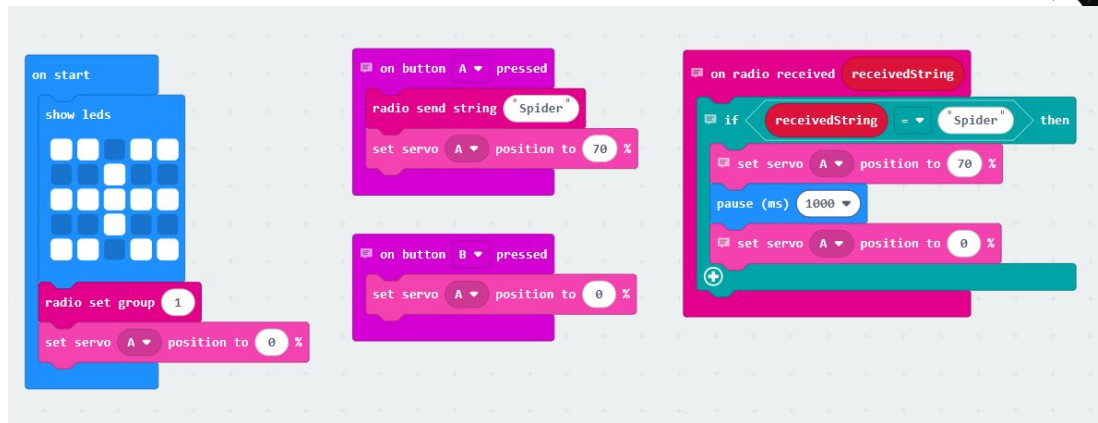
1. Program the micro:bit

Download the following code to your micro:bit or challenge your students to figure out the code.

<https://makecode.microbit.org/S70203-77812-40982-97842>



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Program two micro:bits with the same code to be able to try out the remote function.

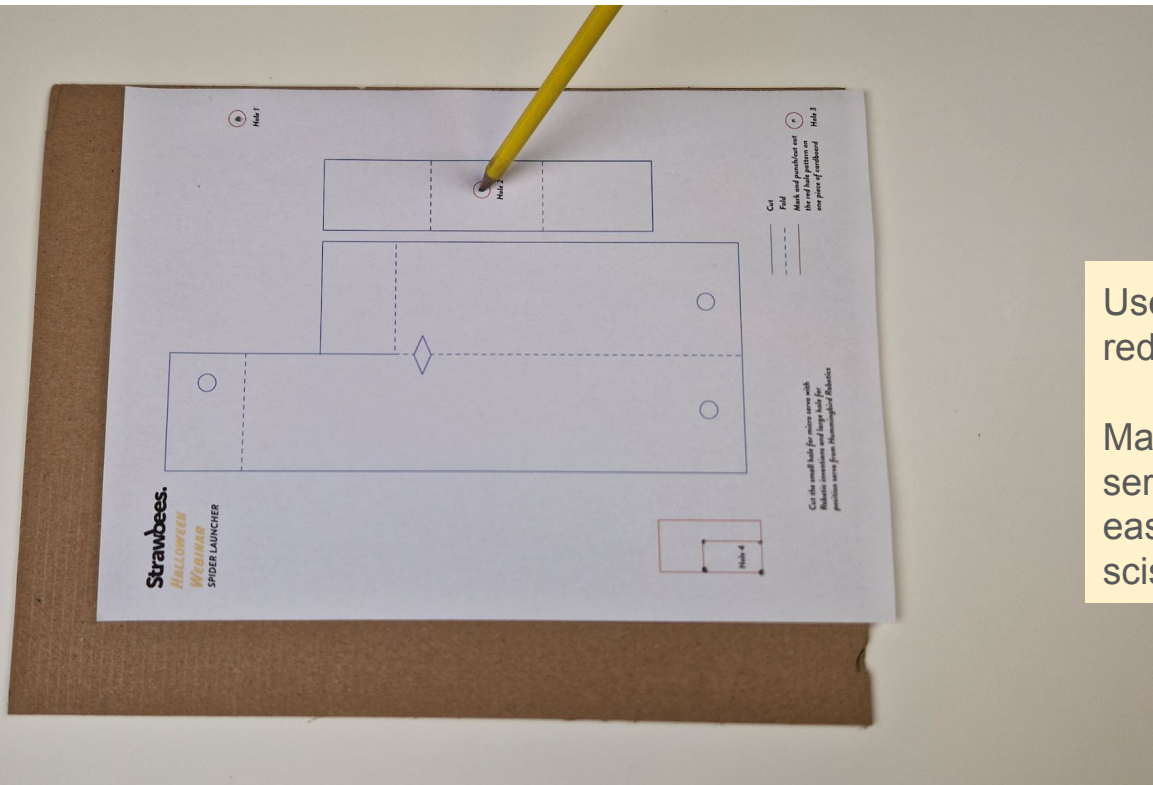
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2. Mark out the holes in the big piece of cardboard.



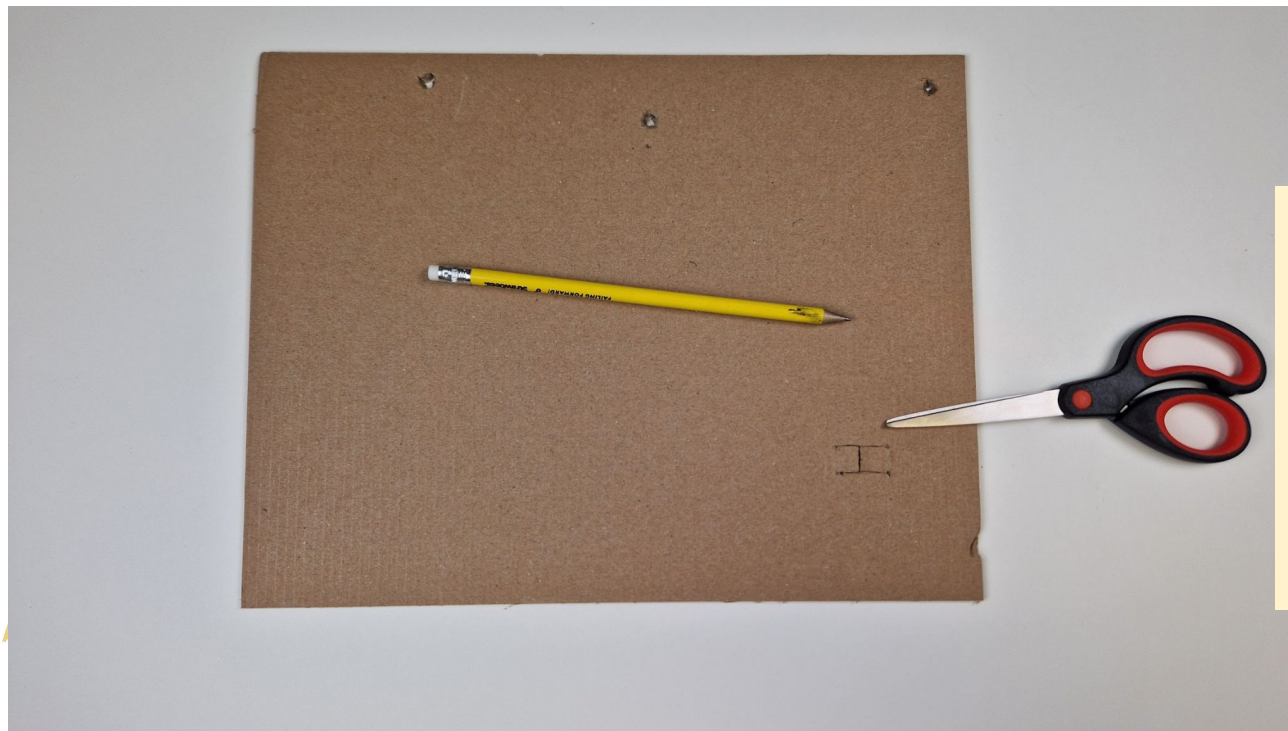
Use a pencil tip to mark the red hole positions.

Mark the corners of the the servo hole as it makes it easier to cut with a knife or scissors later



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3. Punch out the holes in a big piece of cardboard.



Push the pencil through the holes in the top.

Use a knife or a pair of scissors to cut the servo hole.

Tip: Make an H shaped cut out as it helps support the servo motor

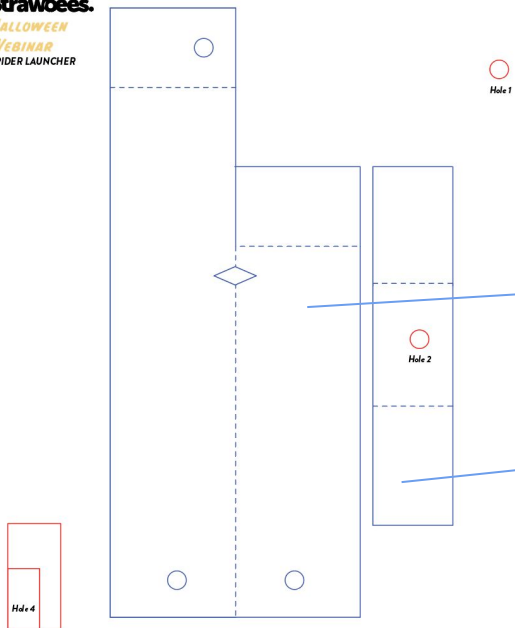


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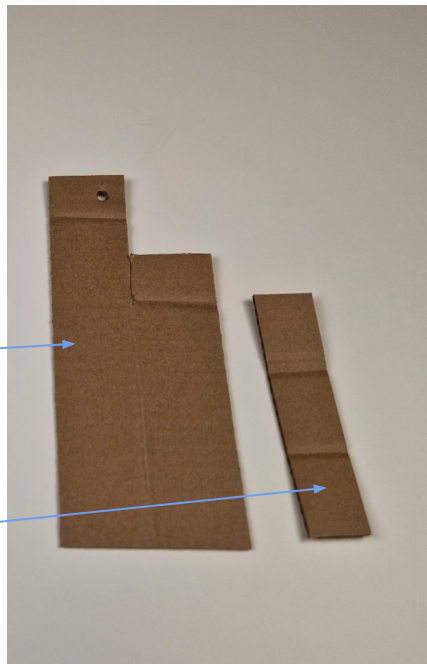
4. Cut out the cardboard templates for the shooting arm

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Cut the small hole for micro servo with Robotic inventions and large hole for position servo from Hummingbird Robotics

— Cut
- - - Fold
○ Mark and punch/cut out the red hole pattern on one piece of cardboard



1. Cut out the paper templates if you want to make it easier to trace them onto cardboard.
2. Cut out the shapes of the blue outline pieces. Wait with the holes until the beam is glued.
3. Mark the dotted creases with a ruler so it is easier to fold

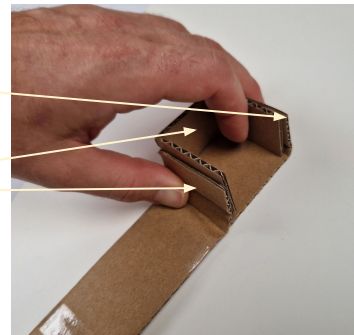
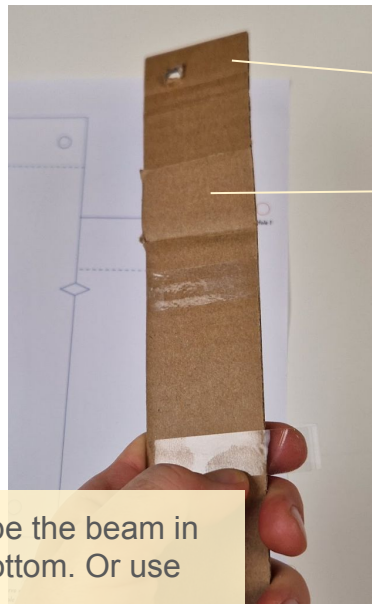


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5. Tape or glue the beam



Fold and then tape the beam in the top and the bottom. Or use glue and let it dry.



Fold the small piece of cardboard and then tape it to the folded up edges of the beam.



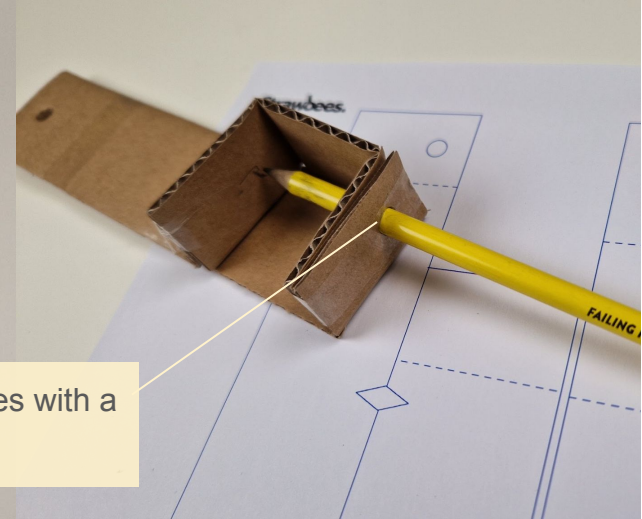
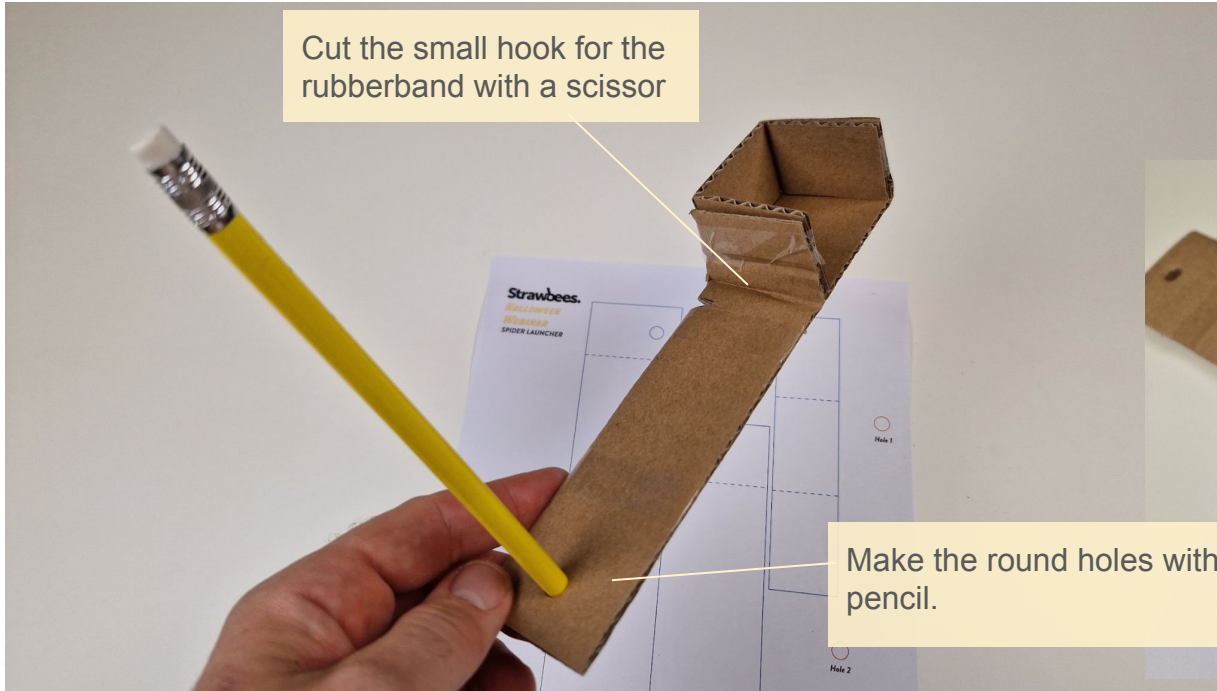
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6. Finish the launching arm by making the rest of the holes on the beam.



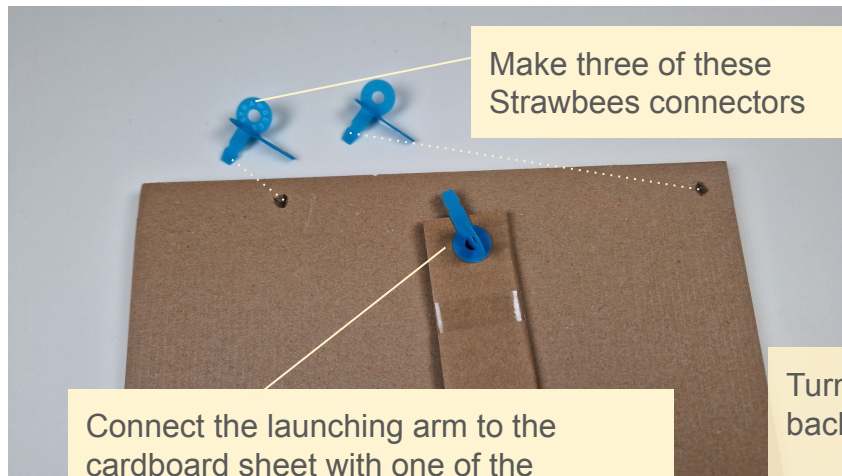
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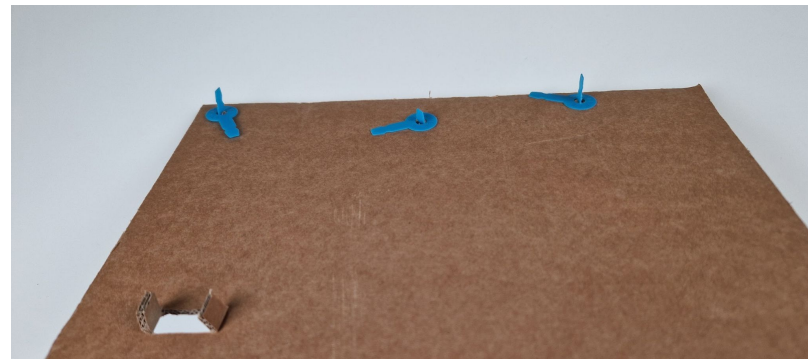


7. Connect the beam and support Strawbees



Make three of these Strawbees connectors

Connect the launching arm to the cardboard sheet with one of the connectors. Push the other two connectors into the holes as marked



Turn the cardboard sheet over and secure with Strawbees from the back.

Make a tight connection for the support beams on the sides by squeezing the Strawbee onto the leg.

Make a loose connection (as in image above) for the center Strawbee as this needs to be able to spin easier.

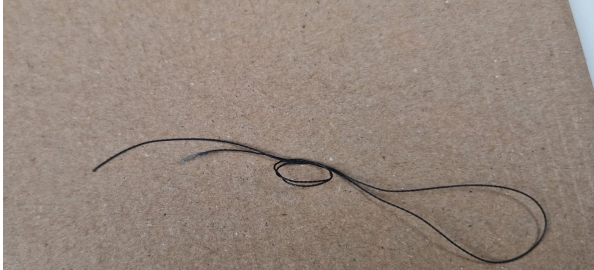
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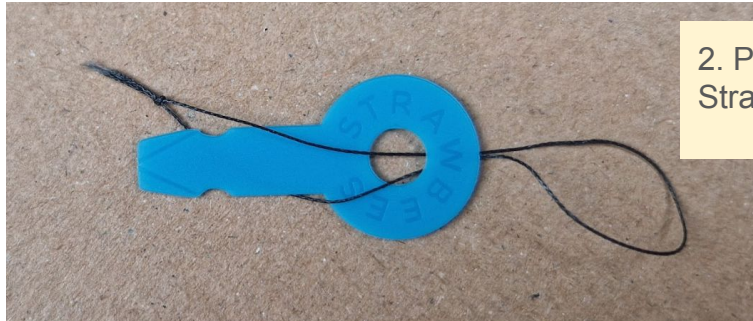
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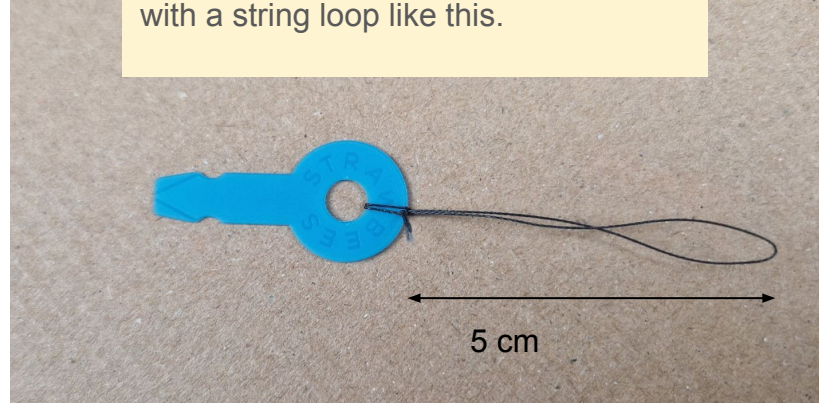
8. Make a String loop Strawbee to use as a catch for the launching arm



1. Make an approximately 6-8 cm loop of string by tying it folded like this.



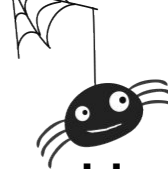
2. Push the string loop through a Strawbee and over the leg like this



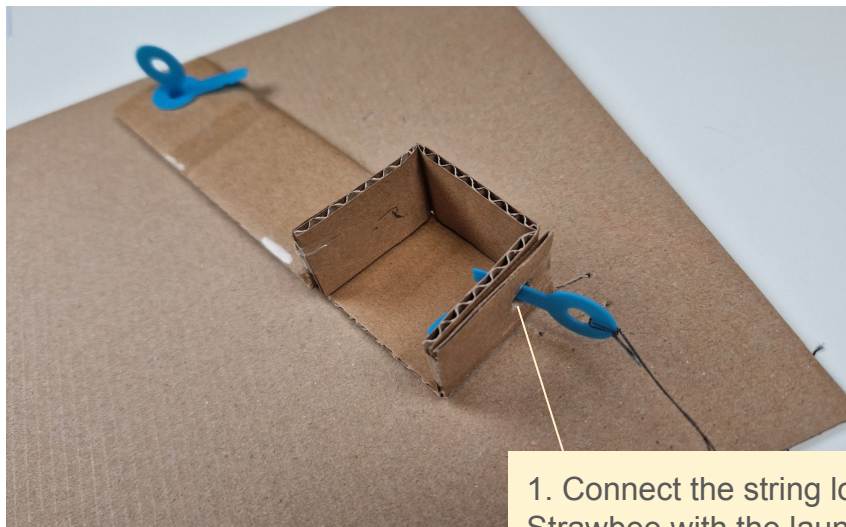
3. Tighten it so you have a Strawbee with a string loop like this.



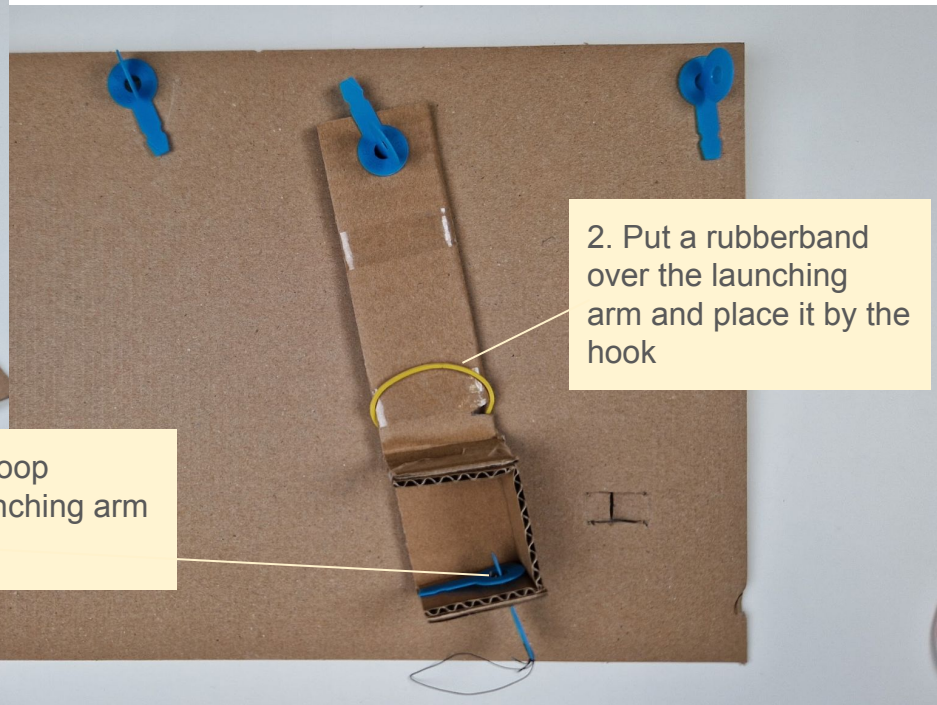
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9. Connect the String loop and rubber band to the launching arm



1. Connect the string loop Strawbee with the launching arm like this.



2. Put a rubberband over the launching arm and place it by the hook

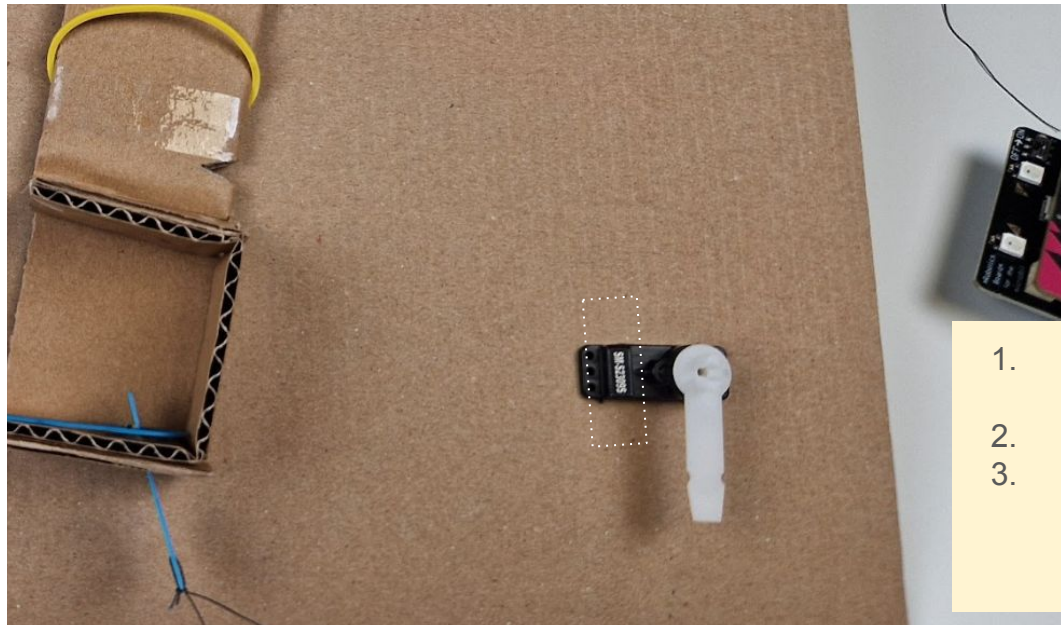
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10. Attach the servo through the servo hole.



1. Put the Servo cable in through the hole first.
2. Push the servo through the hole.
3. Optionally secure the servo with a piece of tape (see dotted line)

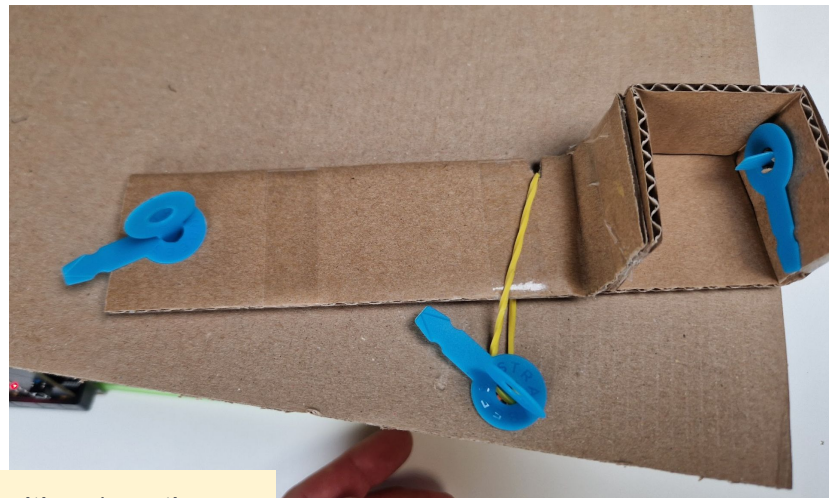


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11. Connect the rubberband & servo



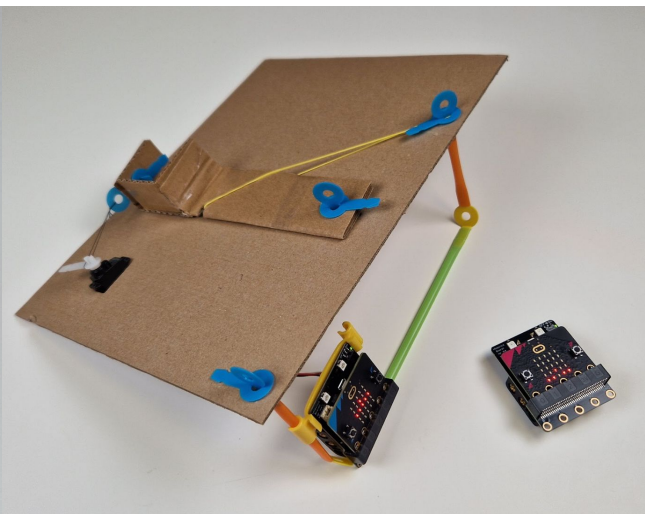
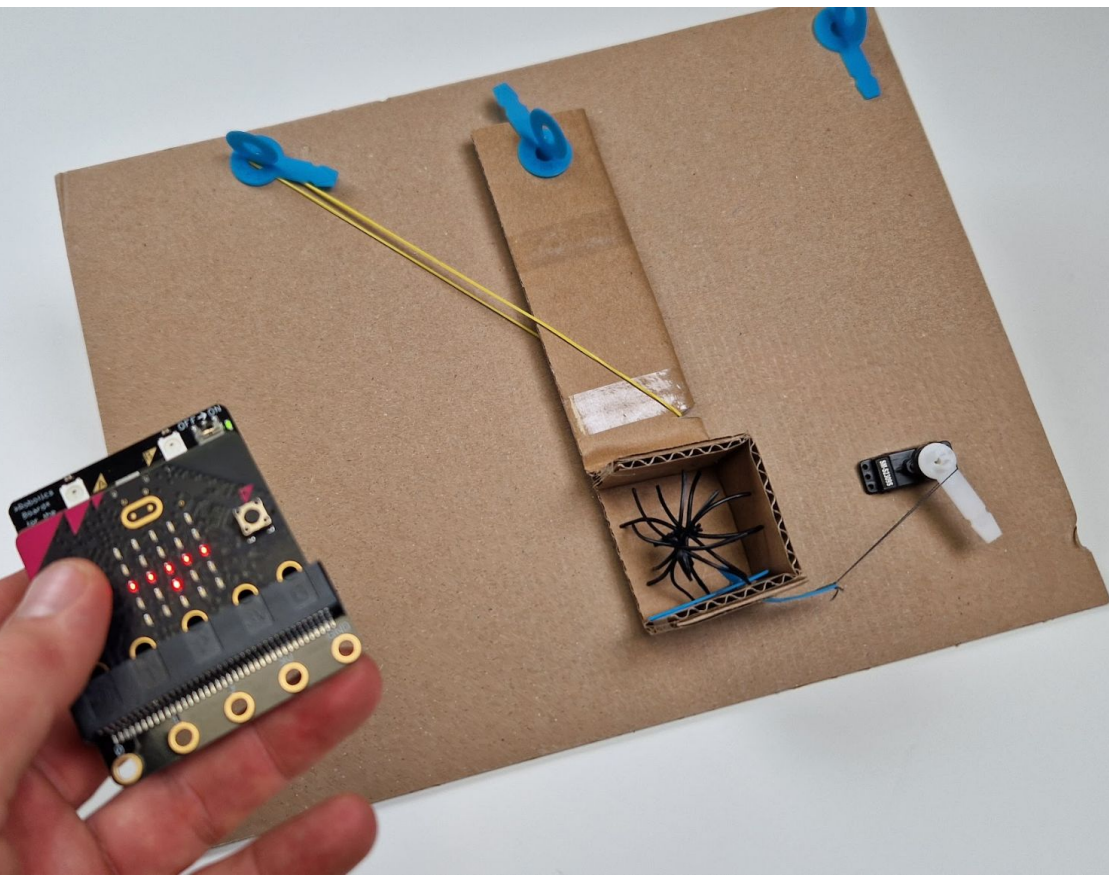
1. Connect the servo to position 1 on the robotic inventions kit (or position 1 on Hummingbird)
2. Power up the microbit and attach the servo arm so it has approximately this angle.
3. Attach the rubber band to the front Strawbee attachment.

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12. Prepare for launch & test



1. Connect the latch loop to the servo arm
2. Put spiders (or other light objects) in the launch arm.
3. Test launch by pressing button A on either the local micro:bit or another micro:bit with the same code.

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8 Scare someone



Remember to set it up somewhere where the Spider launcher can be hidden, on top of a cupboard or in a bookshelf, and then wait for the unsuspecting friend to arrive and use the remote to have some fun scaring them a bit.

If you are up for it replace the remote with a computer and teachable machine so you don't have to be there yourself and make it even more spooky.

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Have fun & happy scaring!

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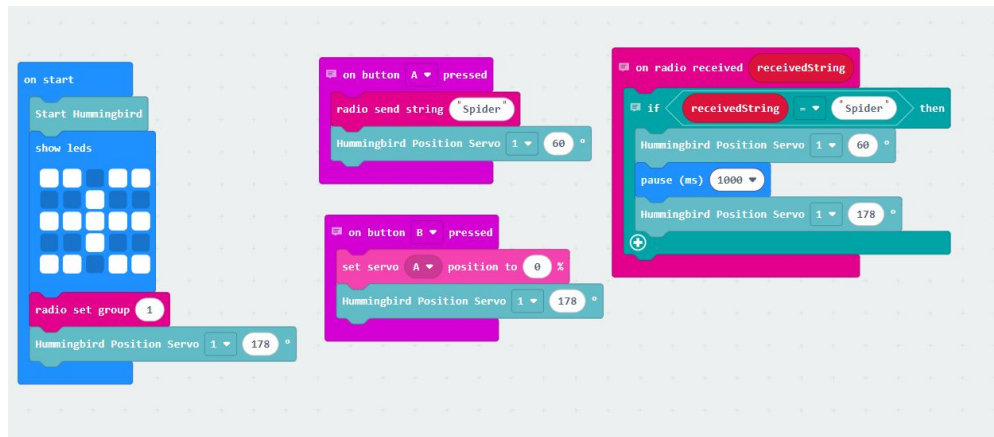
1. Program the micro:bit for Hummingbird

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