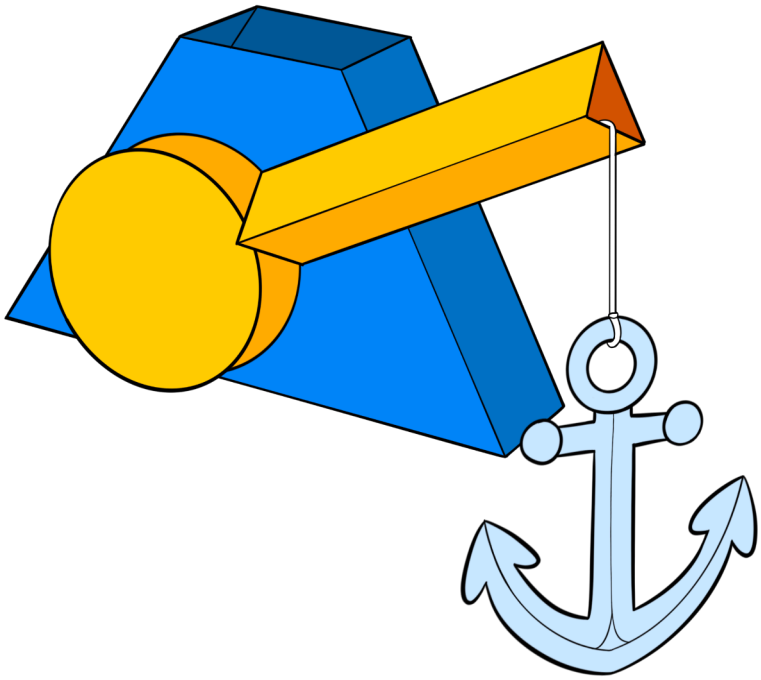
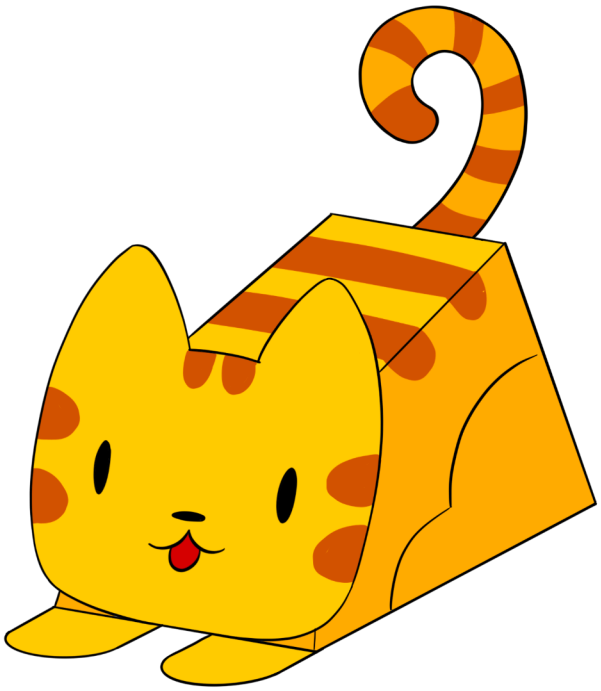
PAPER ROBOT KIT

Learn how to build the paper robots included in the OKDo Paper Robot Kit, get started with the micro:bit, and more!

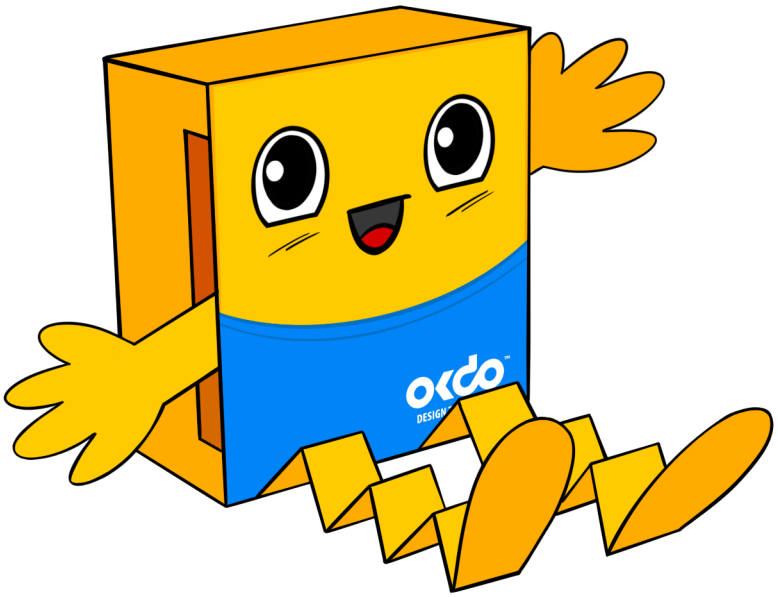




For educators

TABLE OF CONTENTS

Project Instructions



Learn more!

WHAT YOU'LL NEED

Everything you need to get started building paper robots with the micro:bit!

What's included

- 1x micro:bit v2 Board
- 1x Micro USB Cable
- 1x Battery Holder (2x AAA) — batteries not included
- 1x Standard Micro Servo (EF92A, micro:servo 180°)
- 1x Continuous Rotation Micro Servo (EF90D, micro:servo 360°)
- 5x Crocodile to Male Jumper Pin Cables
- 5x Crocodile Cables
- Templates for four different paper robots

Other tools and materials you'll need

- Computer
- Scissors or Craft Knife
- Glue or Tape
- For Paper Pet: Tin Foil (or Conductive Tape)
- For Lifty Crane: String (dental floss works great!)
- Optional: coloured pencils, crayons, or markers to decorate your robots

CHEERBOT

Make a robot that reacts to loud sounds by waving its arms in a cheer!

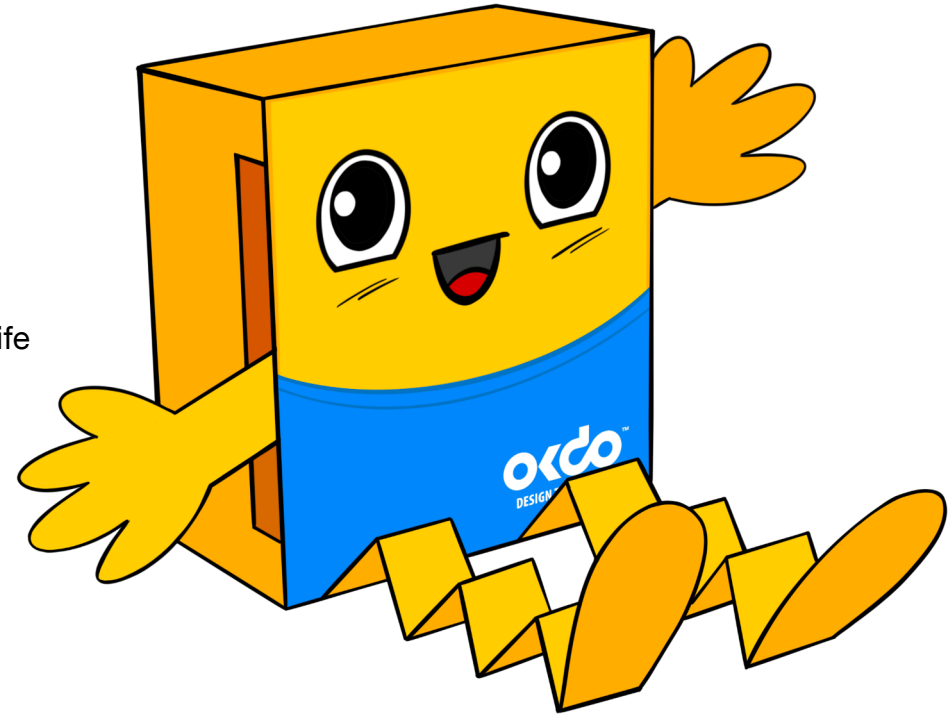
Tools & Materials

Included in kit:

- CheerBot Templates
  If you need to print new templates, you can download them here:
  https://www.okdo.com/p/okdo-microbit-build-a-paper-robot-kit/
- Standard Micro Servo (EF92A, micro:servo 180°)
- 3x Crocodile to Male Jumper Pin Cables
- micro:bit v2 Board
- Micro USB Cable

Not included in kit:

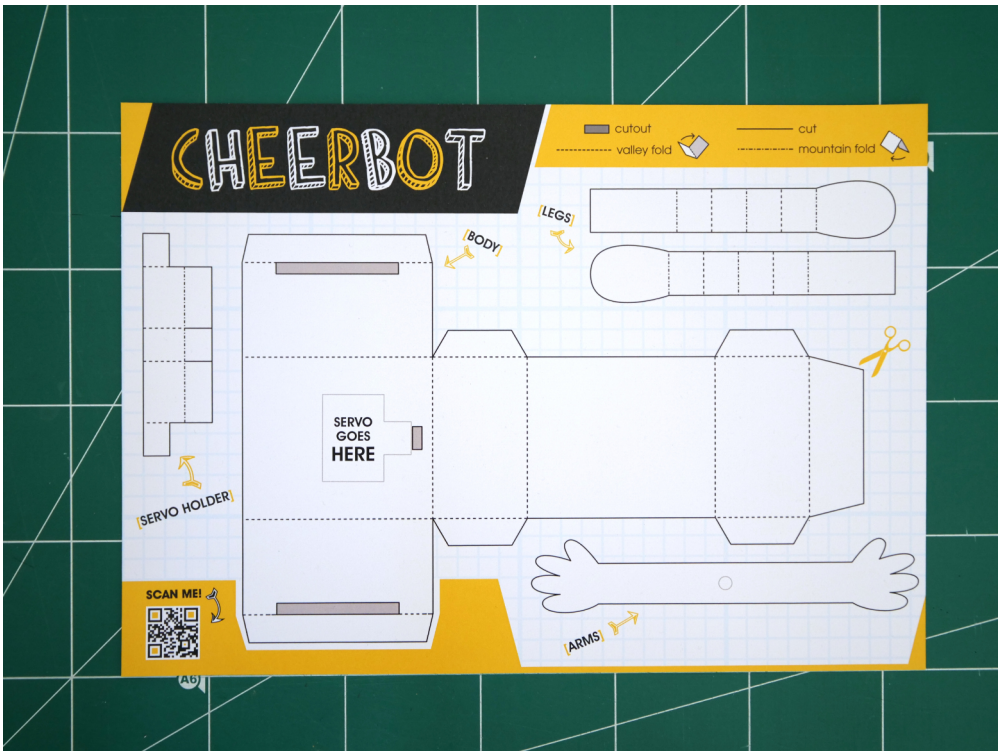
- Computer
- Scissors or Craft Knife
- Glue
- Tape

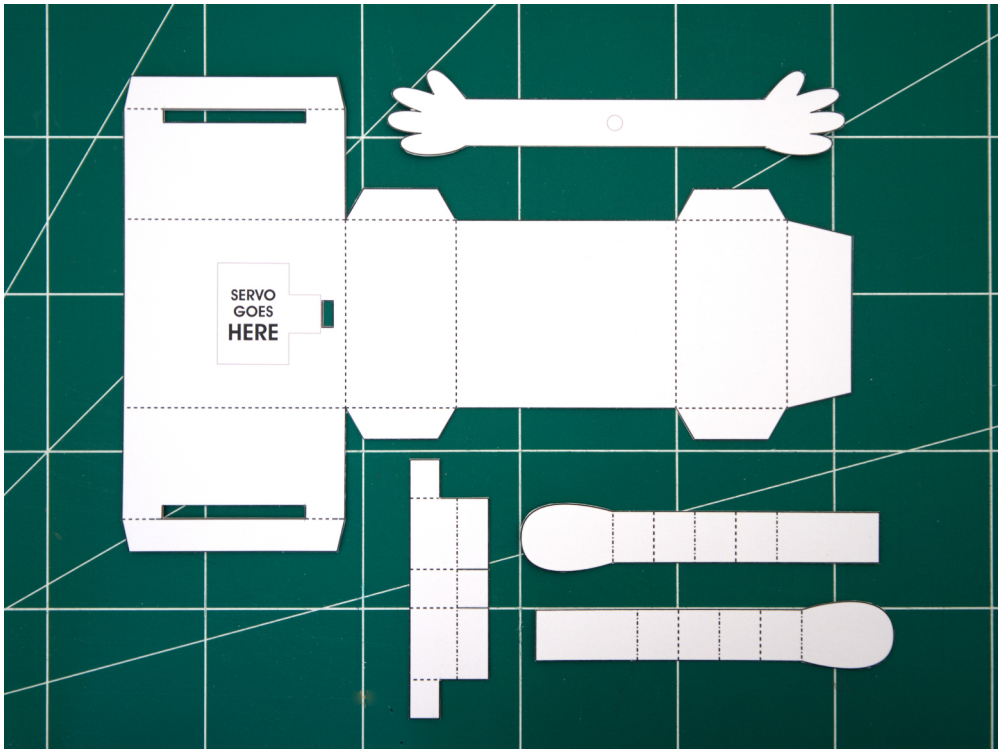


1

Start by cutting all the pieces out of first page of the template. You might find it easiest to use a craft knife for the cutouts (the parts shaded in grey). Make sure to have an adult help if you use a craft knife.

If you have trouble cutting the long slot, continue to step 2 instead.

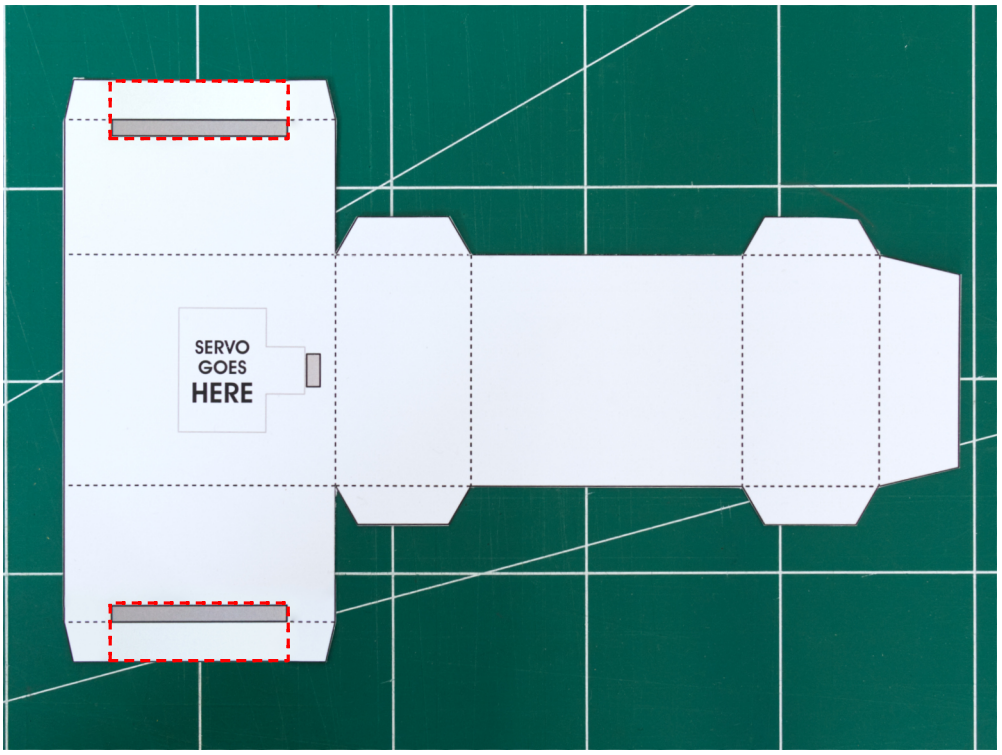


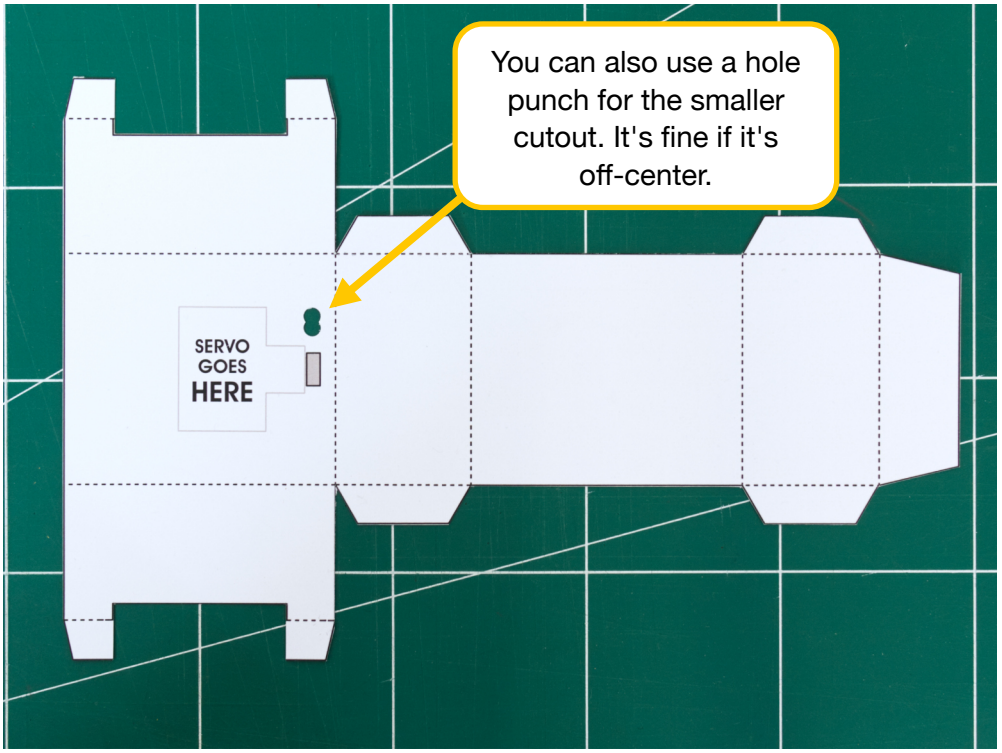


2

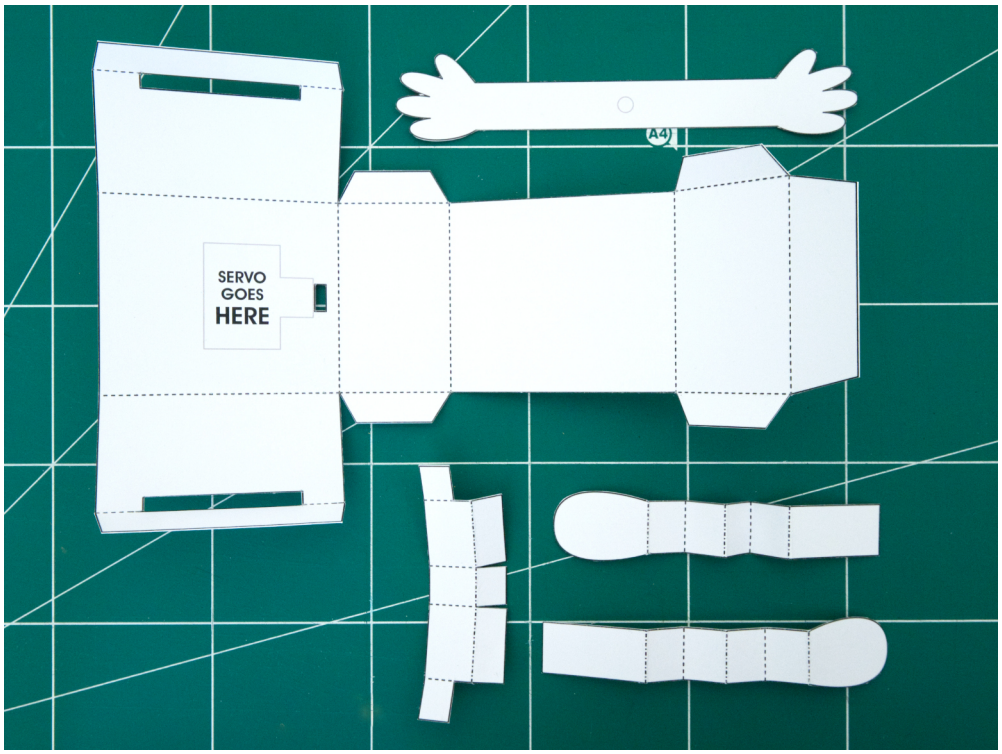
(If you already cut the slots without difficulty, skip this step).

If you're having trouble cutting the slots, you can instead use scissors to cut along the red outline in the picture below. The final result will be a tiny bit flimsier, but you'll still have enough room on the remaining part of the tabs to glue everything together.

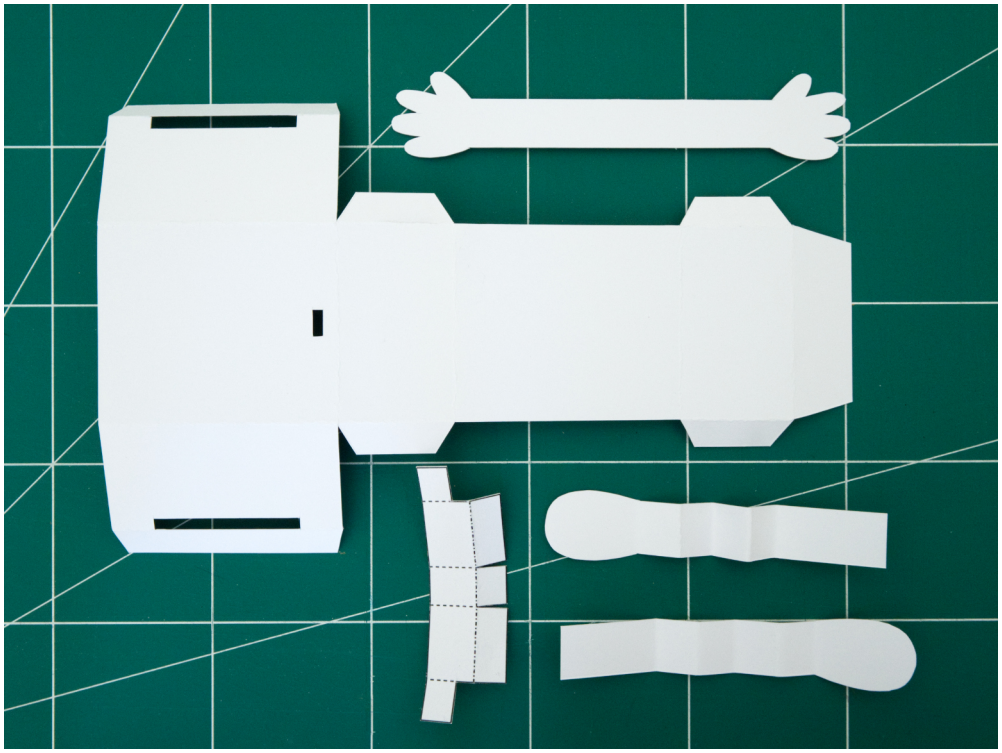




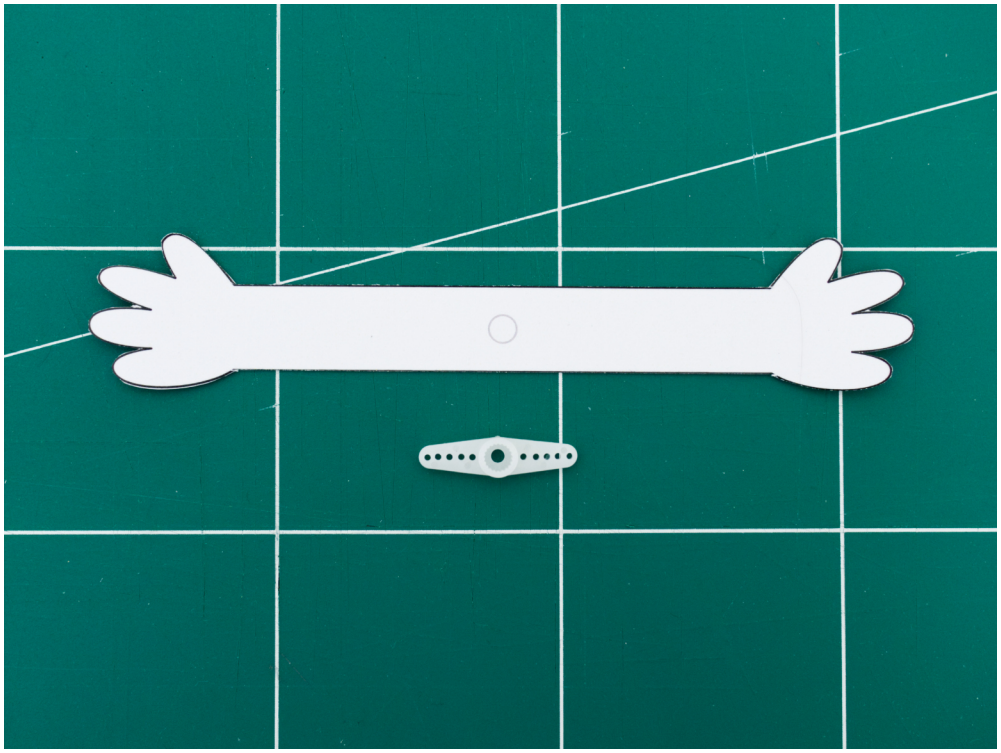
3 Pre-crease all the fold lines. This will make assembly easier later on.

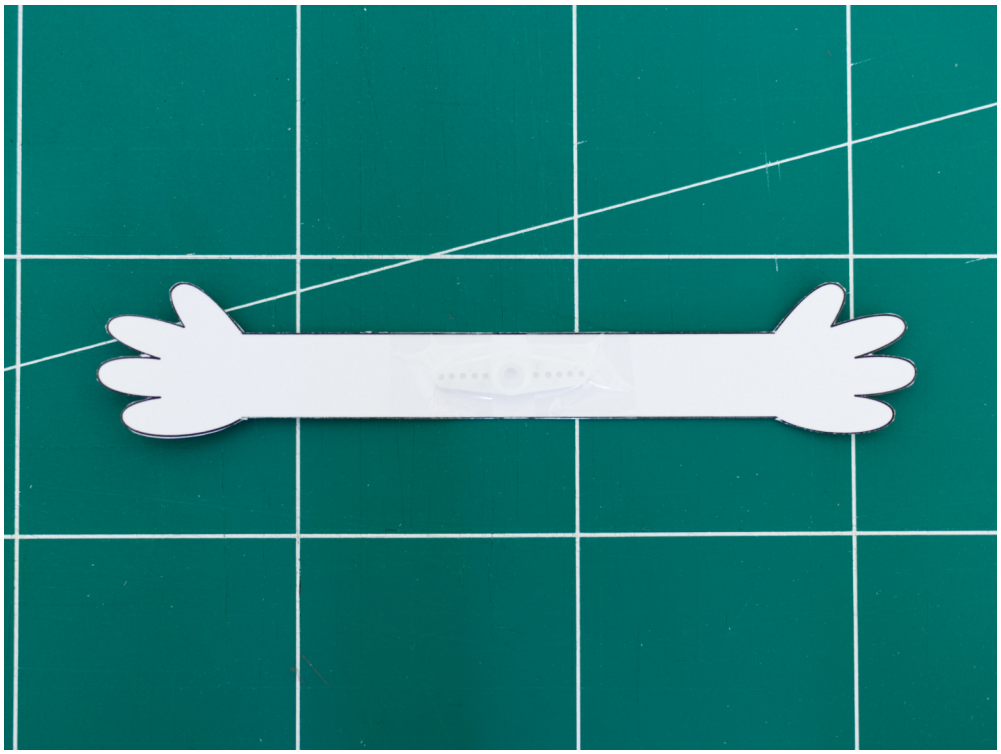


4 You can decorate Cheerbot when it's finished, but you might find it easier to color some of the parts while it's still disassembled. (I usually color the parts on the backside, since all the fold lines will be hidden on the inside). In this case, I decided to decorate at the end.



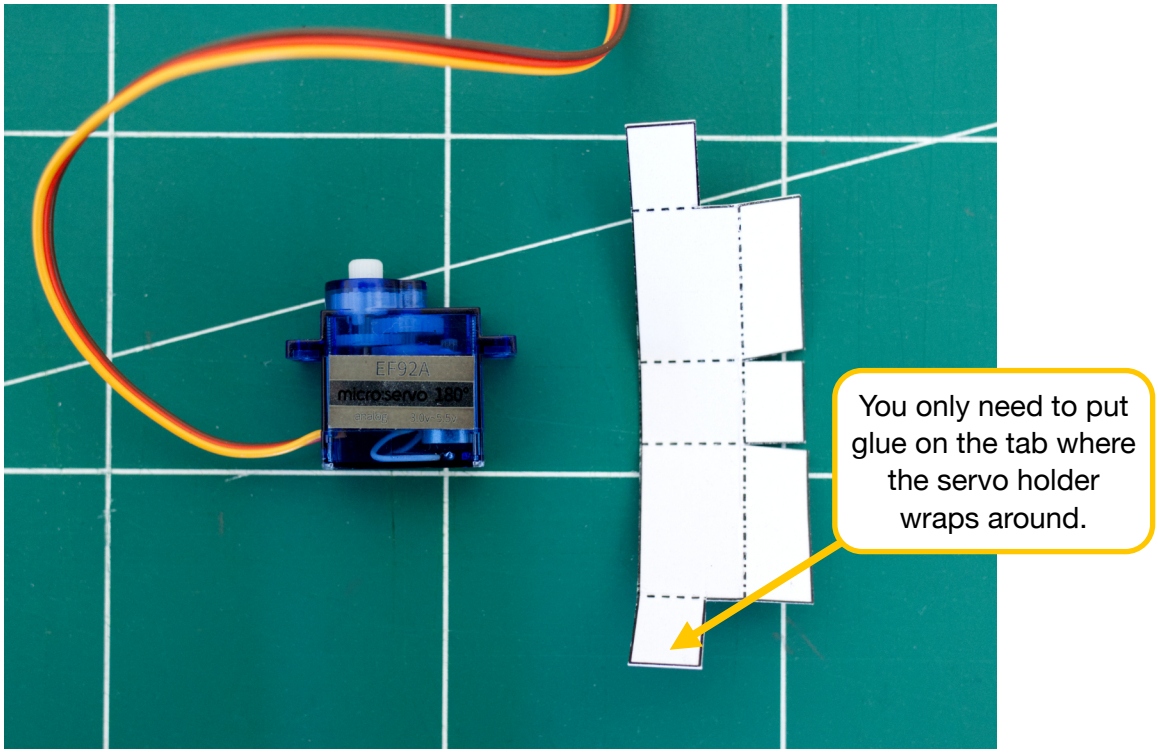
5 Tape a servo horn to the middle of the arms (where the mark is).

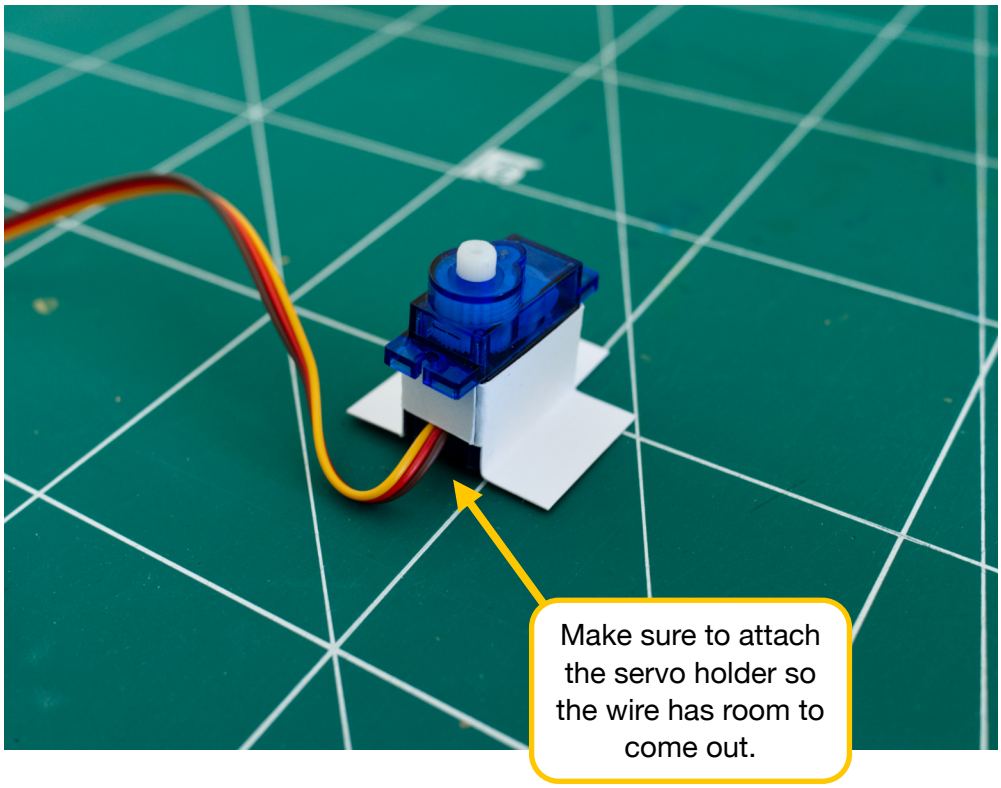




6 Glue or tape the servo holder around the servo. You don't need to put glue on the servo itself, just on the paper tabs that wrap around the servo body.

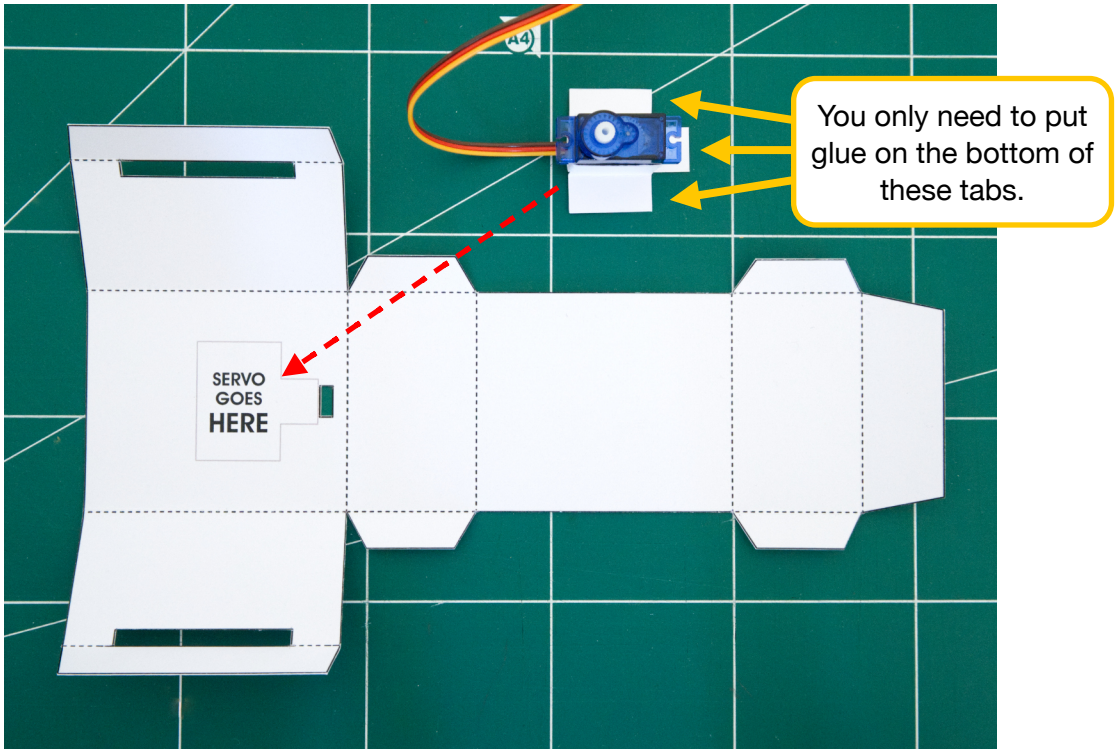
Note: For this project, make sure you're using the **standard 180° servo** (the one labeled EF92A).

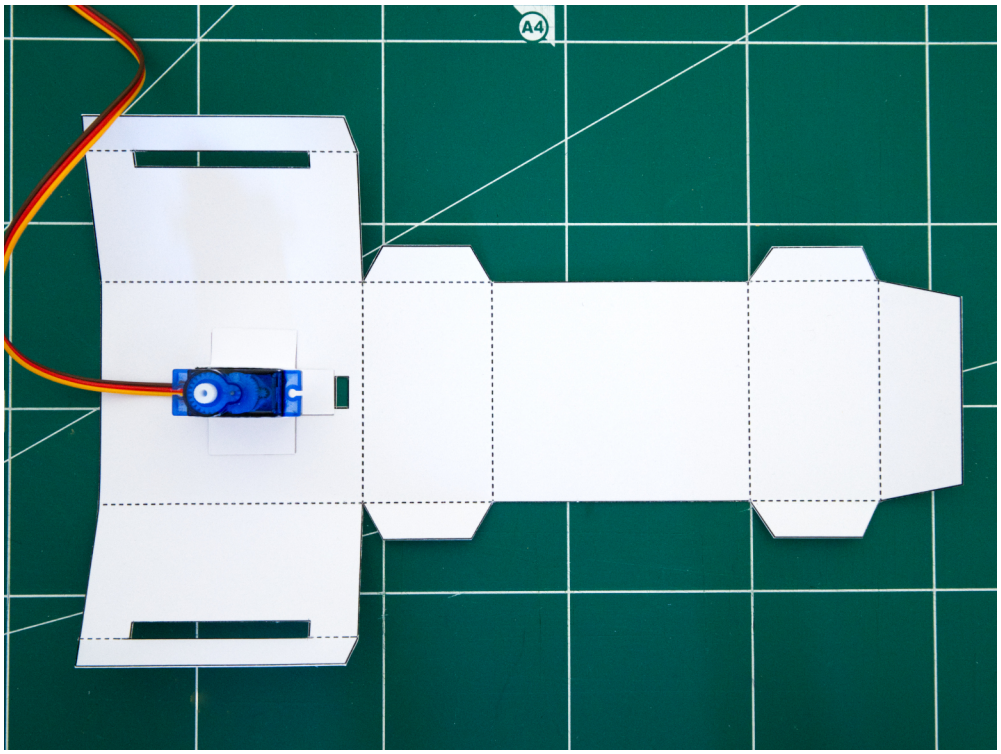




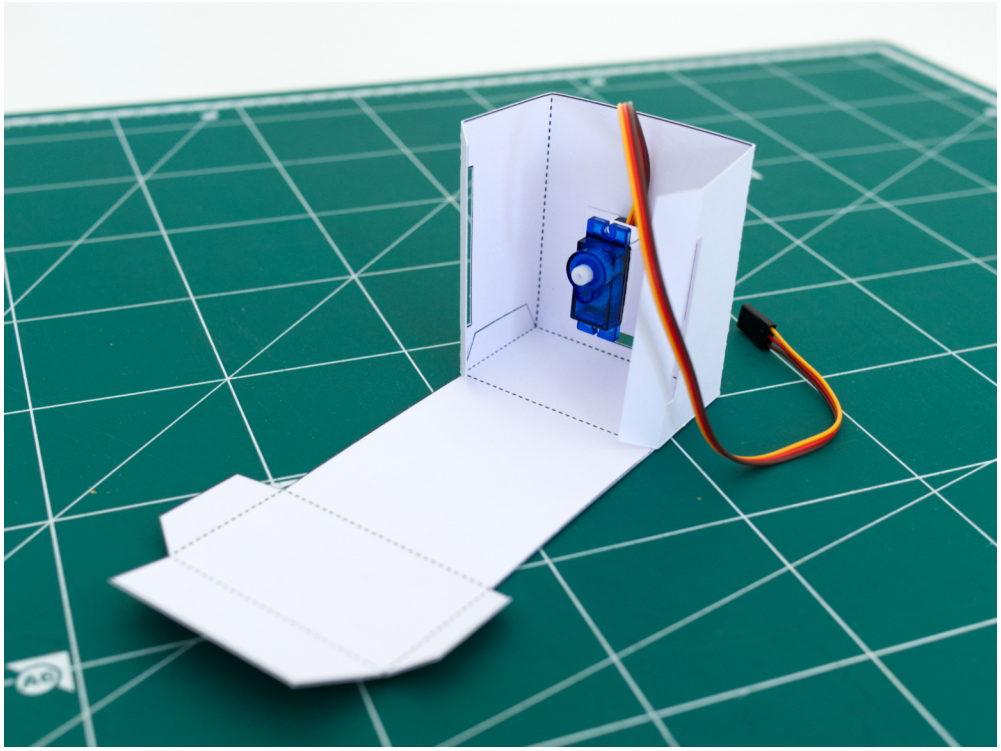
7

Glue or tape the servo in place where shown. Once again, you don't need to put glue on the actual servo — you can just put it on the paper tabs of the servo holder.

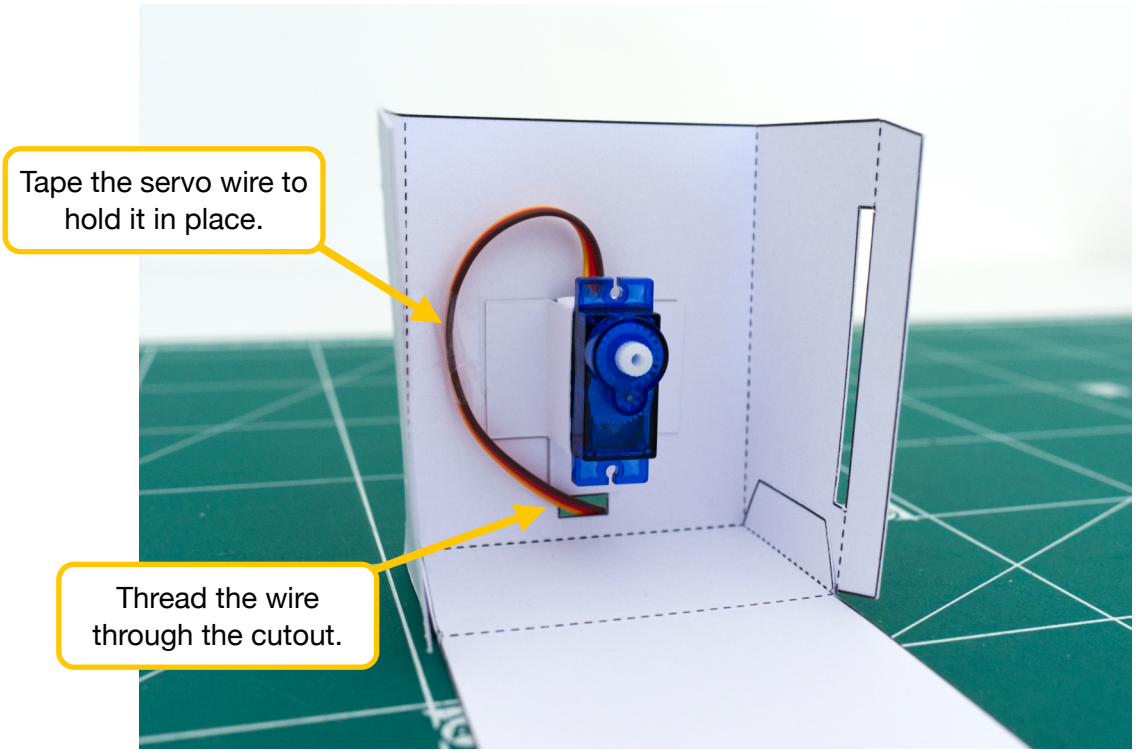


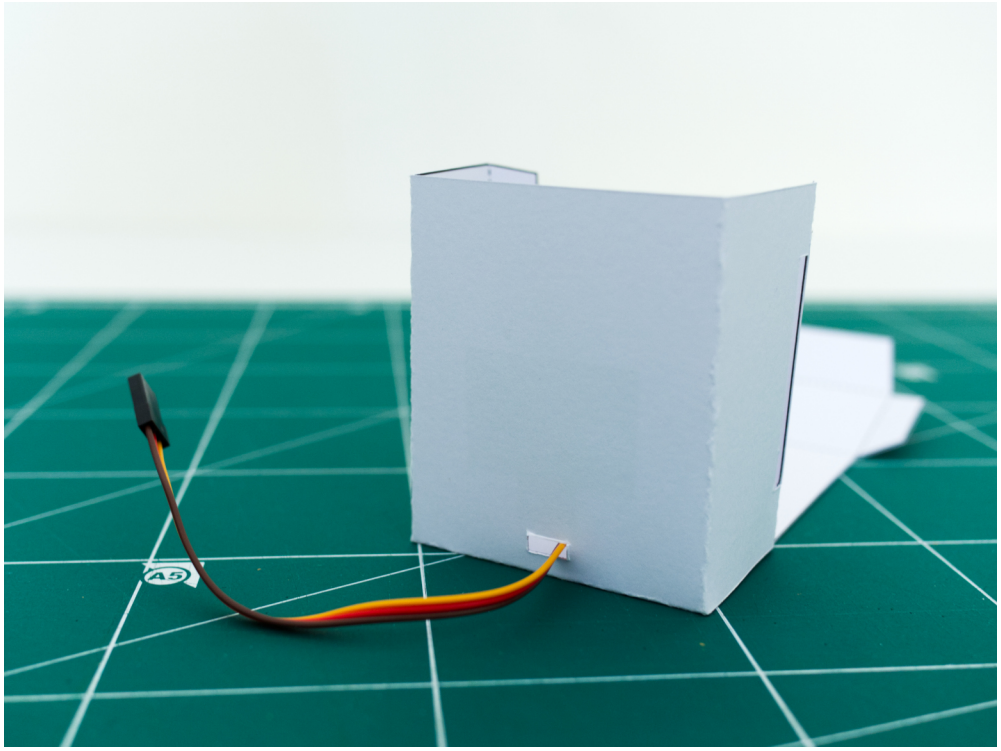


8 Fold and glue (or tape) the back and bottom of the body together.



9 Thread the servo wire through the cutout in the body, and use a small piece of tape to hold it in place.

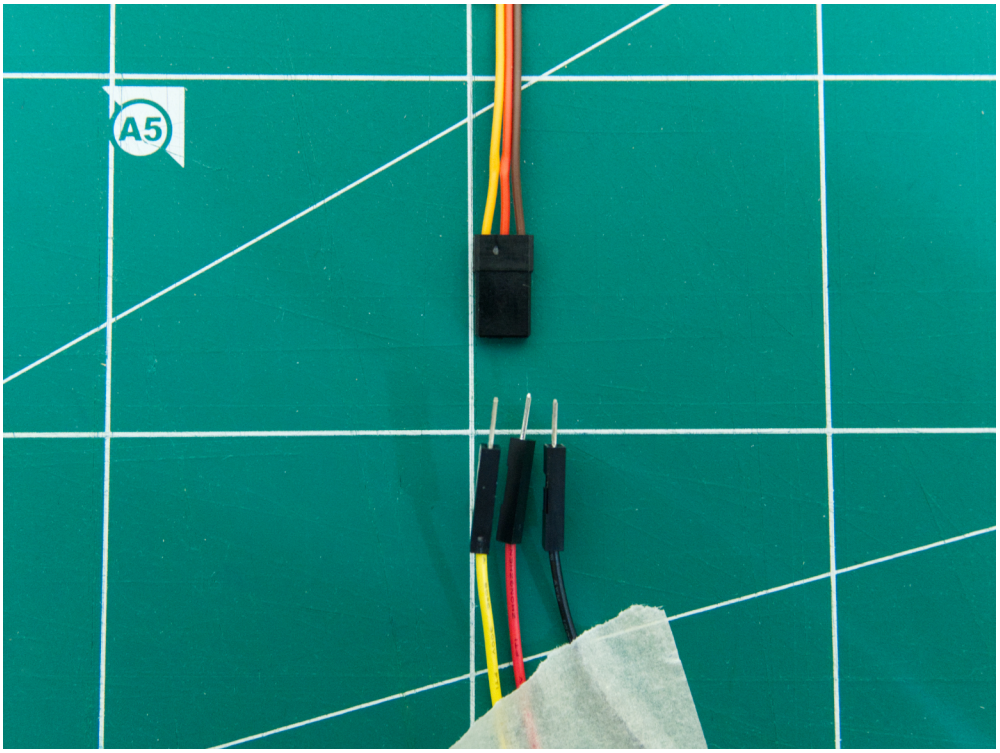


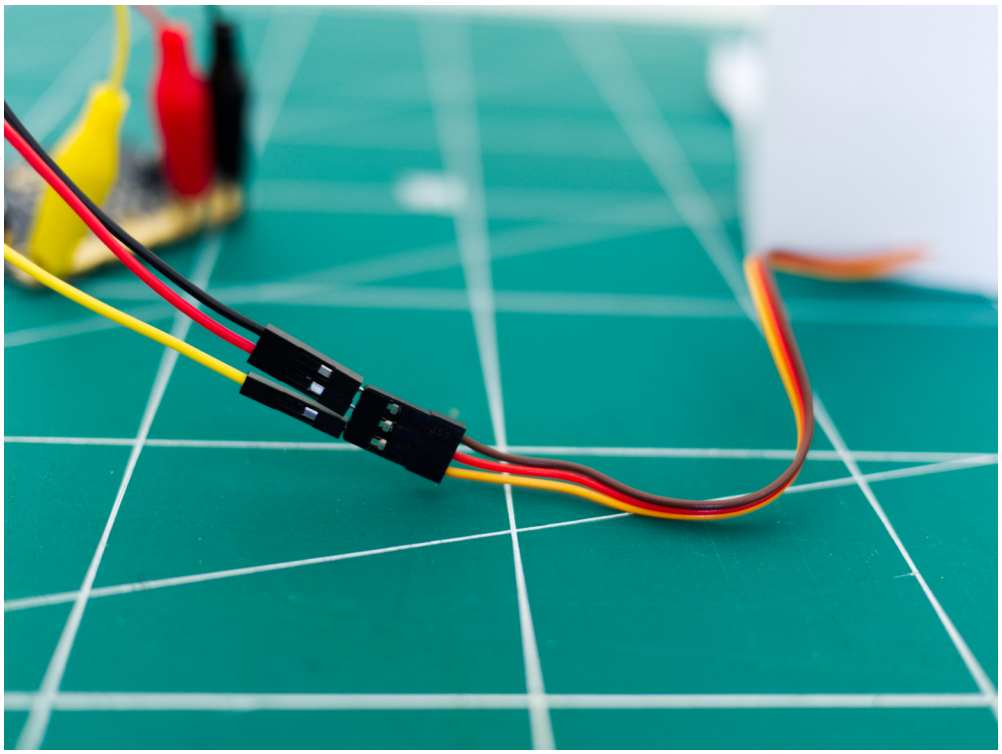


10

We need to set the angle of the servo before we finish making the rest of the body. To do that, we'll need to connect the electronics and program the micro:bit.

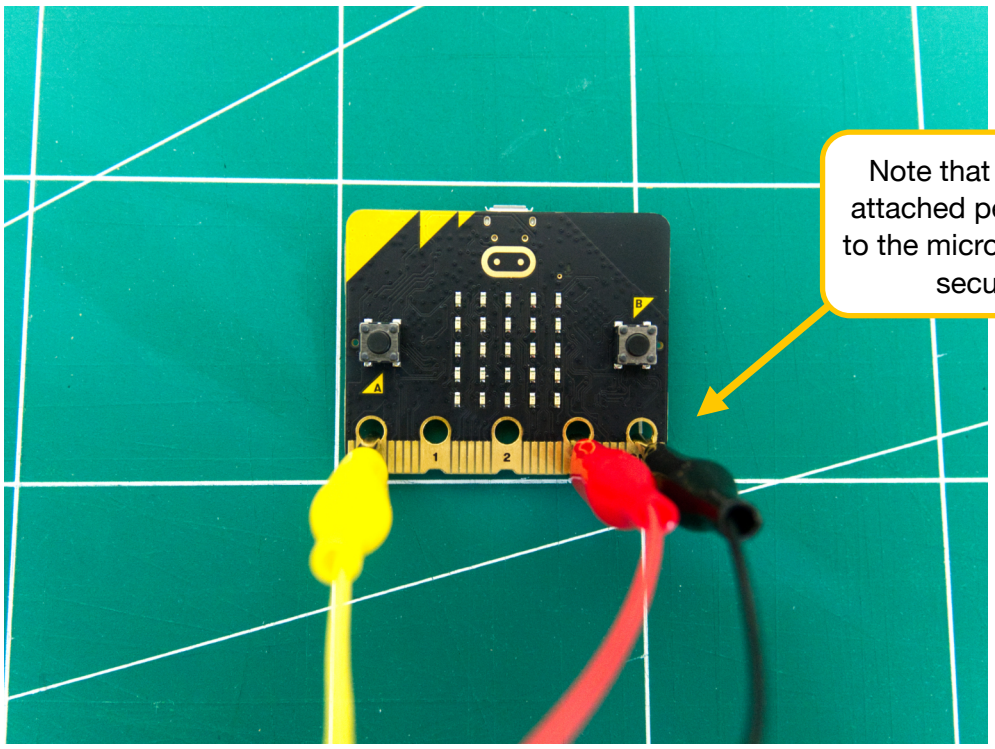
Connect 3 of the the crocodile to male jumper pin cables to the servo header. You can use any color of crocodile cables, but if you match the color of the servo wires to the crocodile cables, it will make it much easier to keep track of the connections.

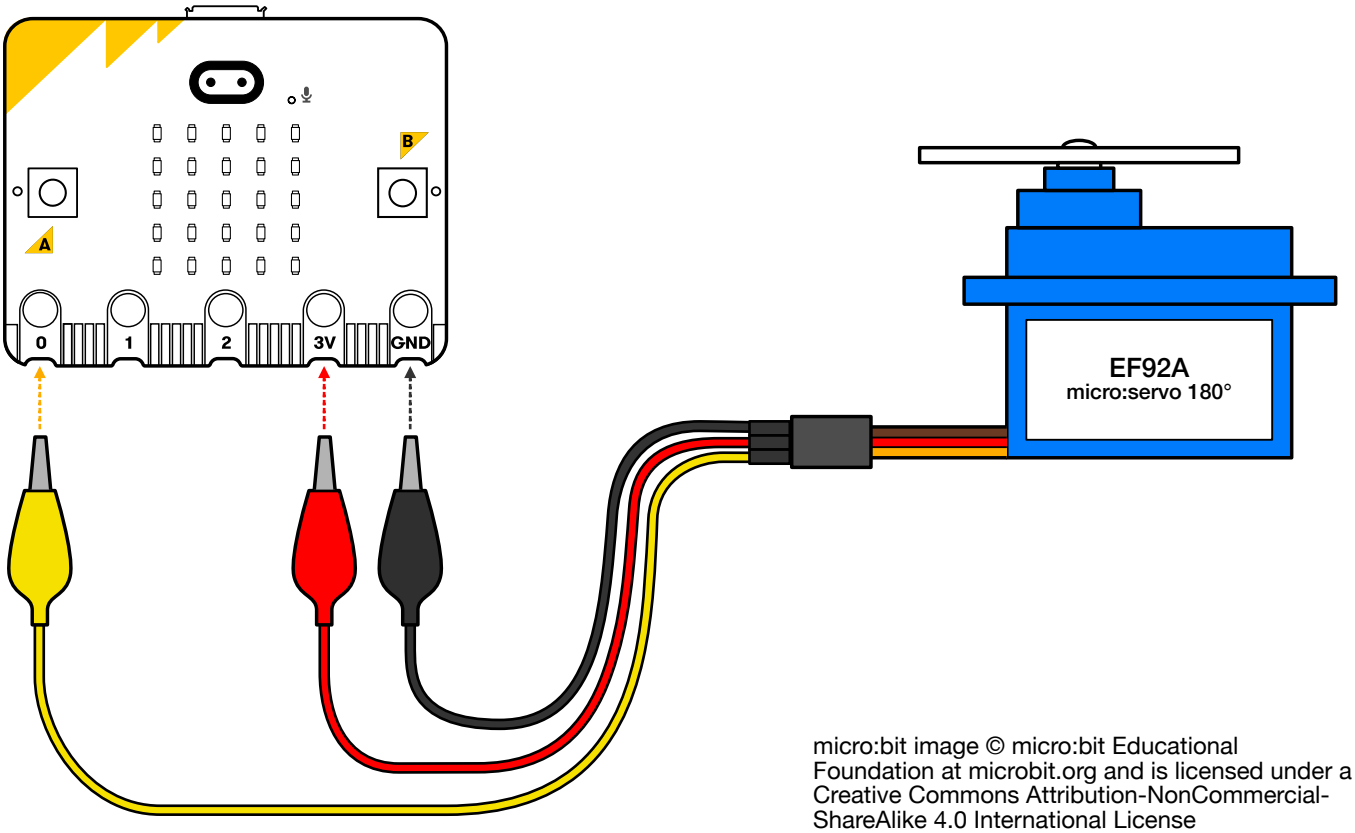




11 Connect the crocodile clips to the micro:bit. Make sure that they are connected as follows:

- Crocodile clip connected to the YELLOW servo wire → micro:bit Pin 0
- Crocodile clip connected to the RED servo wire → micro:bit 3V
- Crocodile clip connected to the BROWN servo wire → micro:bit GND



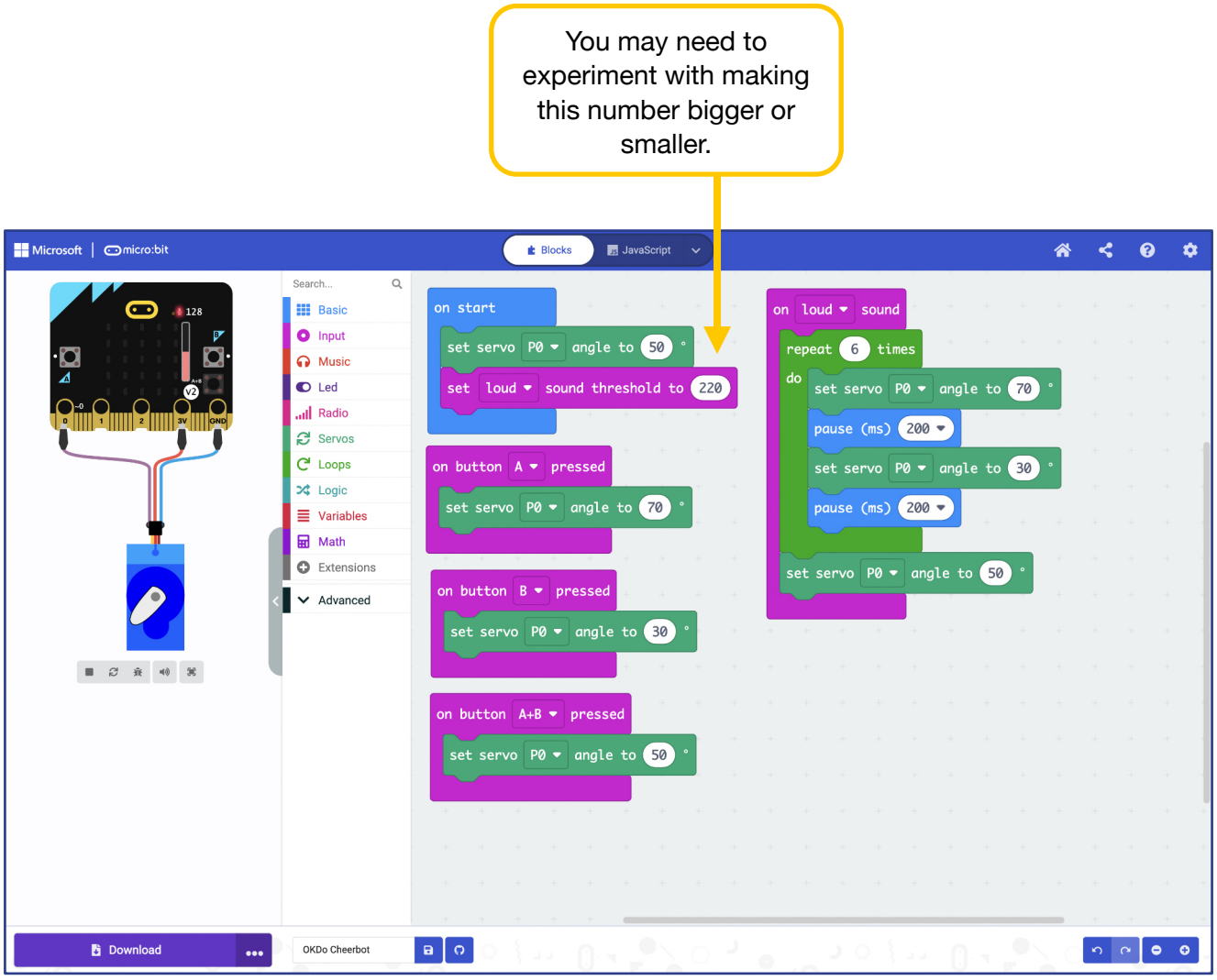


12 Connect the micro:bit to your computer using the micro USB cord. The cord will be used both to transfer the code and to supply power to the micro:bit and the servo.

13 Get the code from here:
https://makecode.microbit.org/#pub:_AkV9p8JT9VWd

The "set loud sound threshold" block tells the micro:bit how loud a sound needs to be to be considered "loud" enough to trigger the cheering movement. You may need to make this number bigger or smaller depending on how loud your surroundings are.

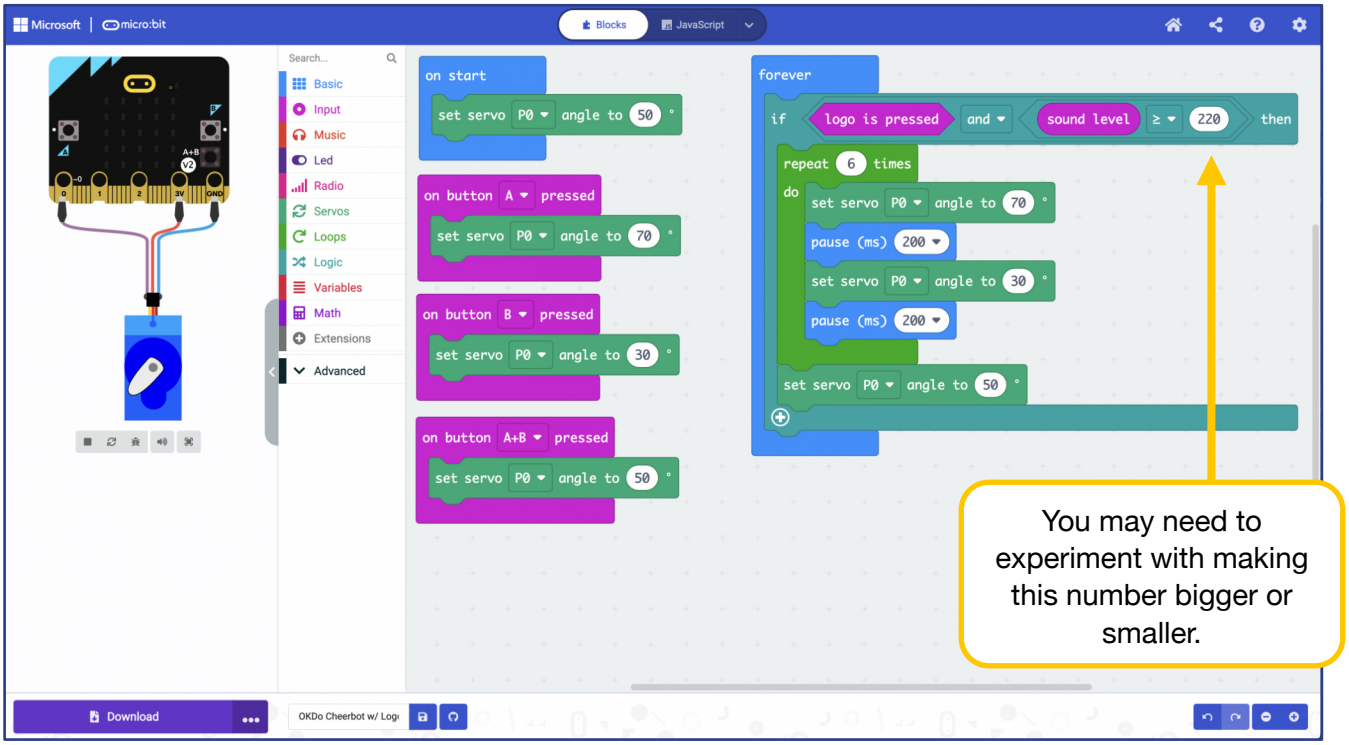
If you're in a loud environment, you may want to use the code in the Step 14 instead to make sure the sound sensor isn't accidentally triggered.



14 This is a modified version of the code that requires you to press the logo AND make a loud sound to trigger the cheering movement. That way, it's harder to set off the cheering movement by accident.

To adjust how loud the sound needs to be to trigger the movement, change the number in the "sound level ≥ 220" block to be higher or lower.

https://makecode.microbit.org/#pub:_0qAhWEdWU5we



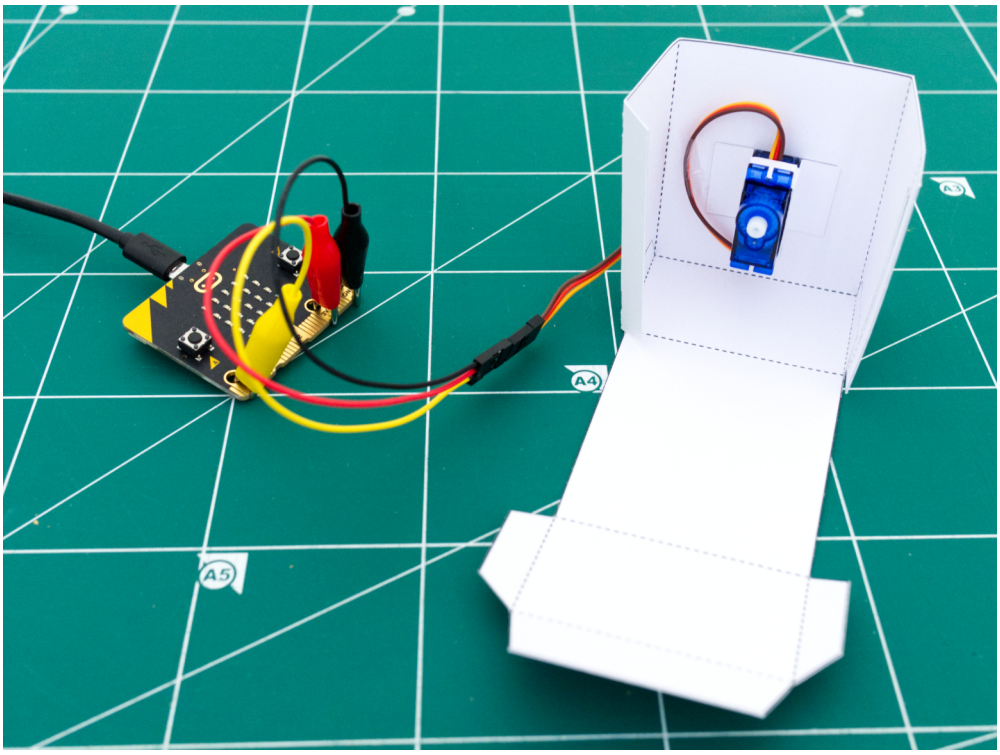
15 Upload the code to the micro:bit using the following instructions (choose in the instructions what type of computer and browser you're using for more specific directions):

https://microbit.org/get-started/first-steps/set-up/

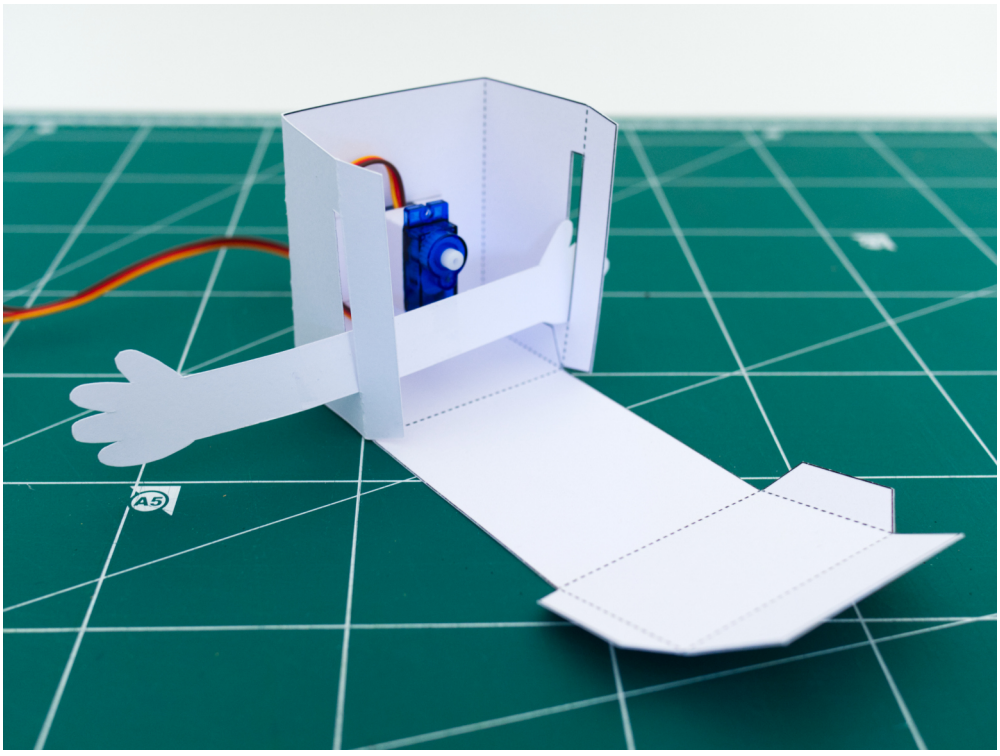
or

https://makecode.microbit.org/device/usb

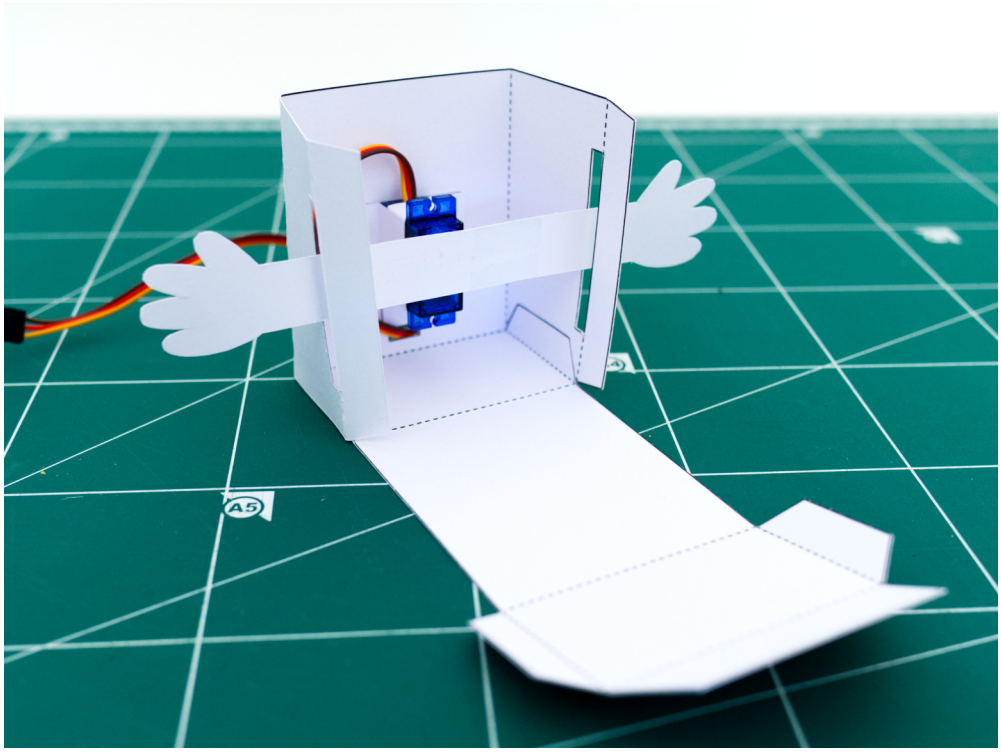
16 With the electronics connected, press the A+B buttons together to center the servo's position. That way, when you attach the arm, it will start at the right position and won't get caught at some weird angle in the slot cutouts.

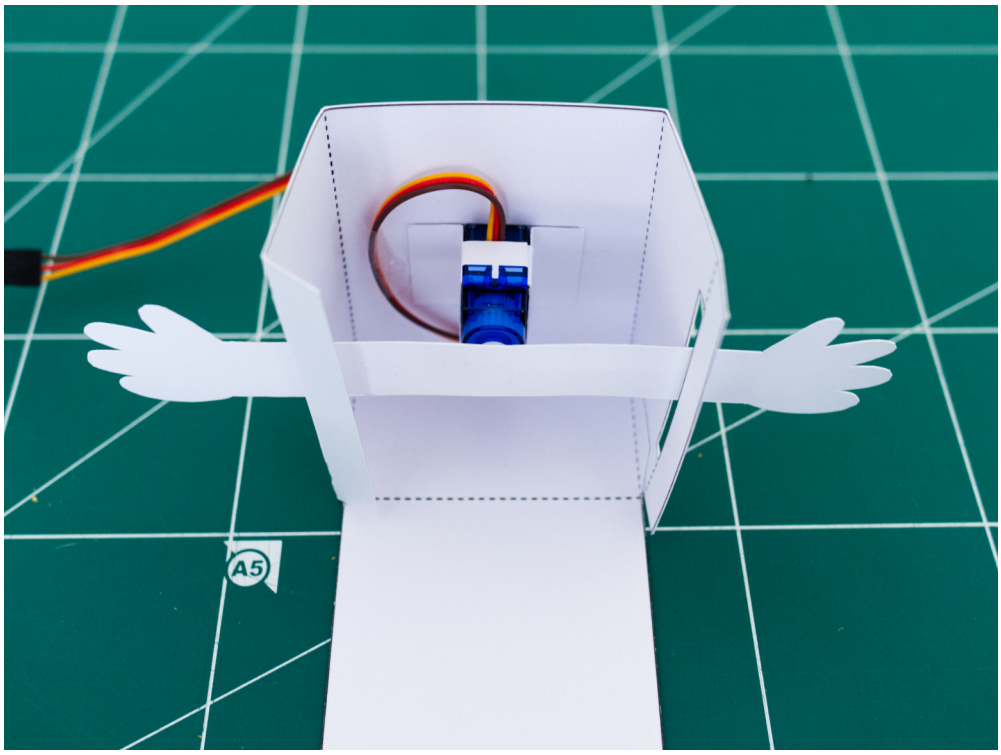


17 Slide the arm in through the slot cutouts with the servo horn facing inwards (towards the servo).

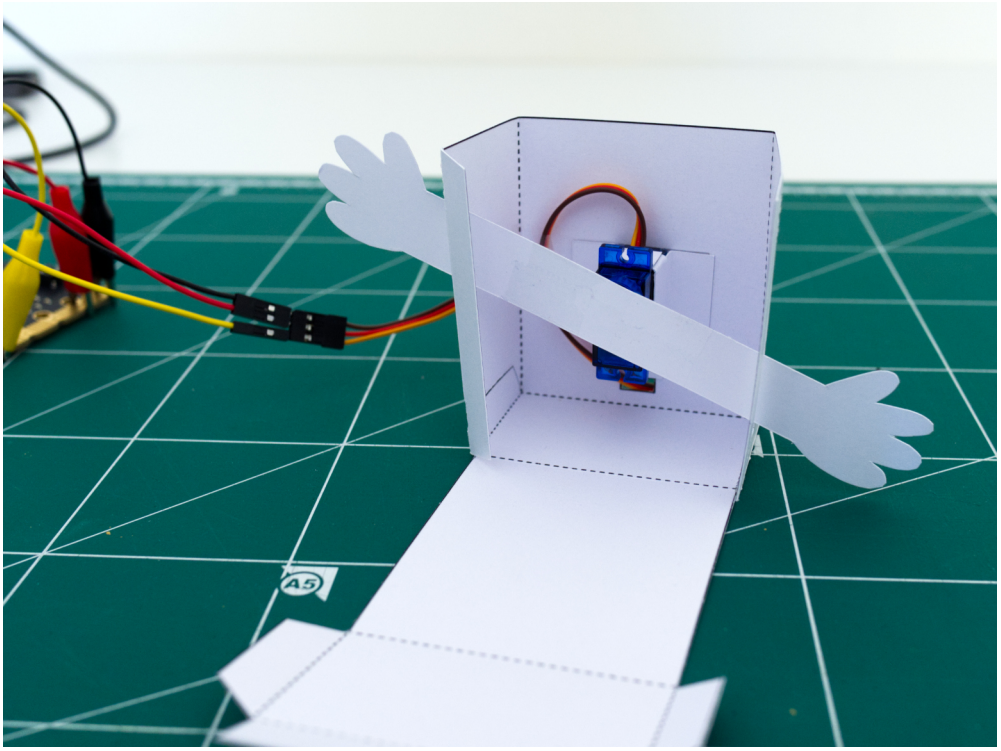


18 Push the servo horn onto the servo with the arm in the horizontal position as shown.

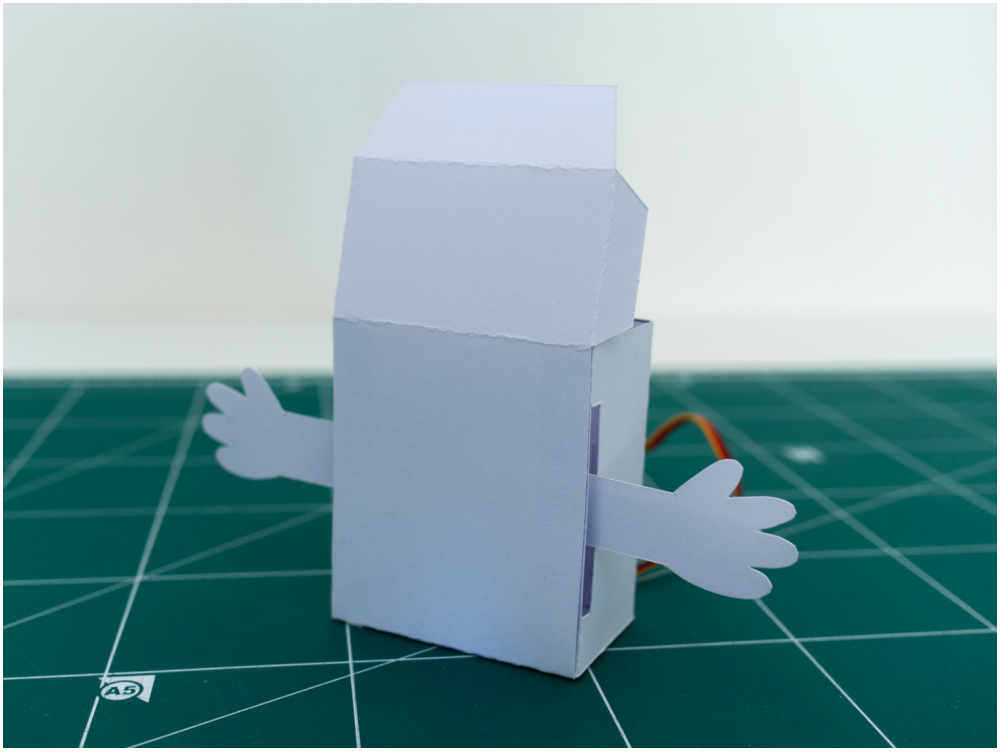




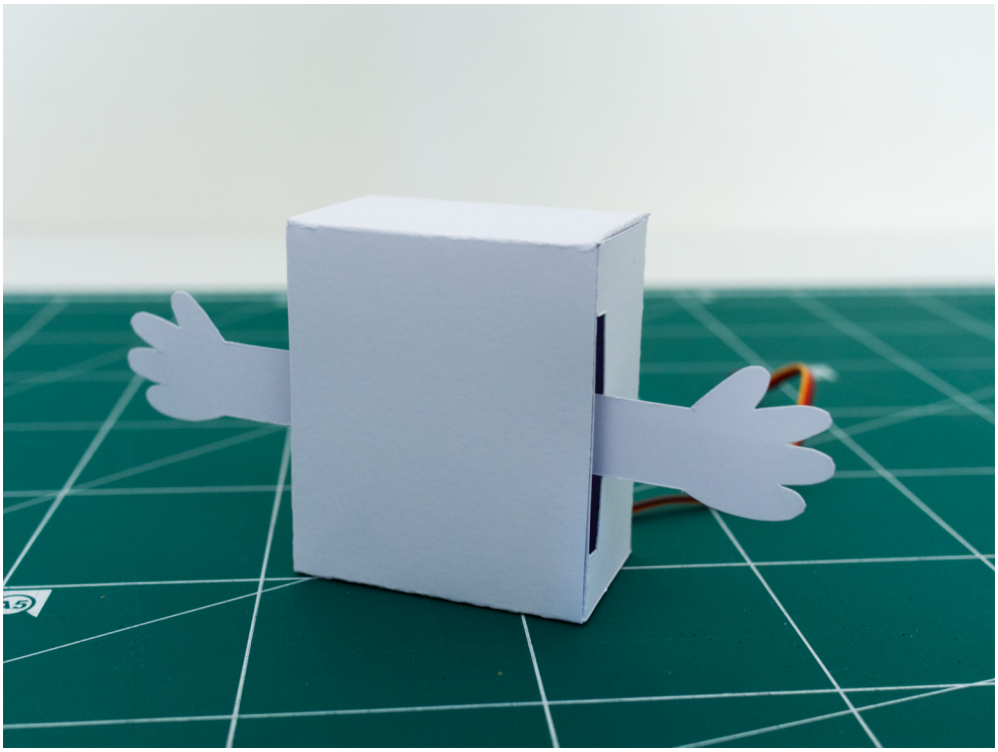
19 Test the arm's range of motion by pressing A and then B. If the arm collides with either end of the slot, you may need to adjust the angle in the code.



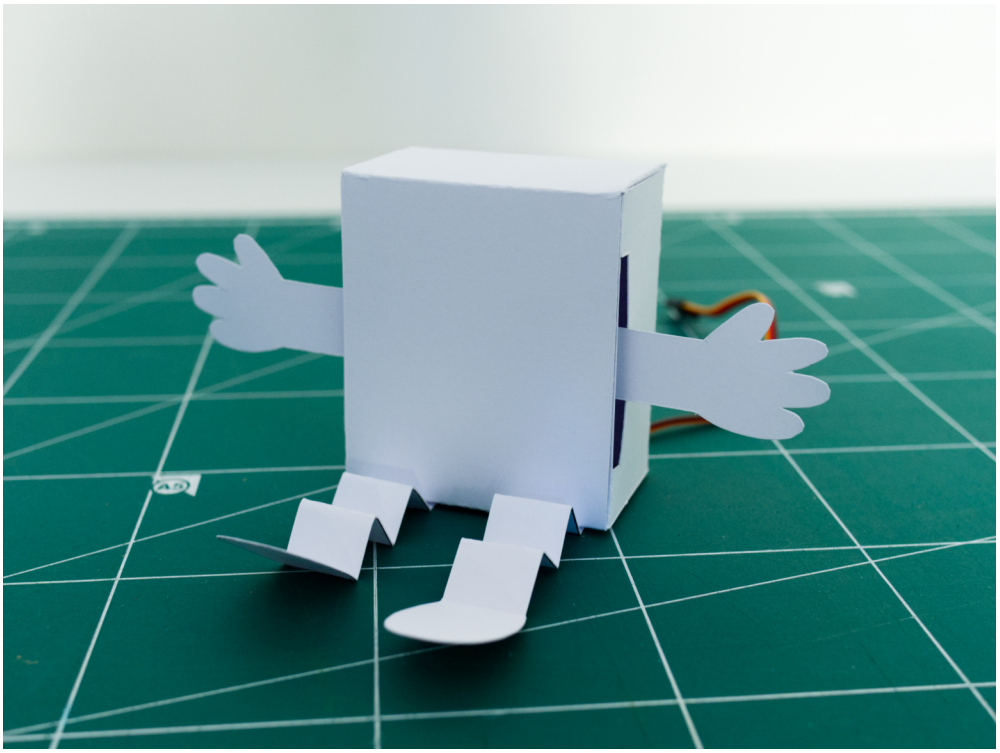
20 Now that you've attached the arm and tested the servo, fold and glue (or tape) the front of the body. You can unplug the servo in the meantime.



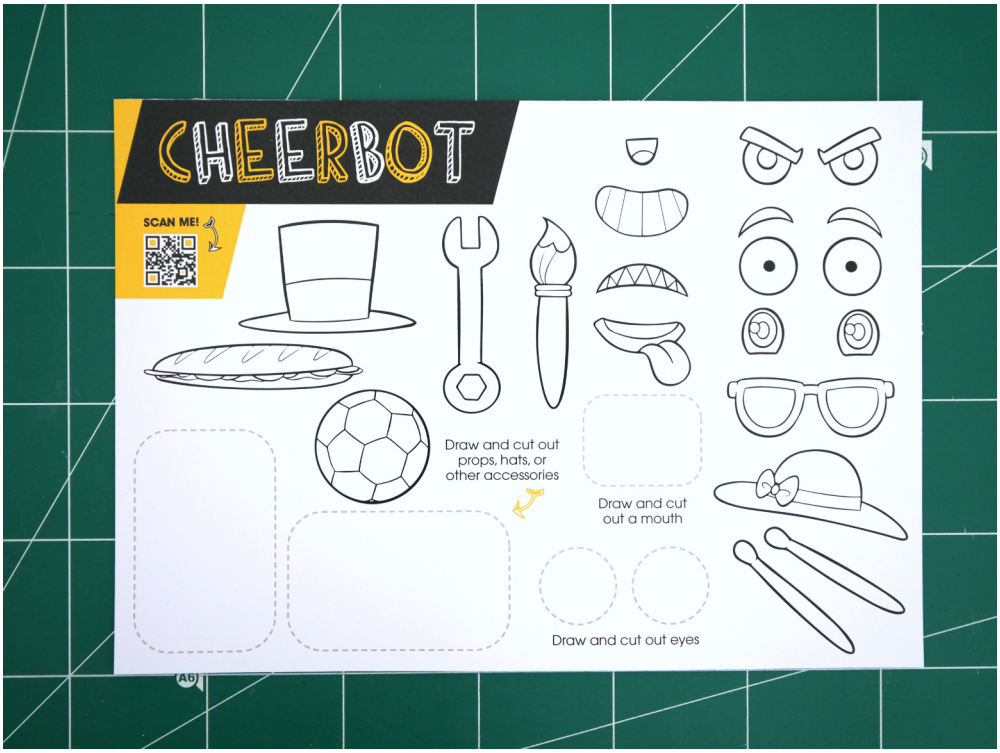
21 Fold the top of the body shut. The top should hold in place even without glue or tape, if you want to leave the inside accessible (in case you need to fix something, or just want to show off how it works from the inside).

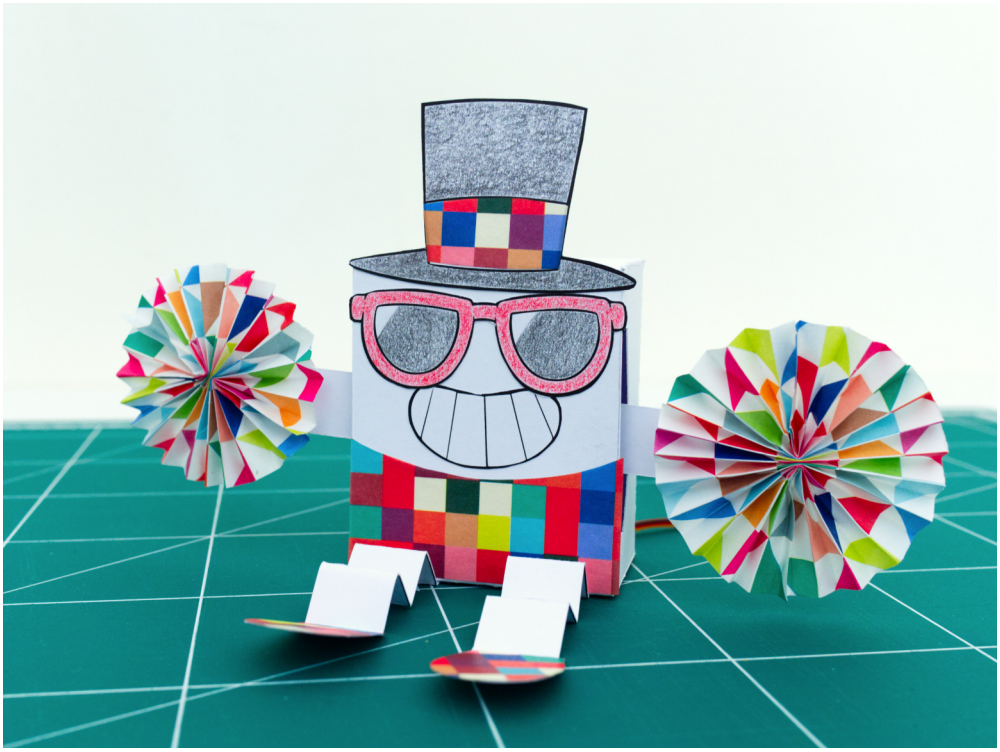


22 Glue the legs to the bottom of the body.



23 Give your Cheerbot a face and decorate it! You can draw or make your own face and props, or use the provided template. I gave mine pom-poms made out of origami paper.





24 Reconnect the electronics if you disconnected them earlier, then test it out. Make a loud noise for Cheerbot to cheer along to! Here's a video of it in action: https://youtu.be/C5459no6u5g

25 Experiment! Can you change the MakeCode to make Cheerbot cheer for longer? Or wave its arms faster? What about using a "play sound" block so Cheerbot can join in the noise-making?

Bonus

Turn your Cheerbot into a Ticklebot!

You can easily convert your Cheerbot into a Ticklebot that reacts to being touched or tickled! You'll need the following materials:

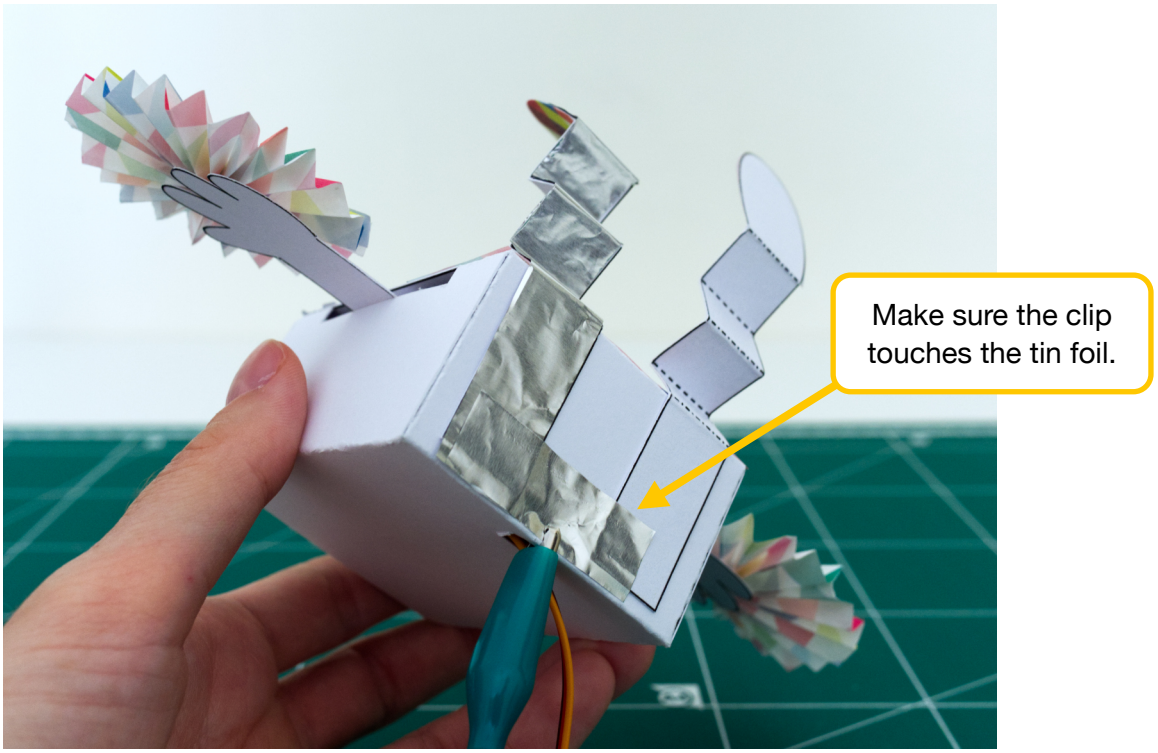
- Tin Foil or Conductive Tape
- 1x Crocodile Clip (included in the kit)

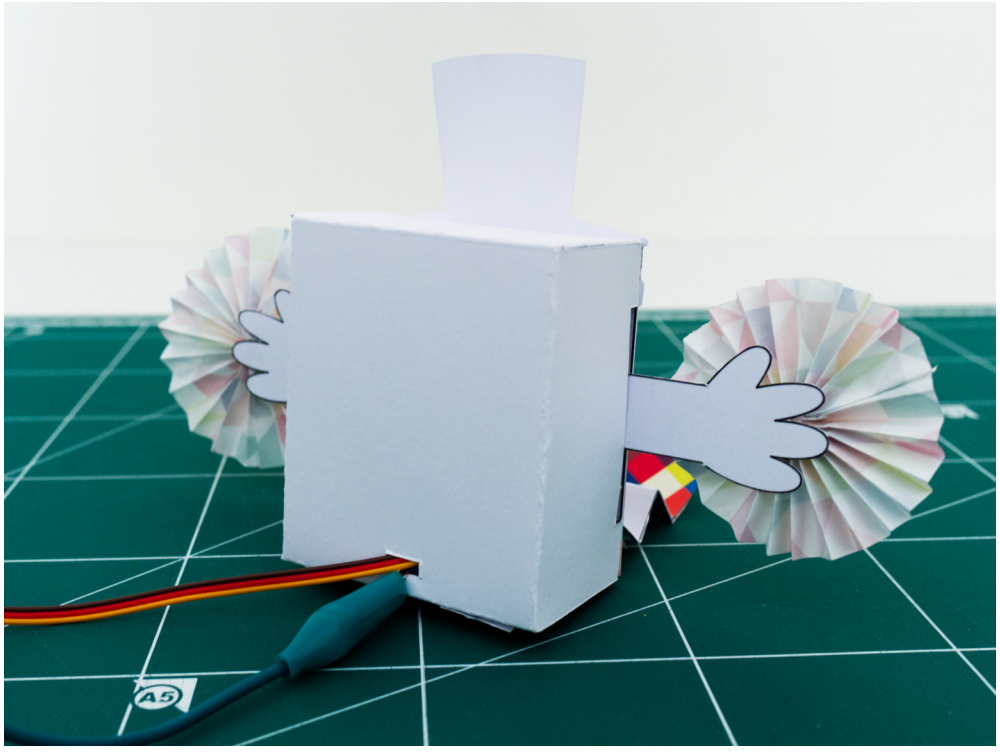
1 Cut a piece of tin foil (or conductive tape) the length of Cheerbot's leg. If you want both legs to be ticklish, cut out a second piece of tin foil to glue to the other leg as well.

2 Glue the tin foil to the bottom of one or both legs (or stick a strip of the conductive tape).

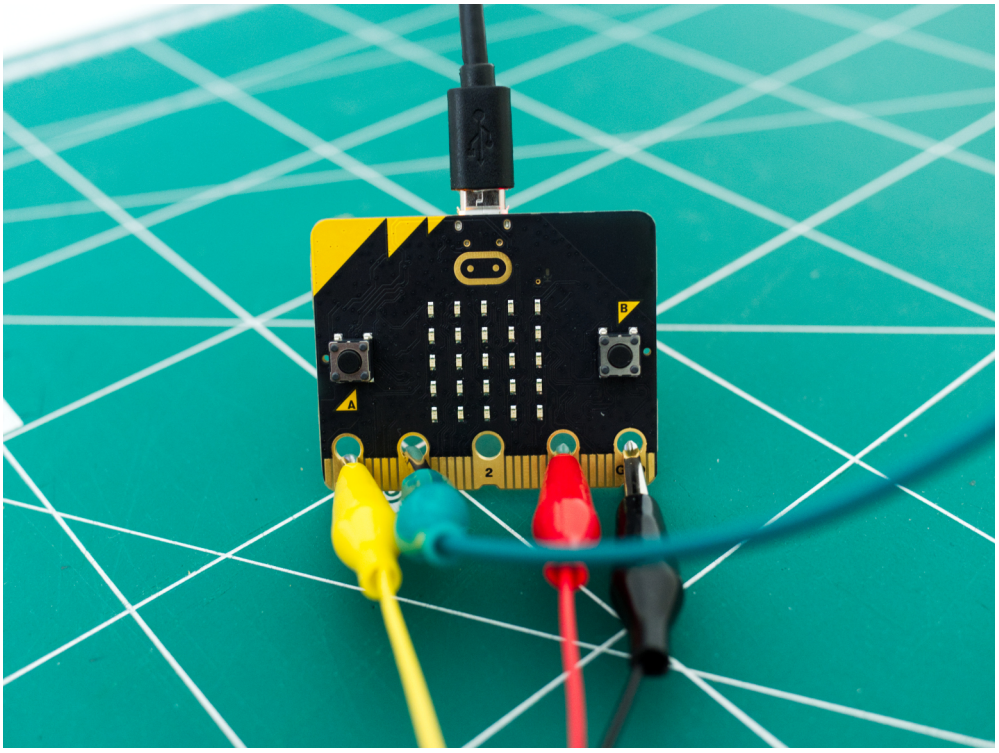
3 Add another small piece of tin foil or conductive tape at the center-bottom of the body as shown. If you want both legs to be ticklish, make sure that this smaller piece touches the foil on both legs.

4 Connect the crocodile clip through the servo cutout so that it touches the tin foil.



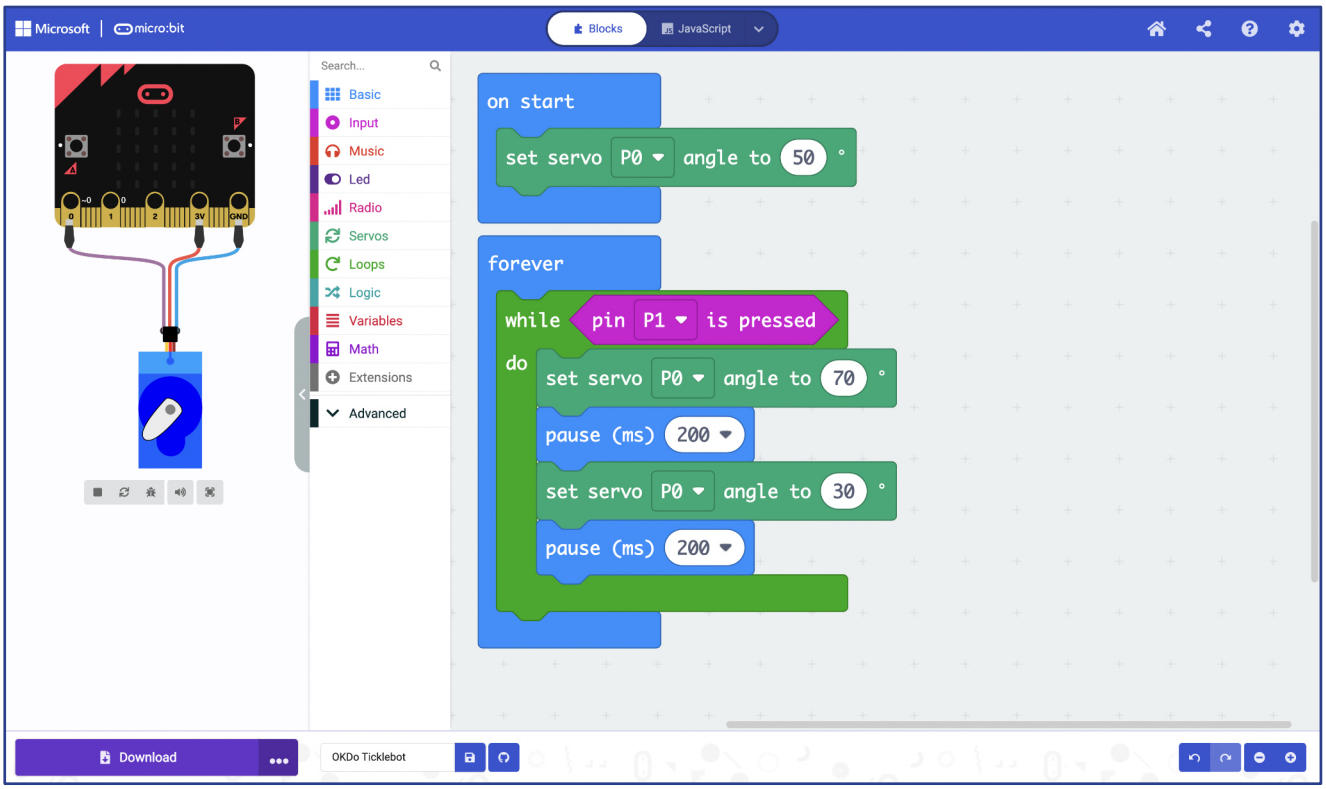


5 Connect the other end of the crocodile clip to the micro:bit at Pin 1.



6 Connect the micro:bit to your computer using the micro USB cord. The cord will be used both to transfer the code and to supply power to the micro:bit and the servo.

7 Get the code from here:
https://makecode.microbit.org/#pub:_W9rEFR9A0Cgh



8 Test it out! Tickle Cheerbot's foot (make sure you're touching the tin foil or the conductive tape) to make it move. Here's a video of it in action: https://youtu.be/Jdin_PYYk_8

You can also make the original 2-servo version of the Ticklebot with these tutorials:

https://www.jasmineflorentine.com/ticklebot

https://learn.browndoggadgets.com/Guide/Ticklebot/303

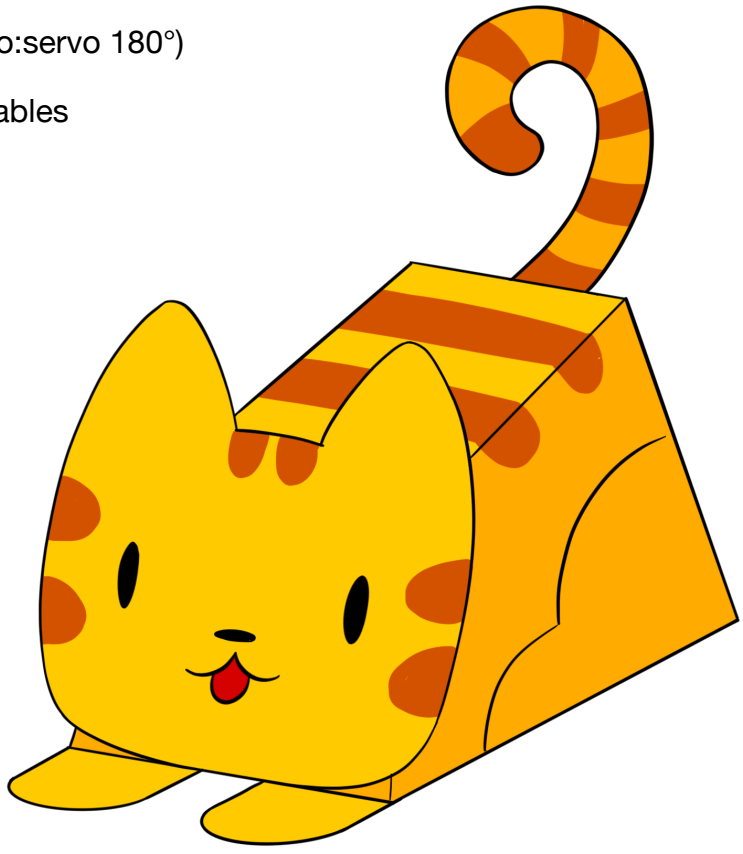
PAPER PET

Make a robotic pet that reacts wags its tail when you pet it!

Tools & Materials

Included in kit:

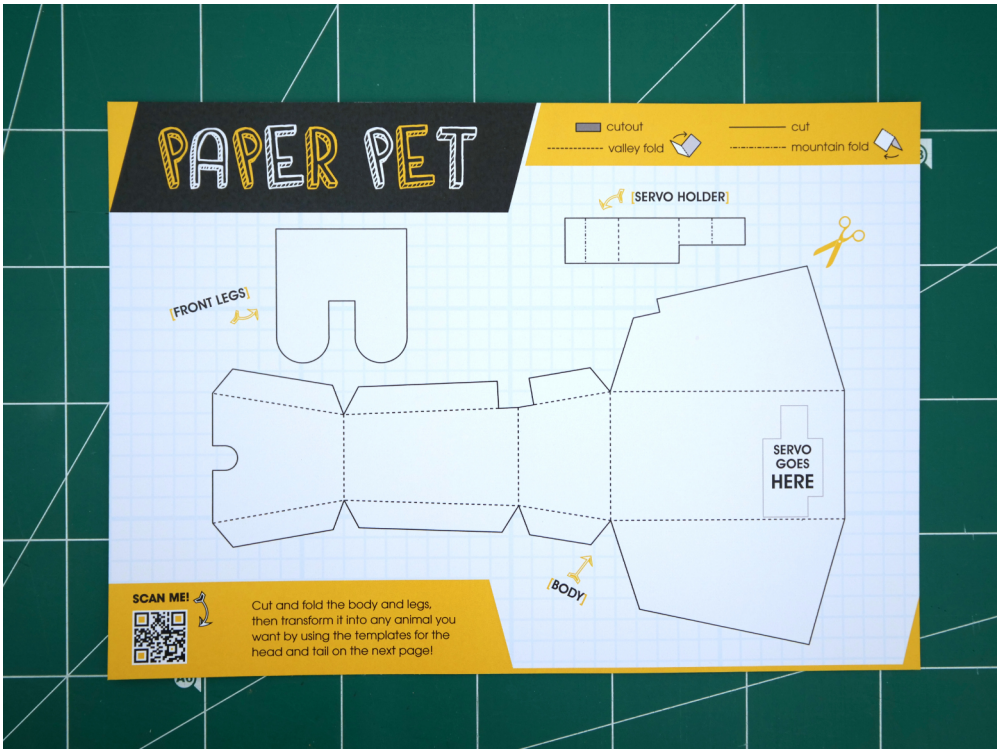
- Paper Pet Templates
  If you need to print new templates, you can download them here:
  https://www.okdo.com/p/okdo-microbit-build-a-paper-robot-kit/
- Standard Micro Servo (EF92A, micro:servo 180°)
- 3x Crocodile to Male Jumper Pin Cables
- 1x Crocodile Cable
- micro:bit v2 Board
- Micro USB Cable

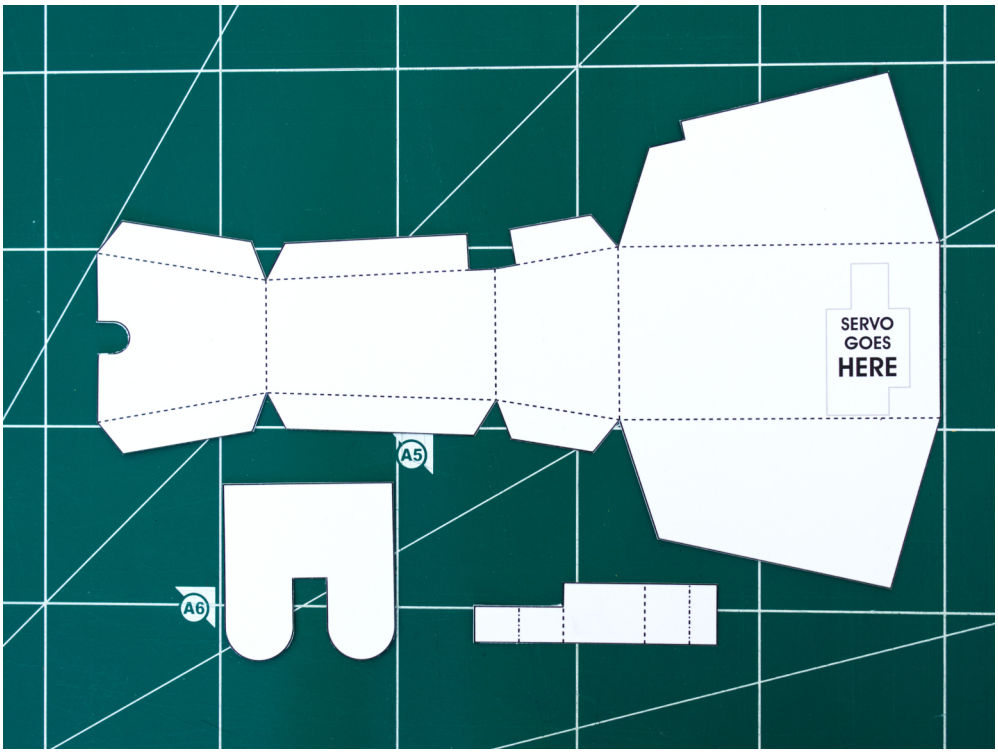


Not included in kit:

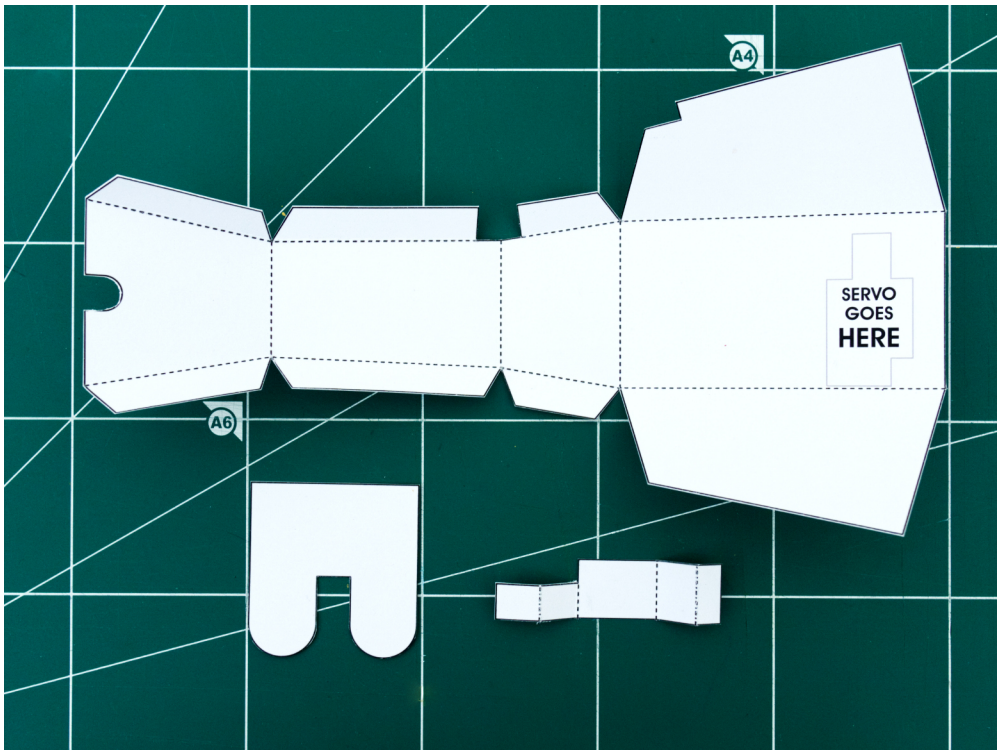
- Tin Foil (or conductive tape)
- Computer
- Scissors or Craft Knife
- Glue
- Tape

1 Start by cutting all the pieces out of first page of the template.

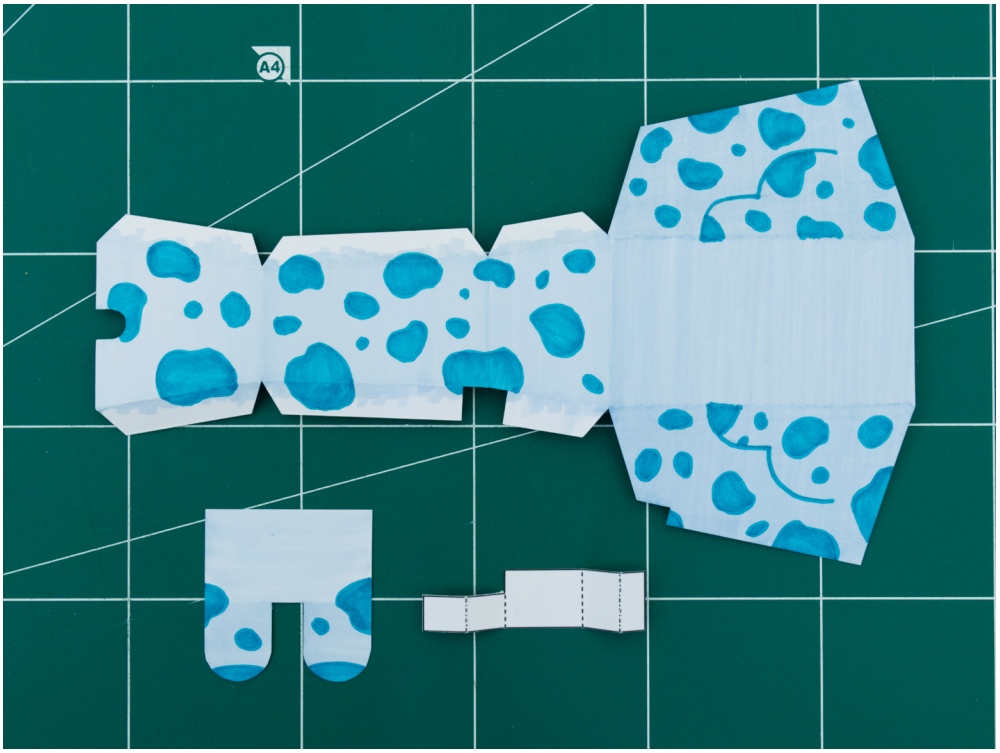




2 Pre-crease all the fold lines. This will make assembly easier later on.



3 You can decorate the Paper Pet when it's finished, but you might find it easier to color some of the parts while it's still disassembled. (I usually color the parts on the backside, since all the fold lines will be hidden on the inside).

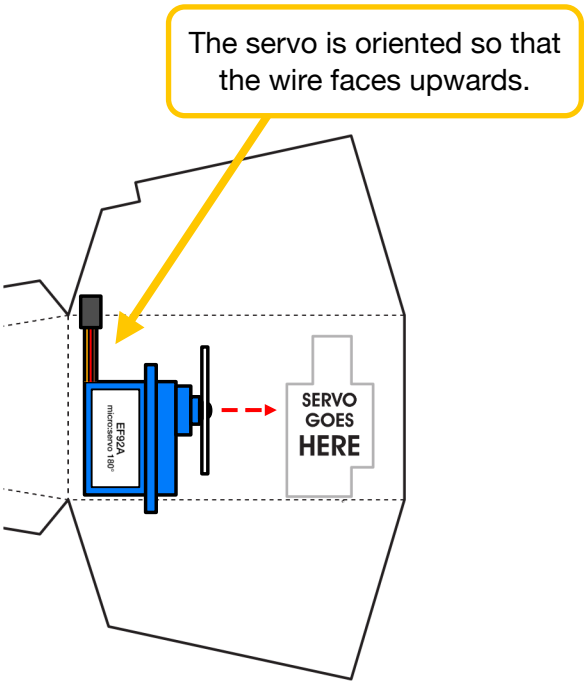


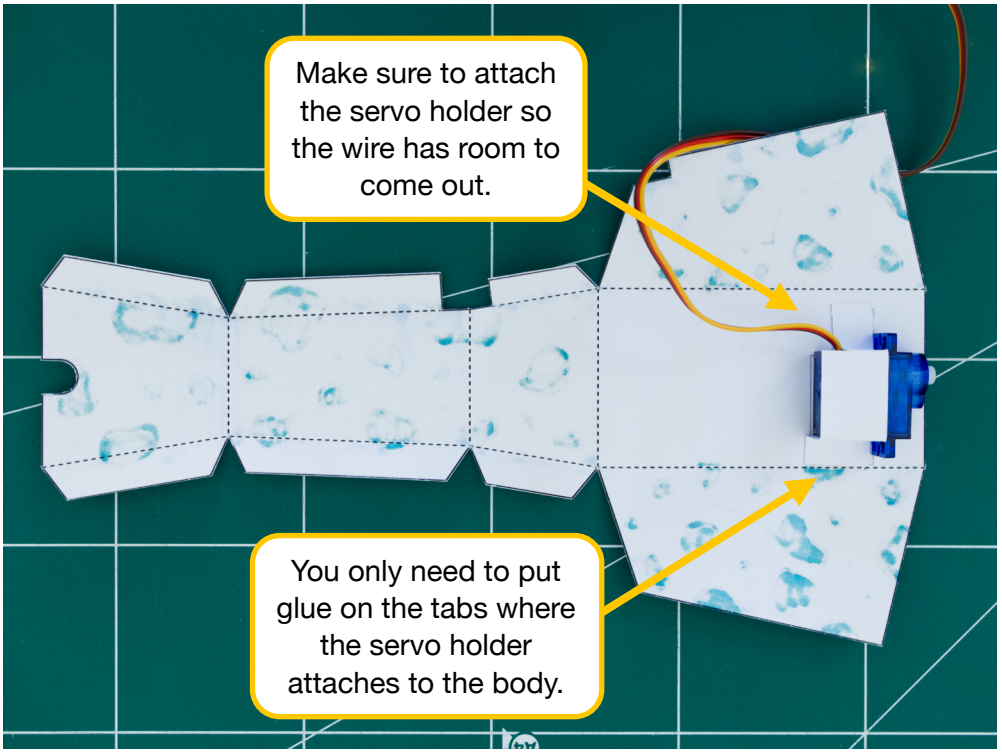
4

Glue or tape the servo holder around the servo and to the body where shown. You don't need to put glue on the servo itself, just on the paper tabs.

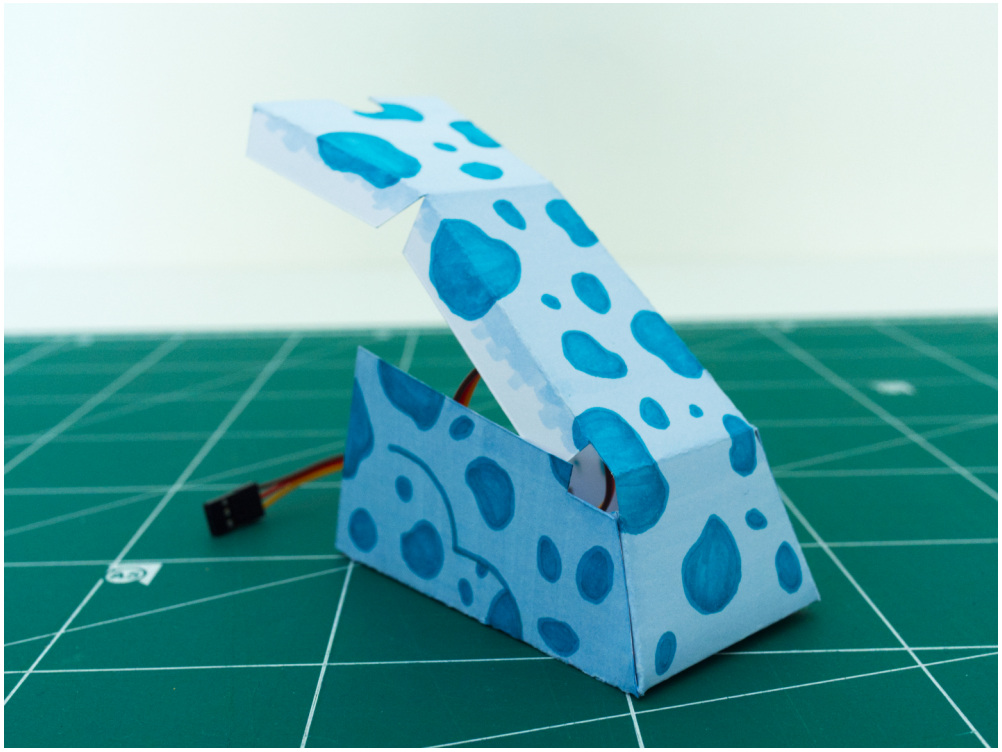
Make sure the servo is oriented with the wire coming out in the same direction as the picture below.

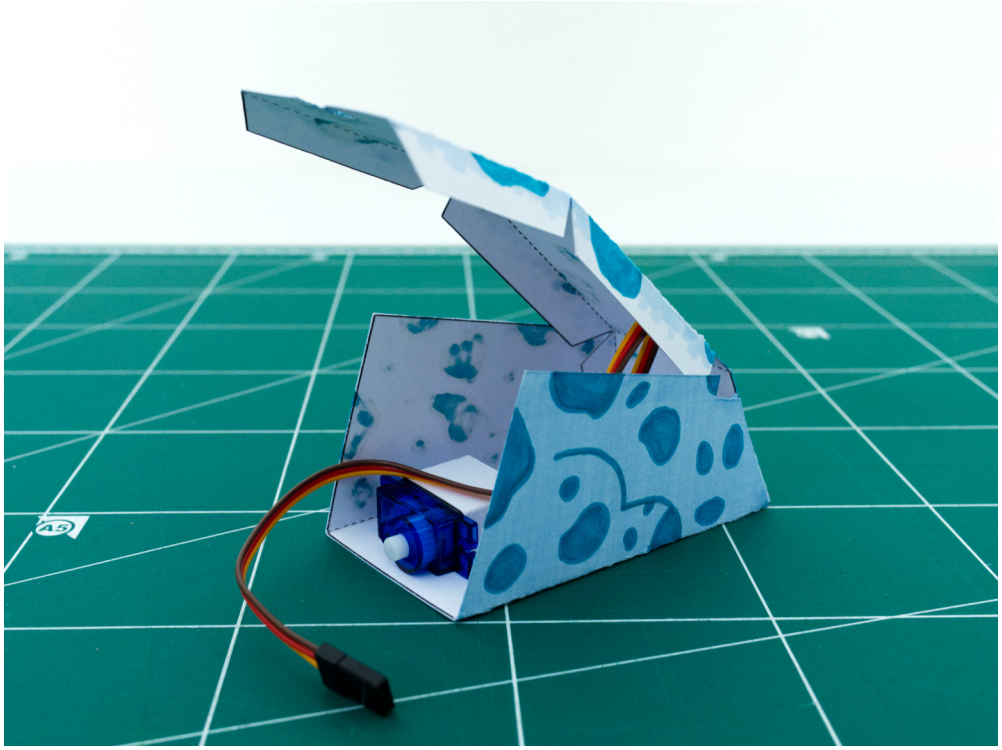
Note: For this project, make sure you're using the **standard 180° servo** (the one labeled EF92A).



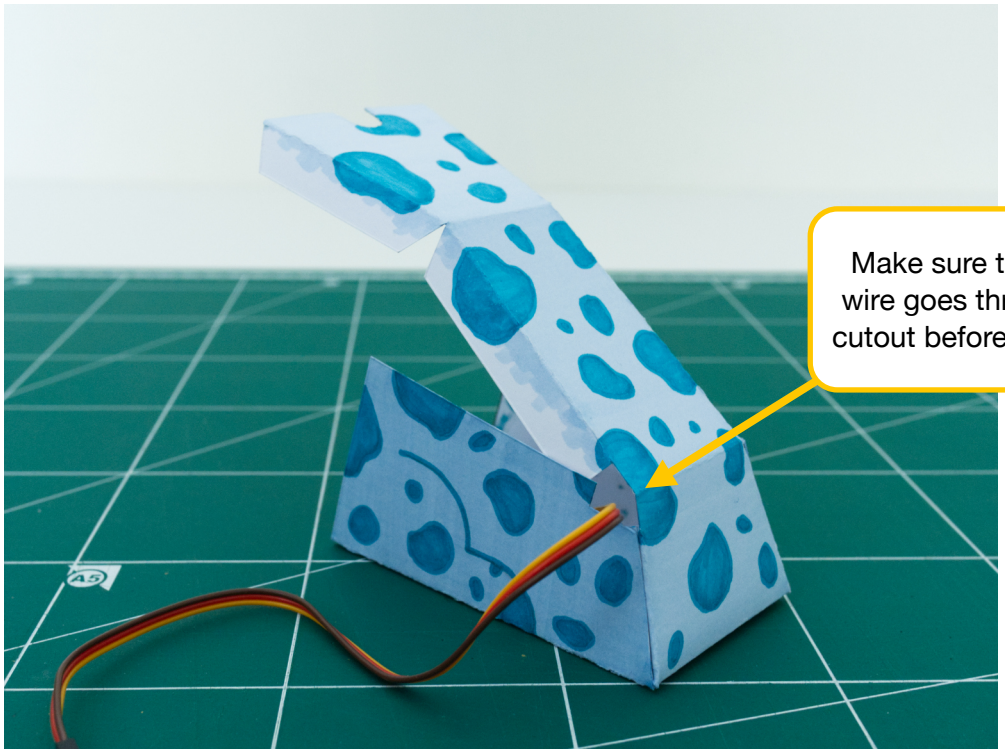


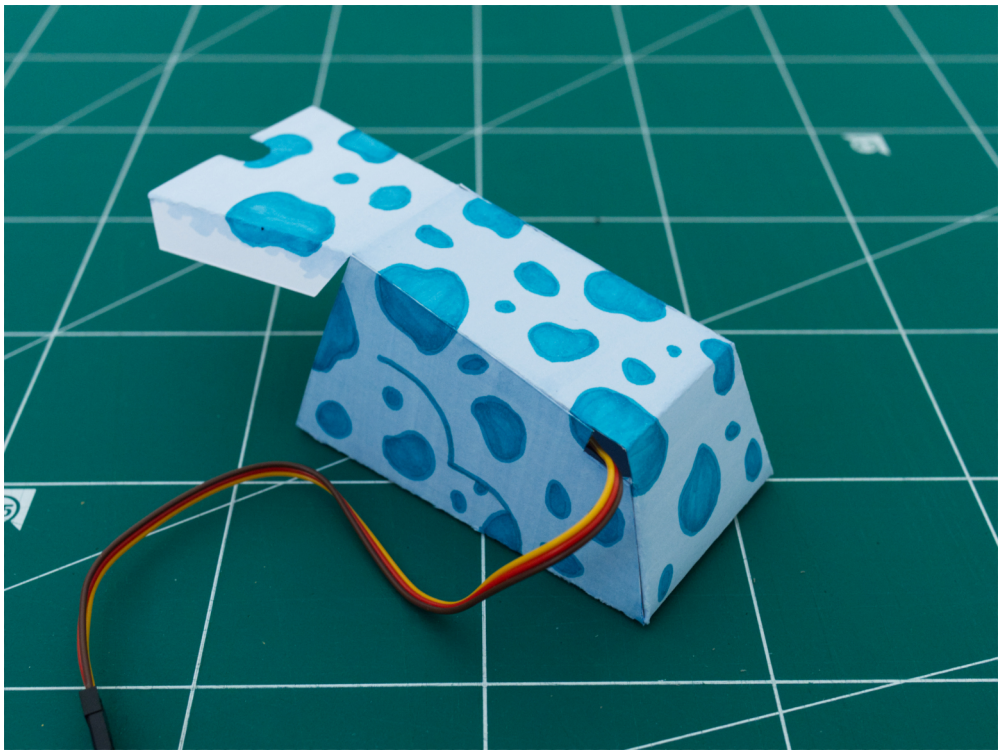
5 Fold and glue or tape the front of the body as shown.





6 Put the servo wire through the cutout, then fold and glue (or tape) the top of the body.

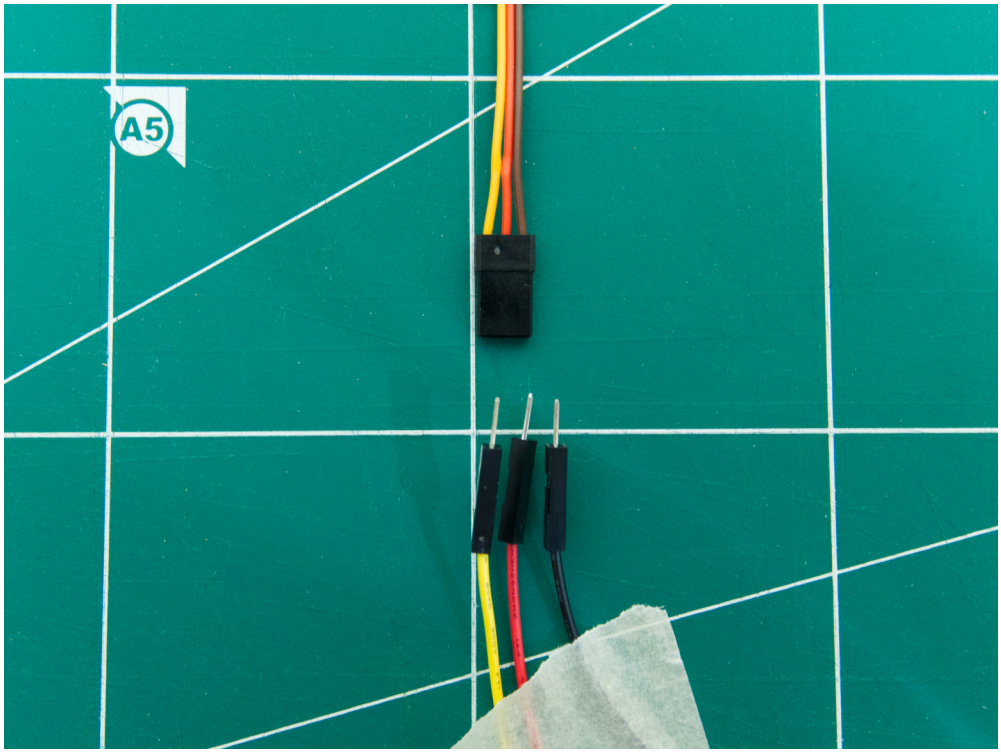


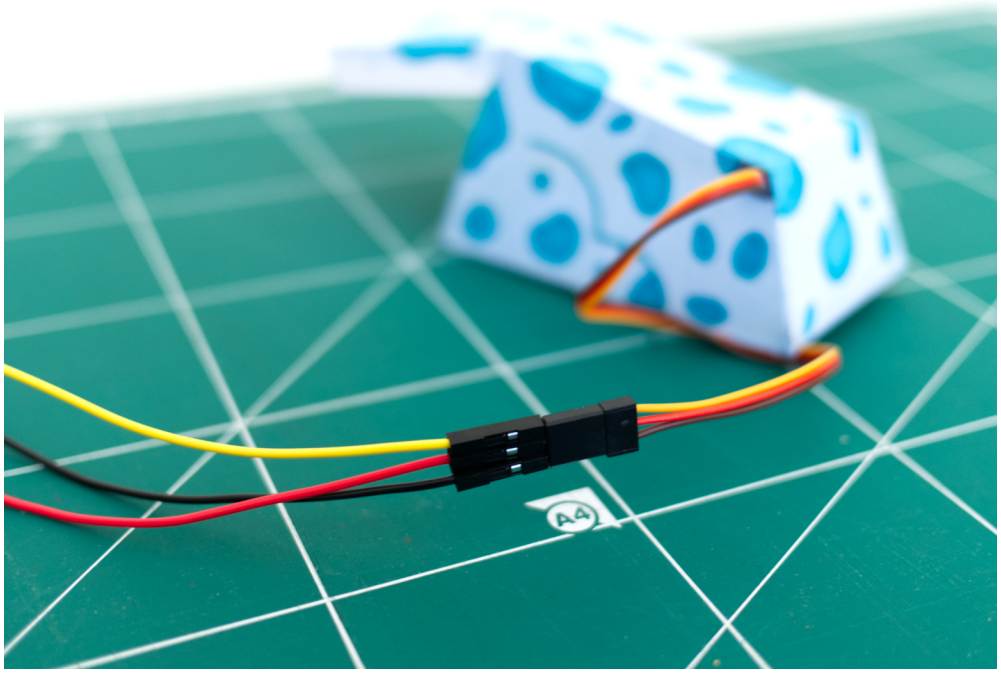


7

We need to set the angle of the servo before we finish making the rest of the body. To do that, we'll need to connect the electronics and program the micro:bit.

Connect 3 of the the crocodile to male jumper pin cables to the servo header. You can use any color of crocodile cables, but if you match the color of the servo wires to the crocodile cables, it will make it much easier to keep track of the connections.

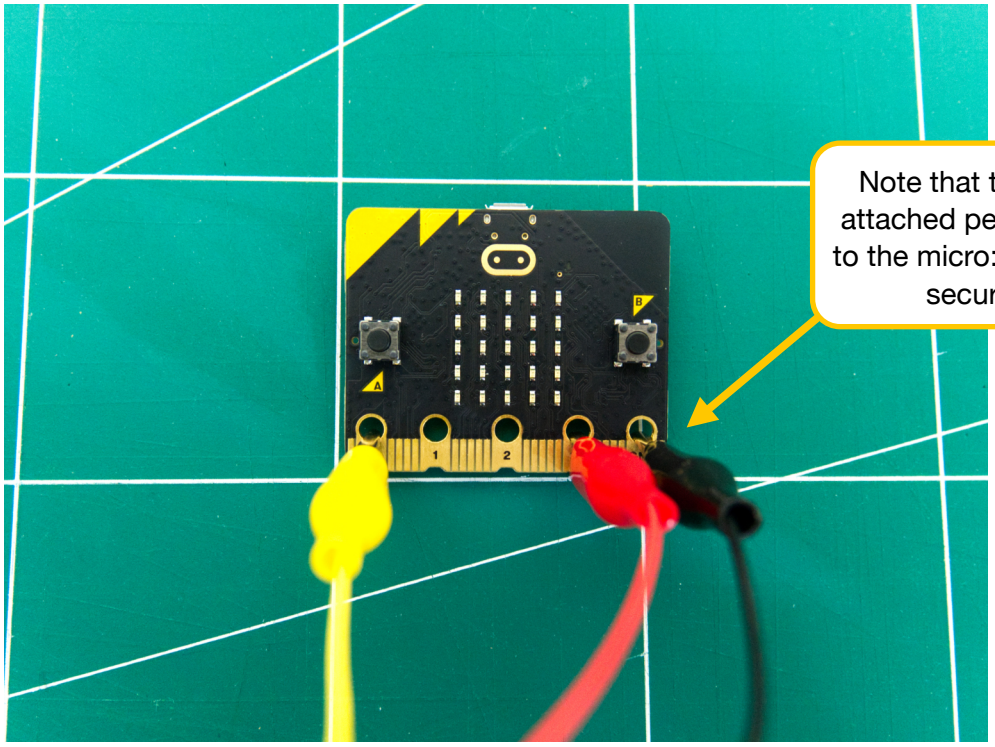


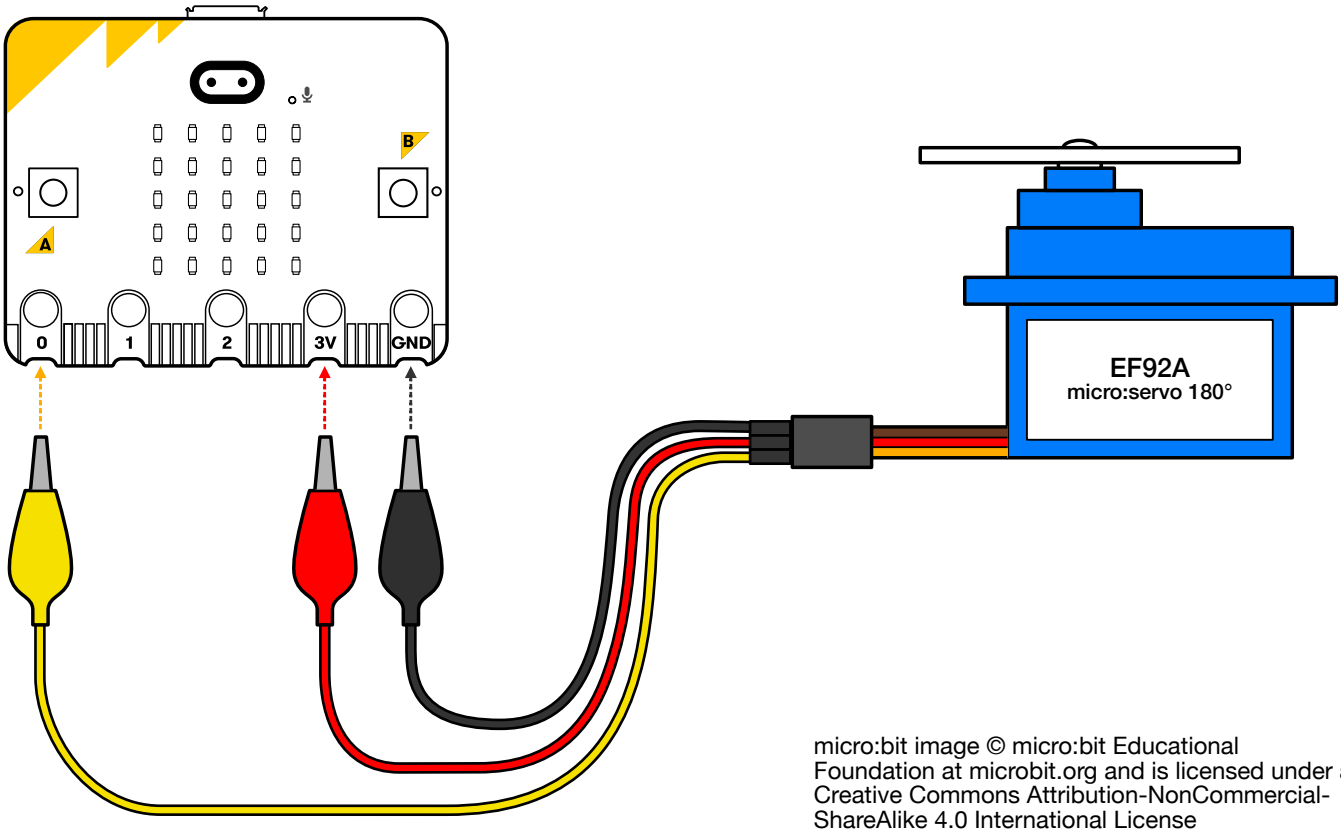


8

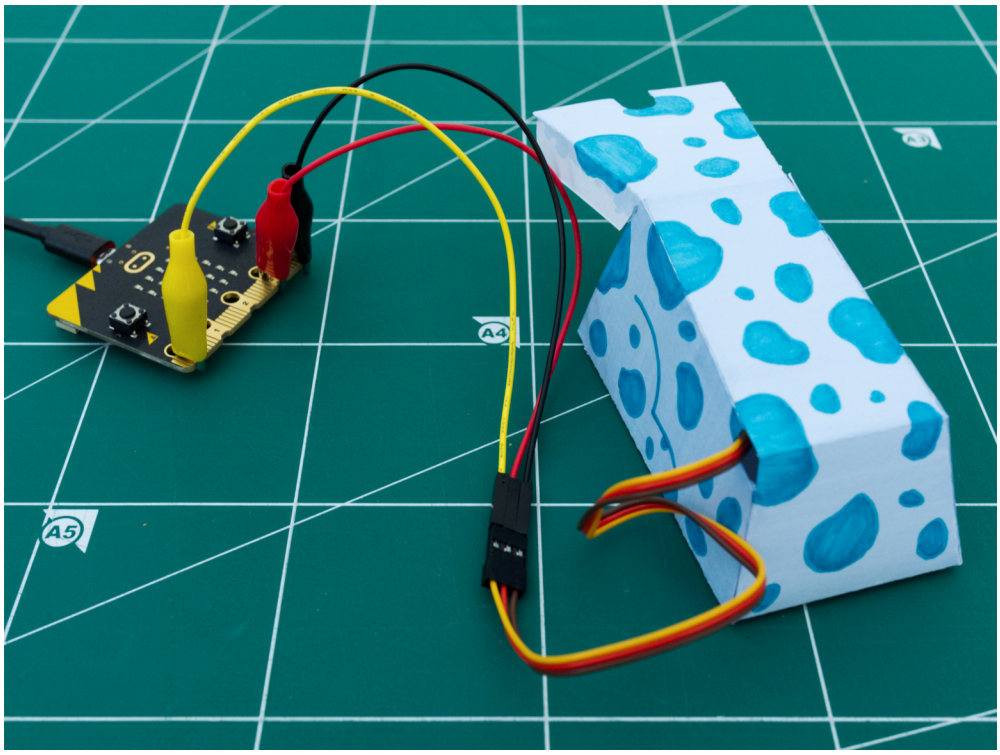
Connect the crocodile clips to the micro:bit. Make sure that they are connected as follows:

- Crocodile clip connected to the YELLOW servo wire → micro:bit Pin 0
- Crocodile clip connected to the RED servo wire → micro:bit 3V
- Crocodile clip connected to the BROWN servo wire → micro:bit GND



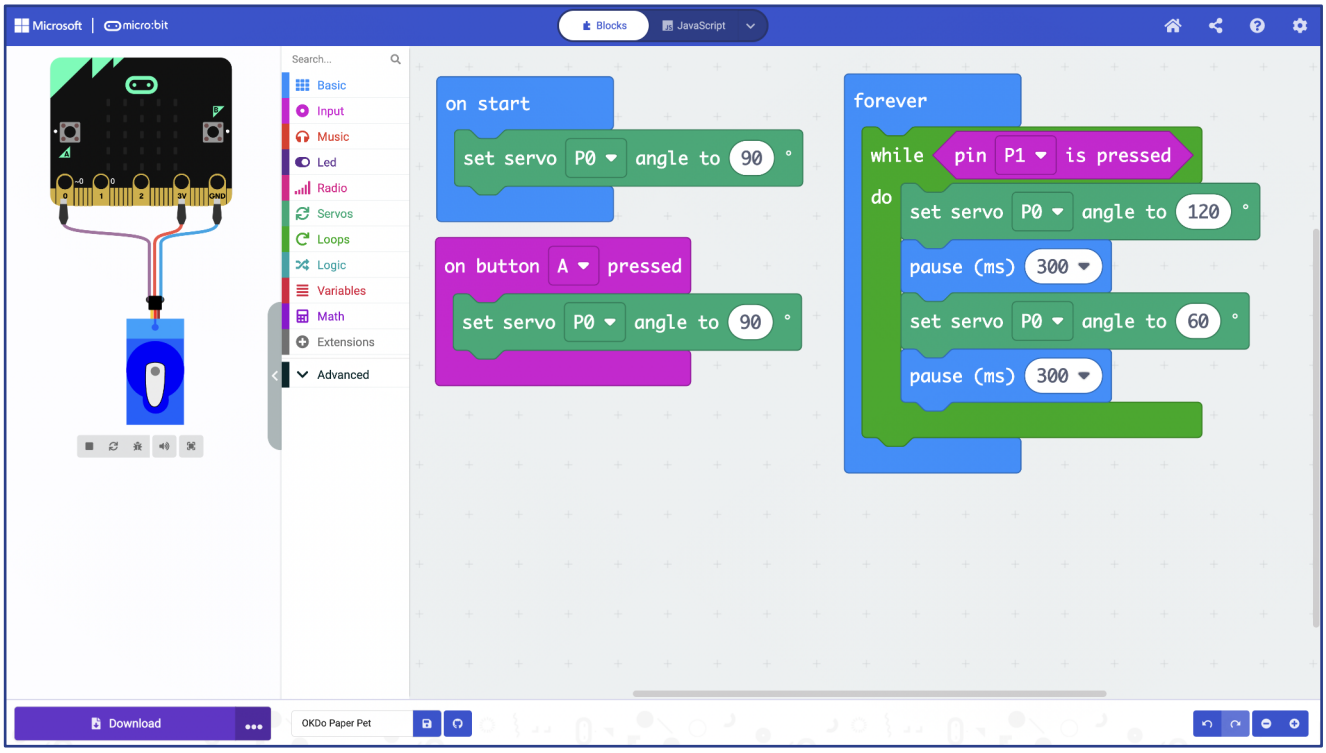


9 The servo is now connected! Next, you'll need to transfer the code to the micro:bit.



10 Connect the micro:bit to your computer using the micro USB cord. The cord will be used both to transfer the code and to supply power to the micro:bit and the servo.

11 Get the code from here:
https://makecode.microbit.org/#pub:_0pCMDyUtd9Cr



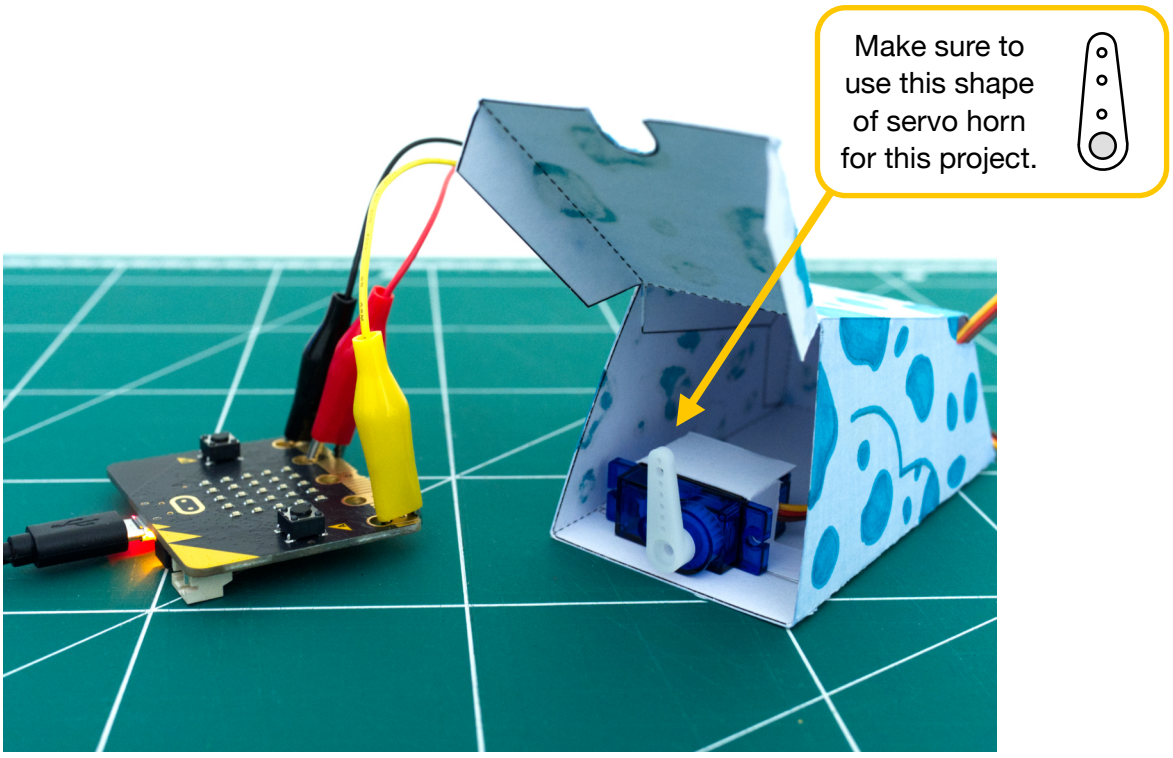
12 Upload the code to the micro:bit using the following instructions (choose in the instructions what type of computer and browser you're using for more specific directions):

https://microbit.org/get-started/first-steps/set-up/

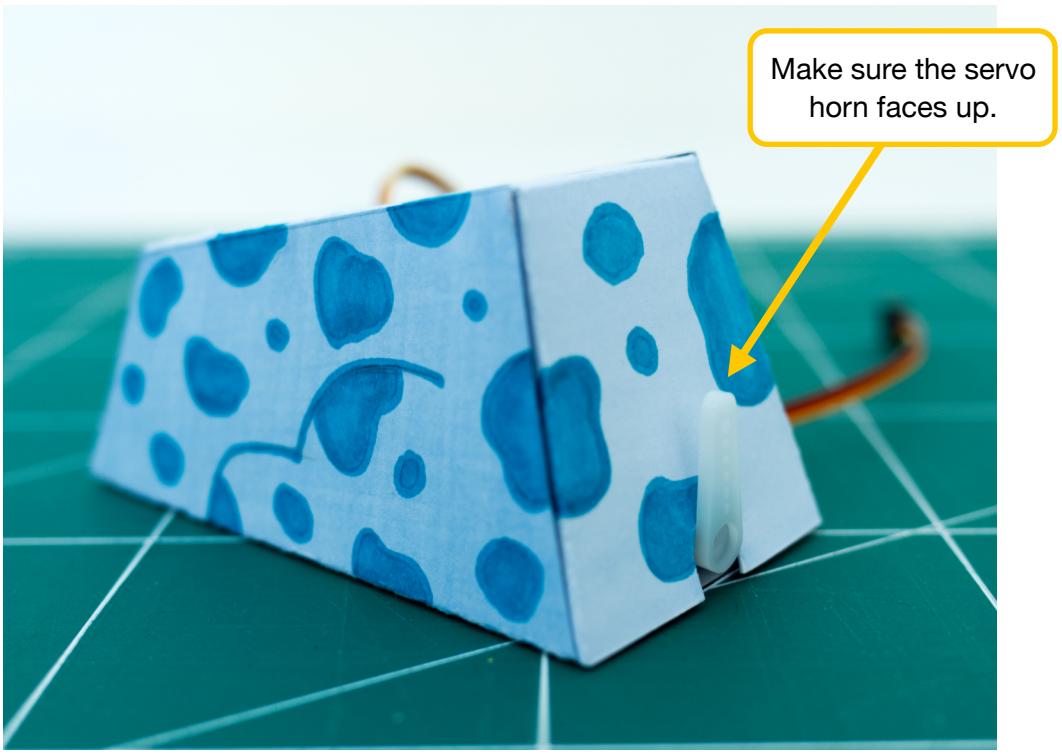
or

https://makecode.microbit.org/device/usb

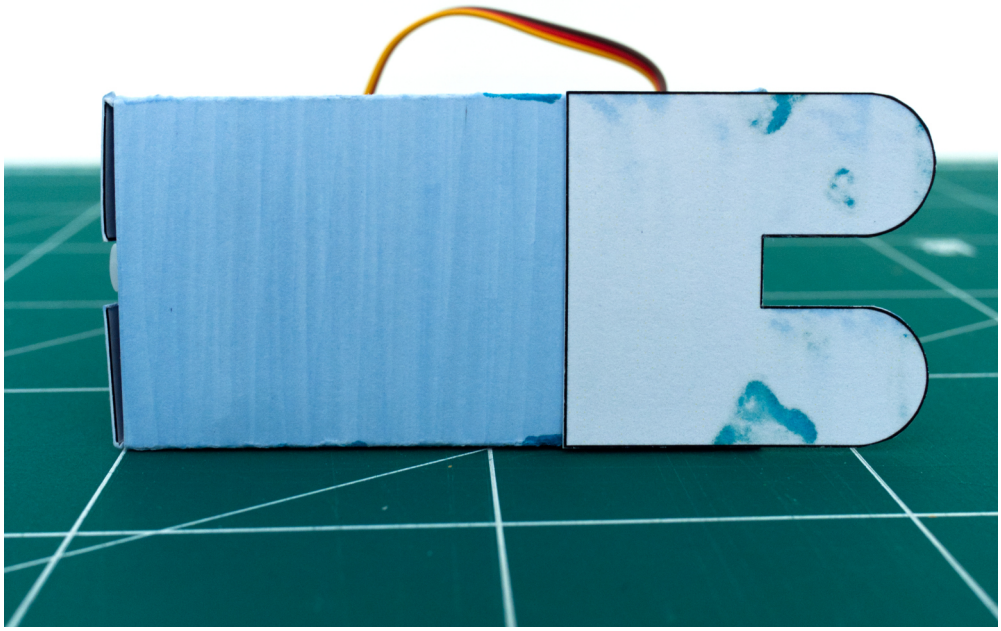
13 With the electronics connected, press the A button to center the servo's position. That way, when you attach the tail, it will start at the right position and won't get caught at some weird angle. I've attached the servo horn to better see the angle, but you don't have to.



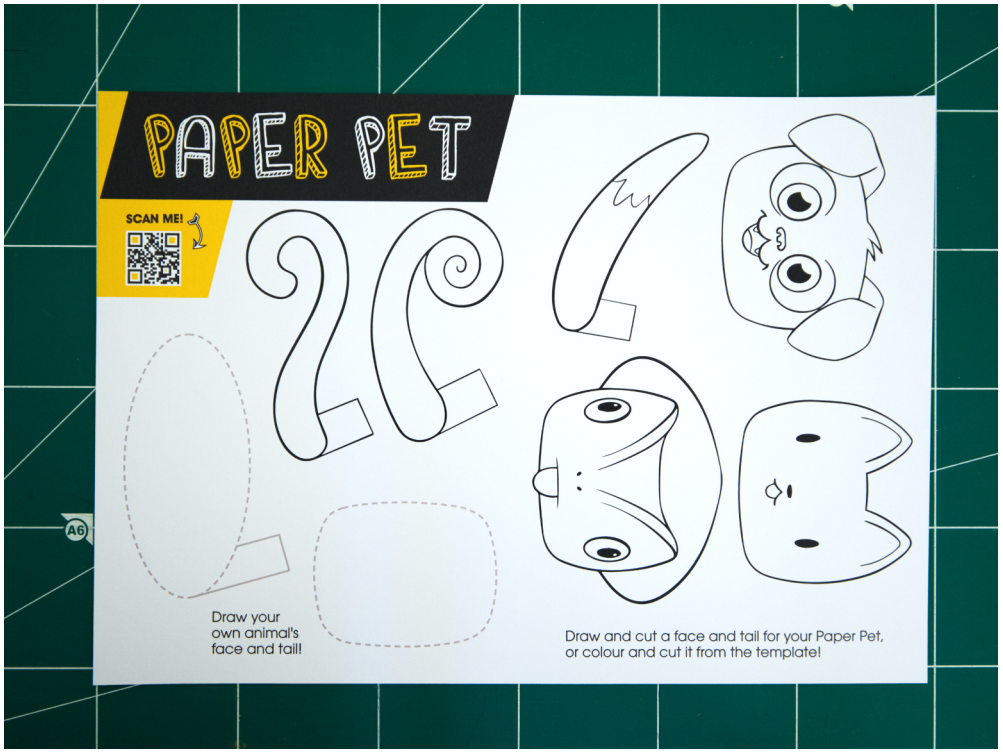
14 Remove the servo horn, fold the back of the body in, and then put the servo horn back on at the same angle (facing upward as shown). The servo horn should hold the back of the body closed even without glue or tape.



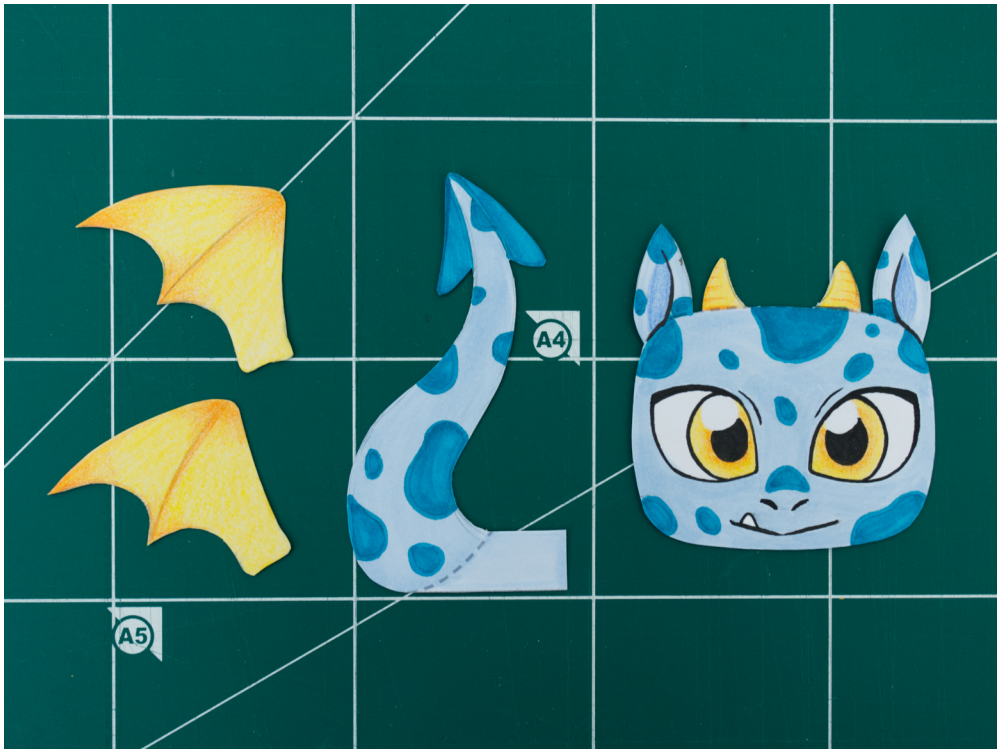
15 Glue legs onto the body. You can unplug the servo in the meantime.



16 Give your Paper Pet a face and tail! You can draw your own face and tail or use the provided template. I decided to draw and color my own for this tutorial.

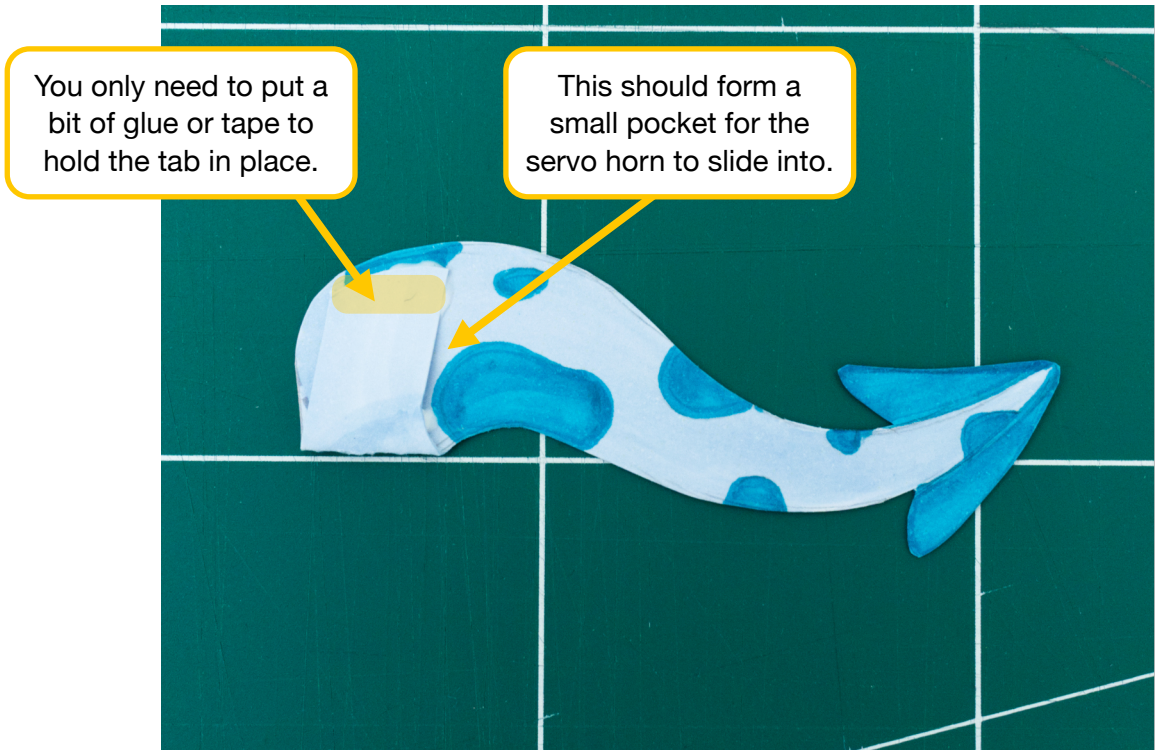


17 Cut out the face and tail. I also decided to give my Paper Pet wings.

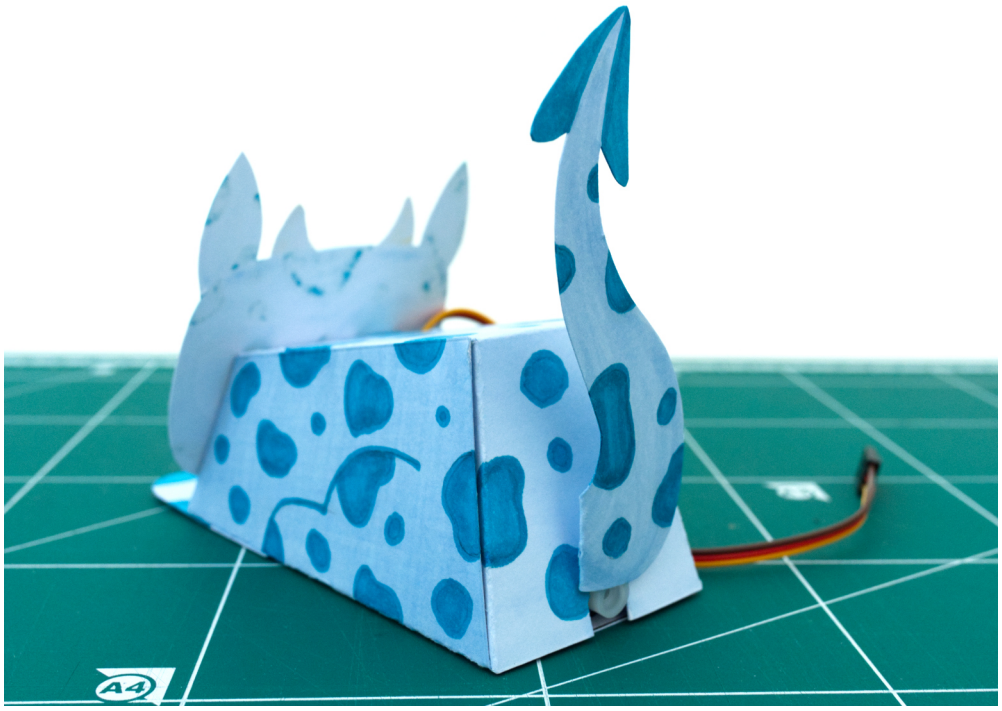


18 Glue or tape the face onto the front of the body.

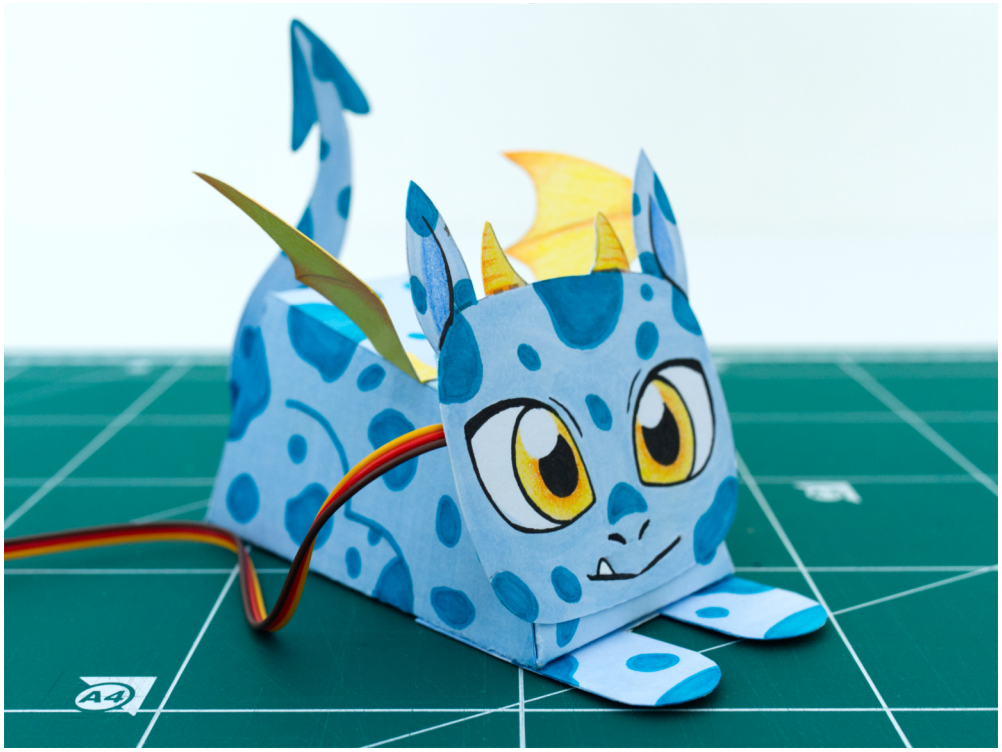
19 Fold the tab on the tail over (and trim if necessary). Put a tiny bit of glue just on the end of the tab to form a pocket. If you use tape, make sure to only seal the tab closed on the end so you can slide the tail onto the servo horn.



20 Slide the tail onto the servo horn by using the tab you just made.

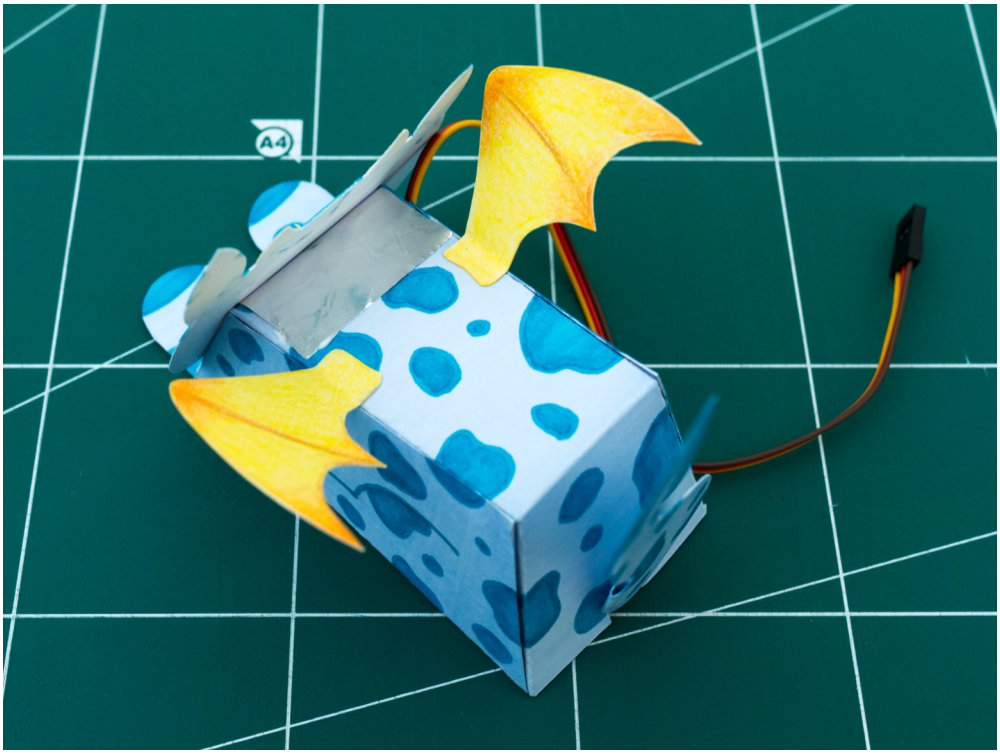


21 Glue or tape on any other decorations. I glued wings onto my Paper Pet.

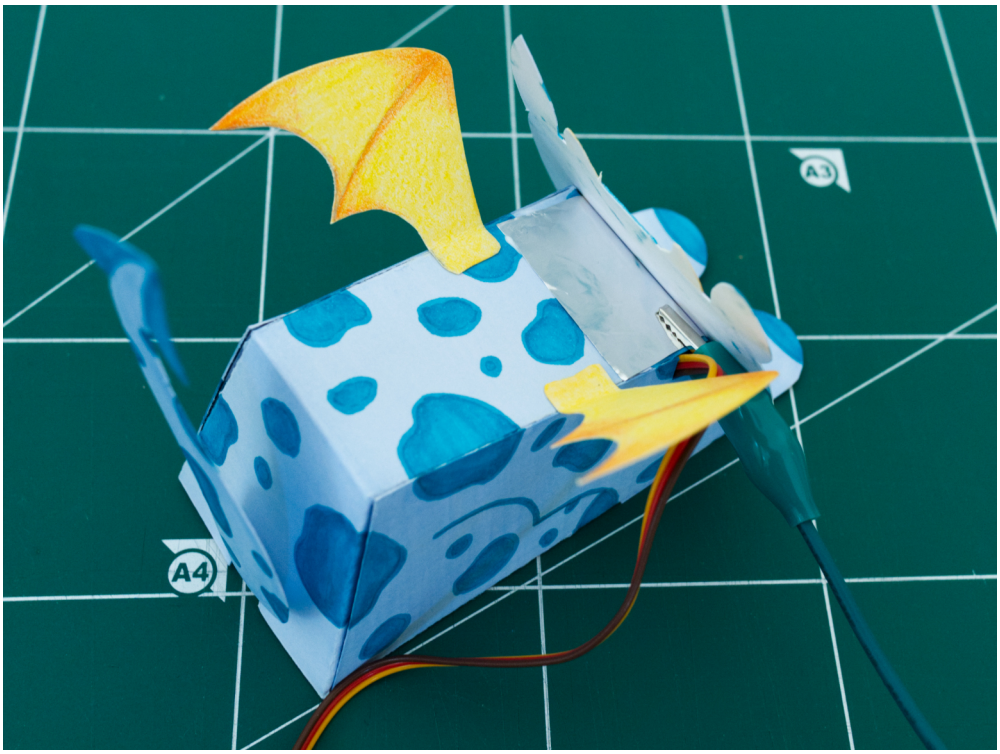


22 Cut a small piece of tin foil, around 3.5 centimeters by 2 centimeters.

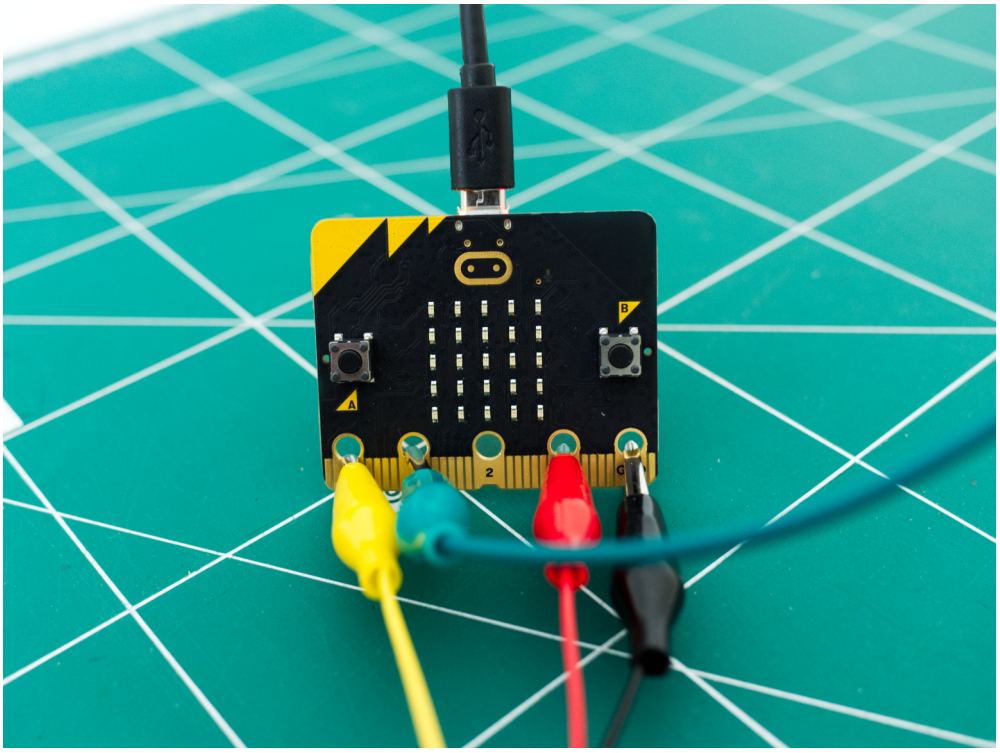
23 Glue the tin foil to the bottom of the leg (you can also use conductive tape instead of tin foil).



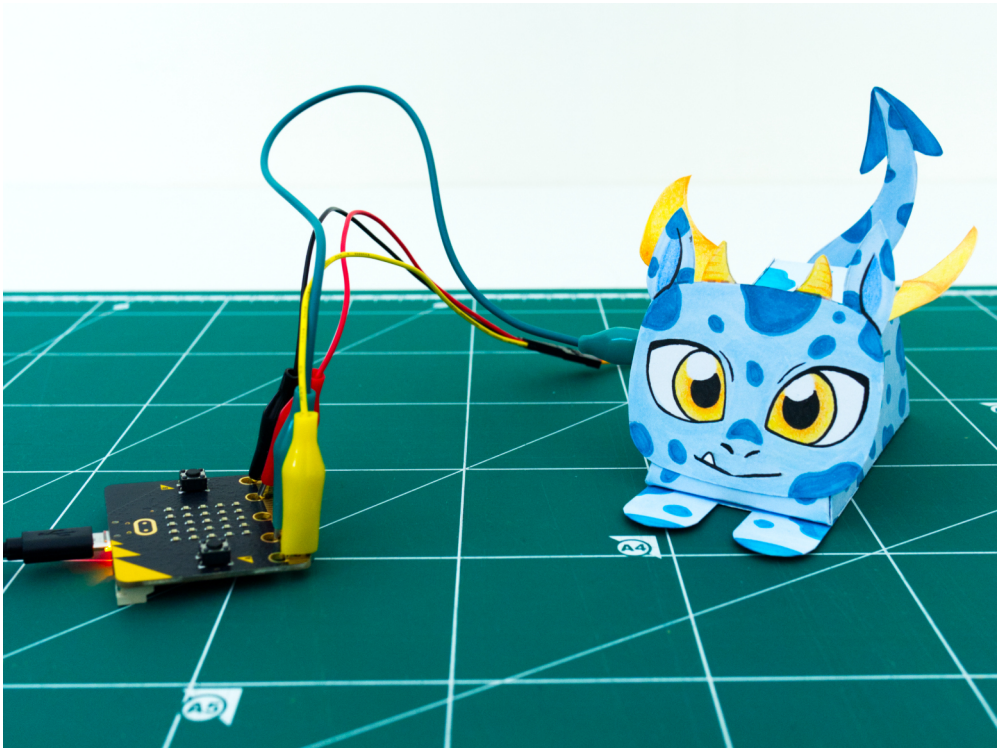
24 Connect one end of the crocodile clip to through the same cutout as the servo wire so that it touches the tin foil.



25 Connect the other end of the crocodile clip to the micro:bit at Pin 1.



26 Reconnect the servo if you disconnected it earlier.



27 Test it out! Pet the Paper Pet's back where the tin foil is to make its tail wag! Here's a video of it in action: https://youtu.be/6XajYJ6iuwg

28 Experiment! Can you make the Paper Pet more interactive by programming in other inputs and outputs? Check out micro:bit's tutorial for making a Virtual Pet for inspiration: https://microbit.org/projects/make-it-code-it/microbit-pet/

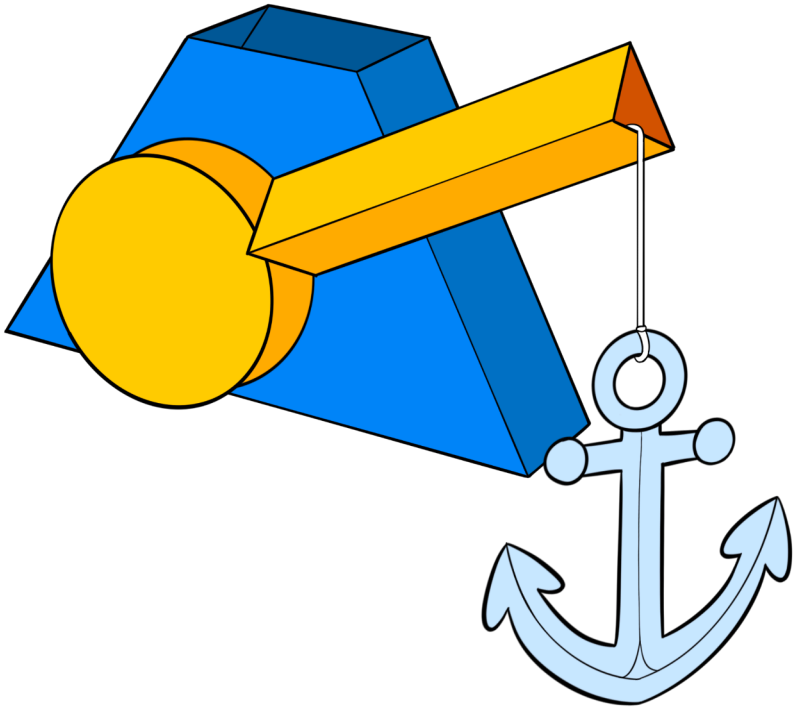
LIFTY CRANE

Make a robot that lifts or lowers an object when you press the A or B buttons on the micro:bit.

Tools & Materials

Included in kit:

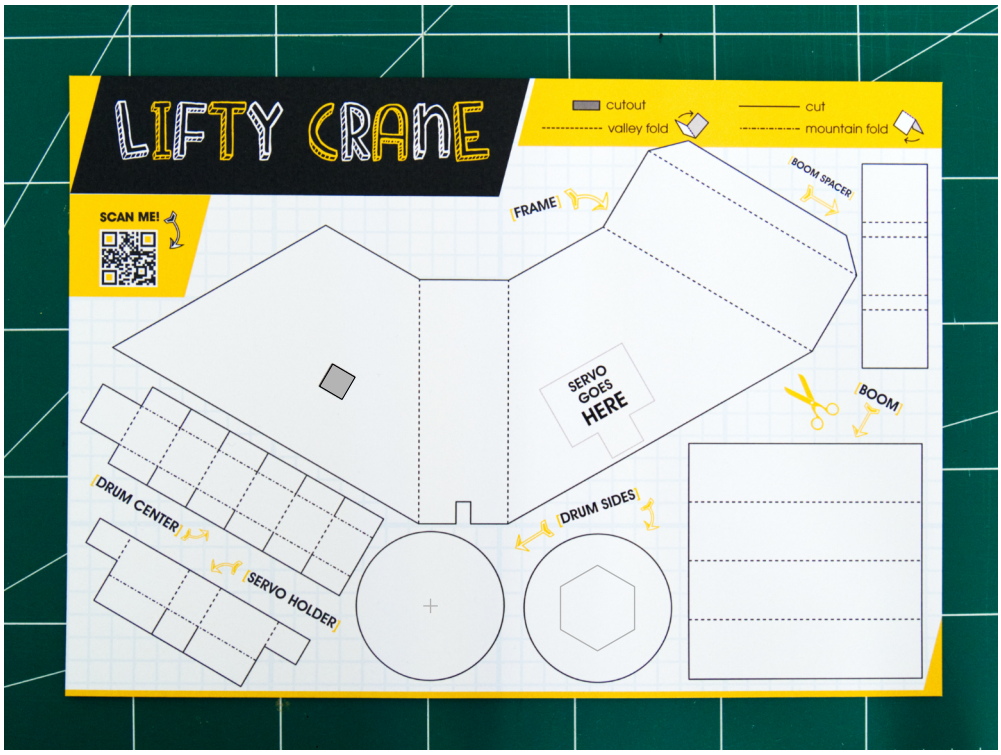
- Lifty Crane Templates
  If you need to print new templates, you can download them here:
  https://www.okdo.com/p/okdo-microbit-build-a-paper-robot-kit/
- Continuous Rotation Micro Servo (EF90D, micro:servo 360°)
- 3x Crocodile to Male Jumper Pin Cables
- micro:bit v2 Board
- Micro USB Cable

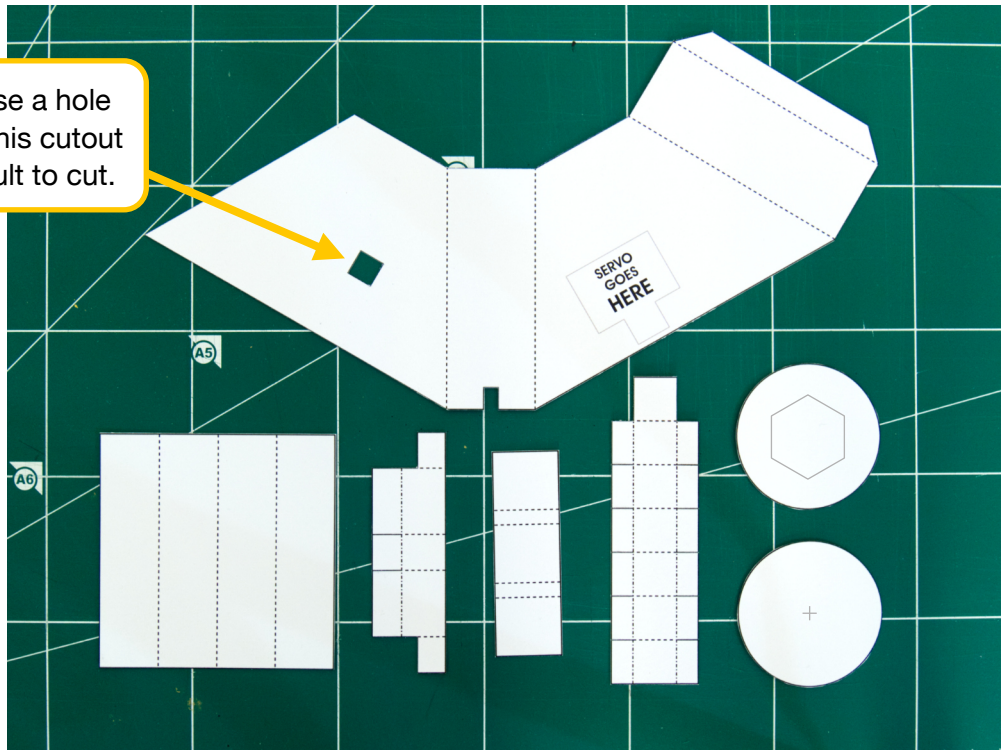


Not included in kit:

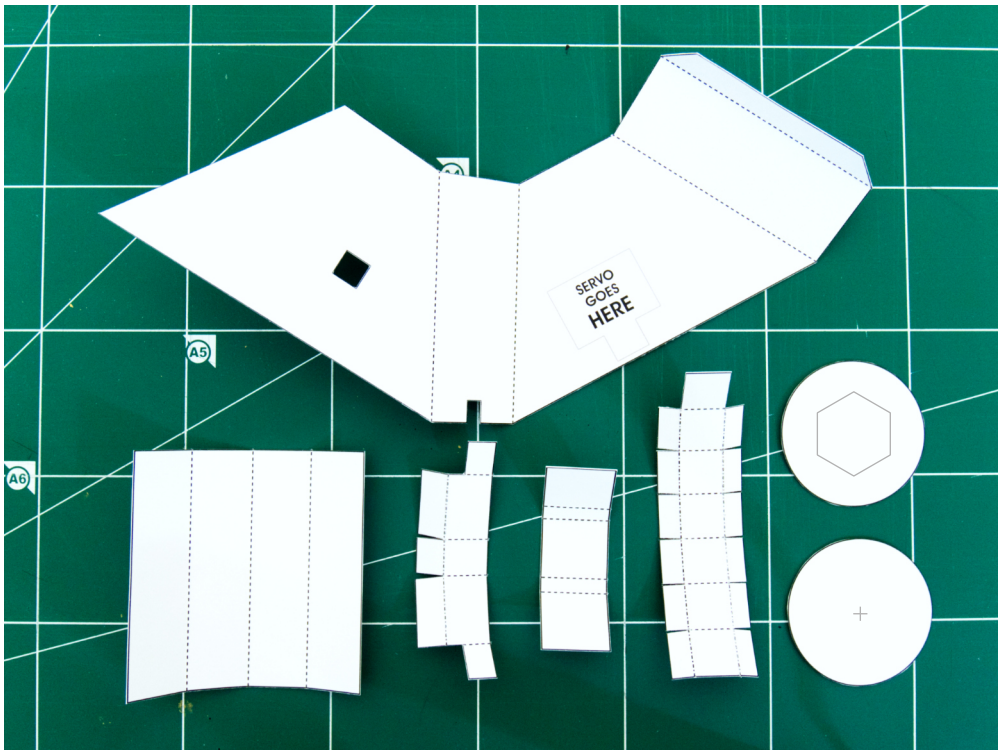
- Computer
- Scissors or Craft Knife
- Glue
- Tape
- String (dental floss works great)

1 Start by cutting all the pieces out of first page of the template. You might find it easiest to use a craft knife for the cutouts (the part shaded in grey). Make sure to have an adult help if you use a craft knife.

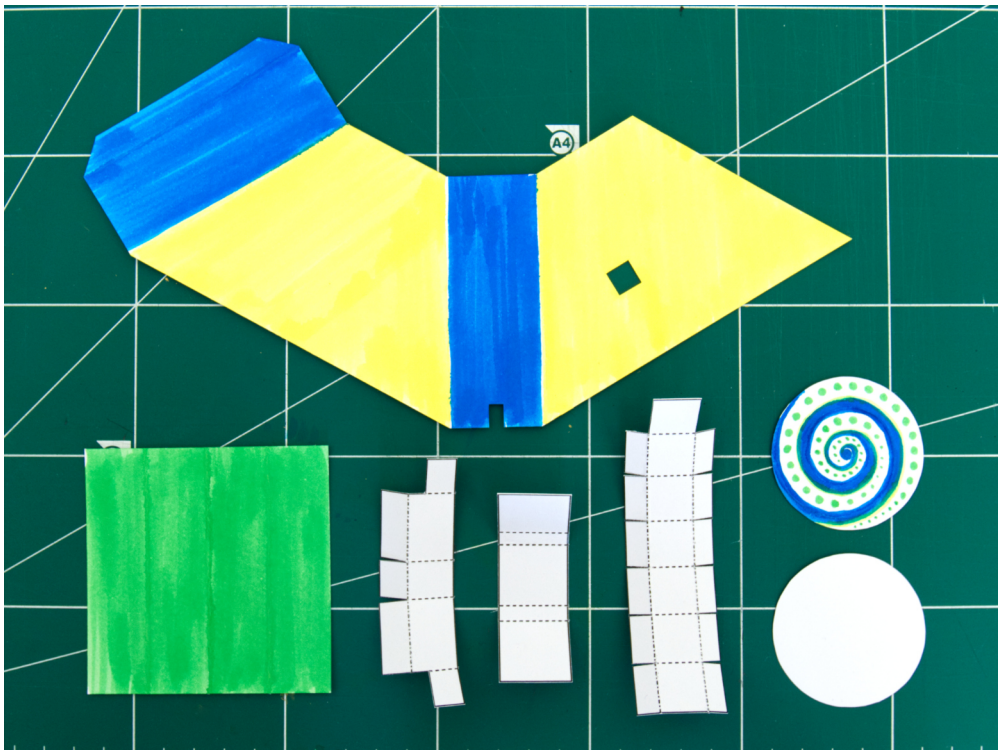




2 Pre-crease all the fold lines. This will make assembly easier later on.

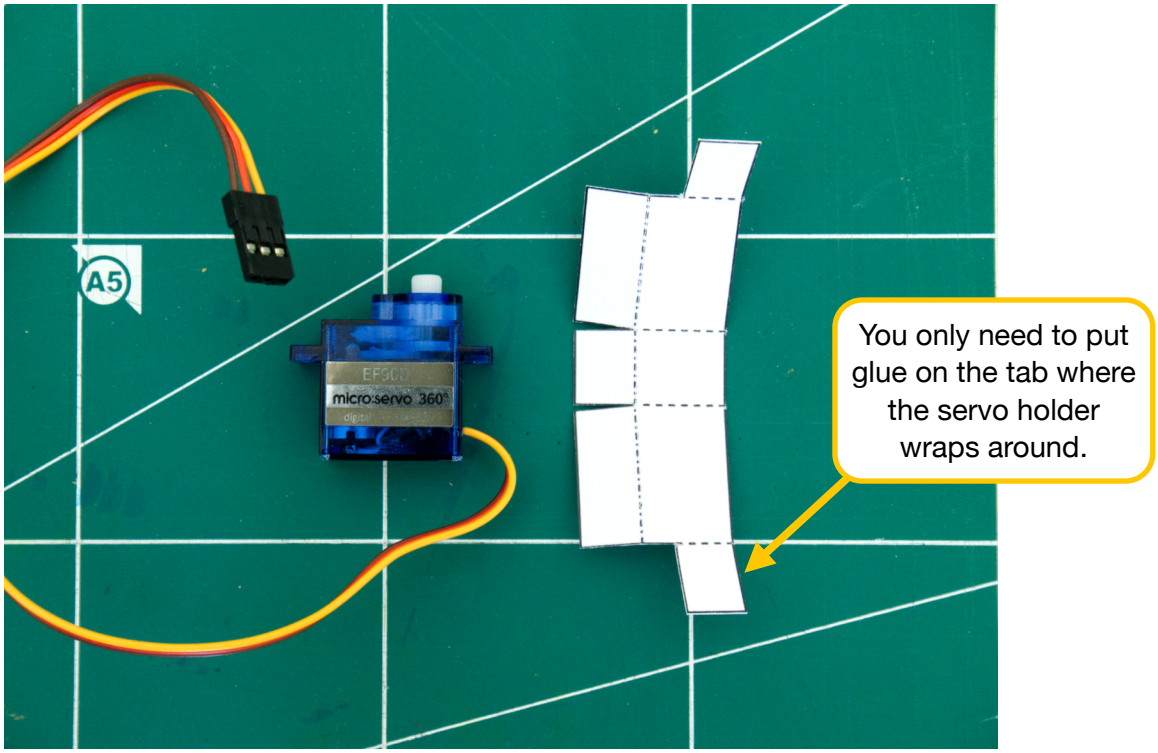


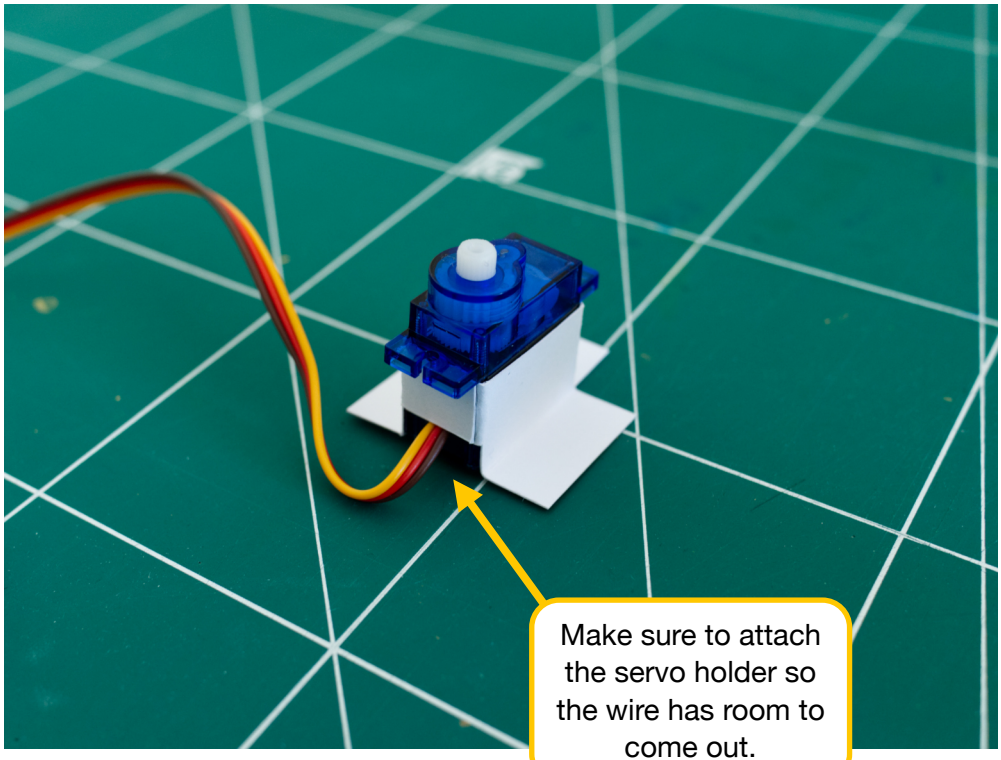
3 You can decorate the Lifty Crane when it's finished, but you might find it easier to color some of the parts while it's still disassembled. (I colored the parts on the backside, since all the fold lines will be hidden on the inside).



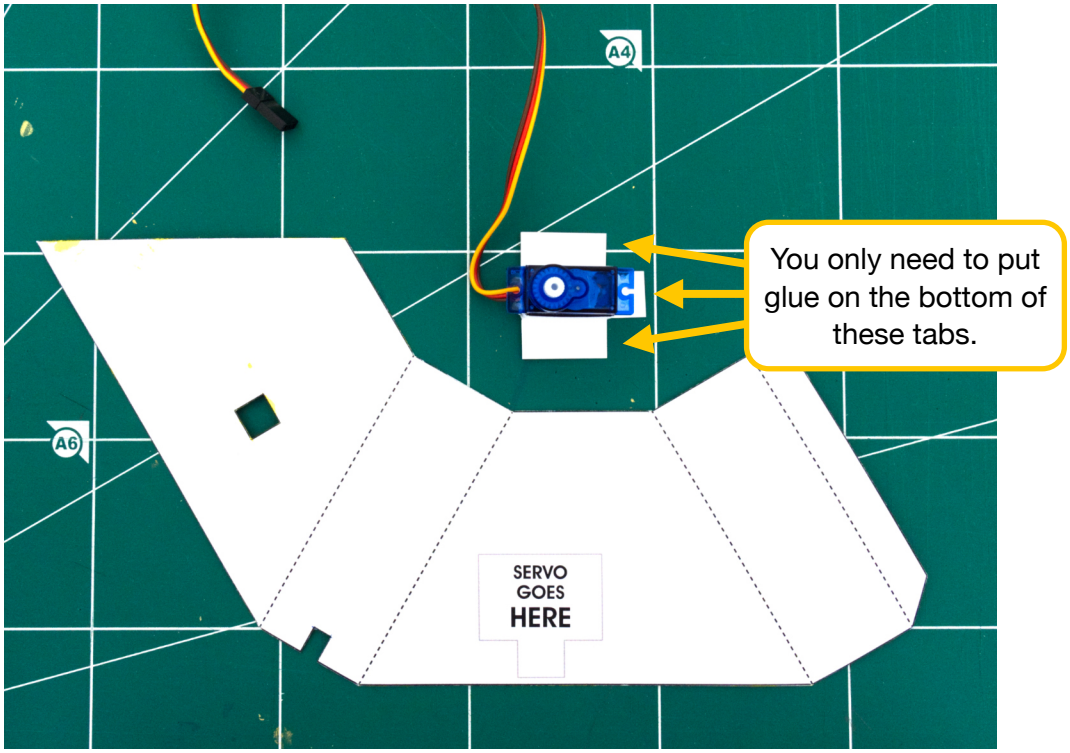
4 Glue or tape the servo holder around the servo. You don't need to put glue on the servo itself, just on the paper tabs that wrap around the servo body.

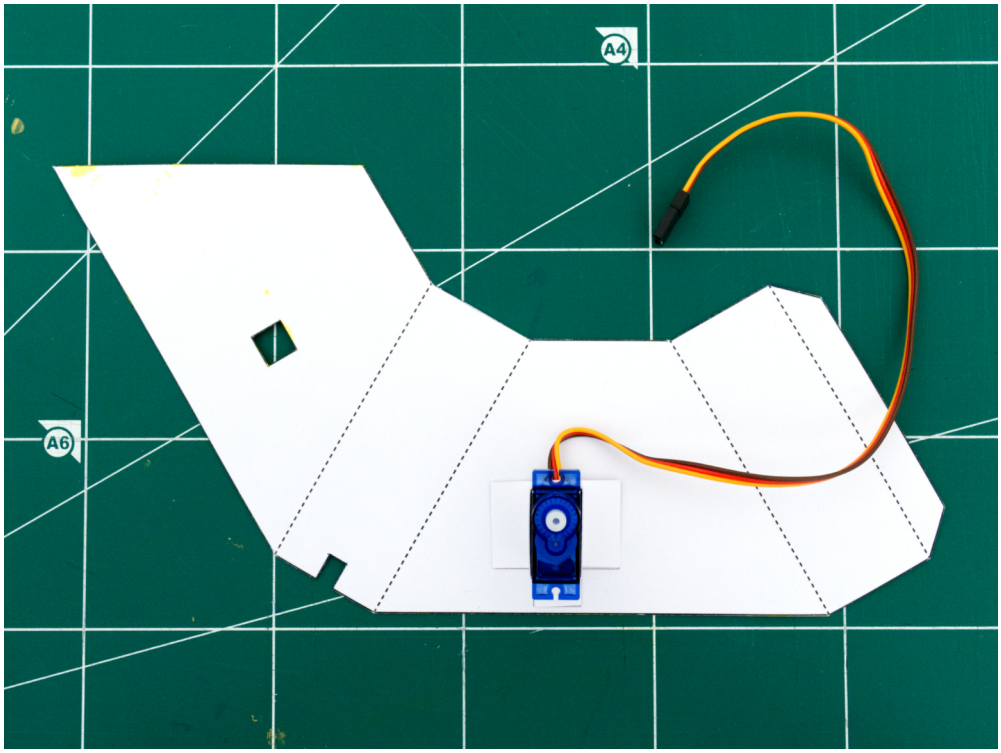
Note: For this project, make sure you're using the **continuous rotation 360° servo** (the one labeled EF90D).



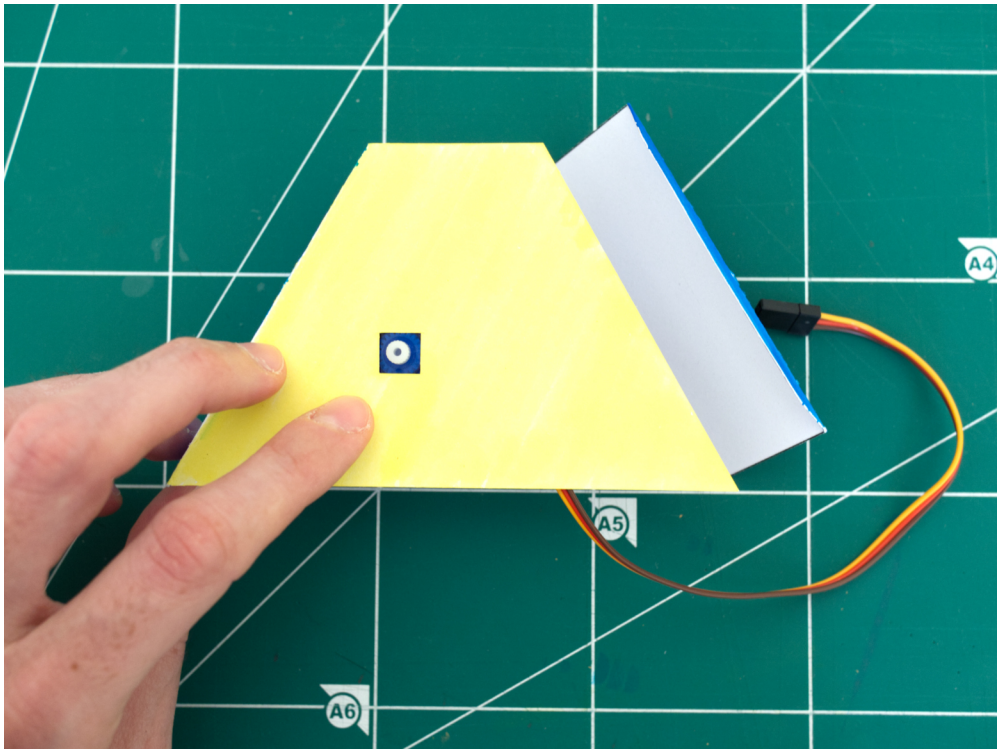


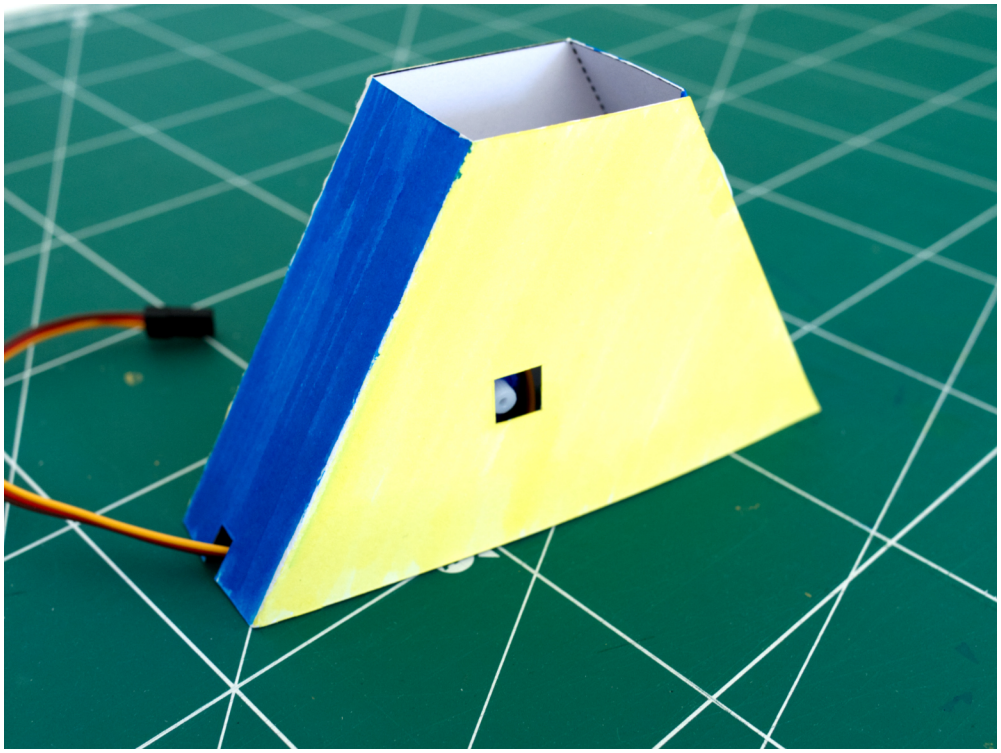
5 Glue or tape the servo in place where shown. Once again, you don't need to put glue on the actual servo — you can just put it on the paper tabs of the servo holder.



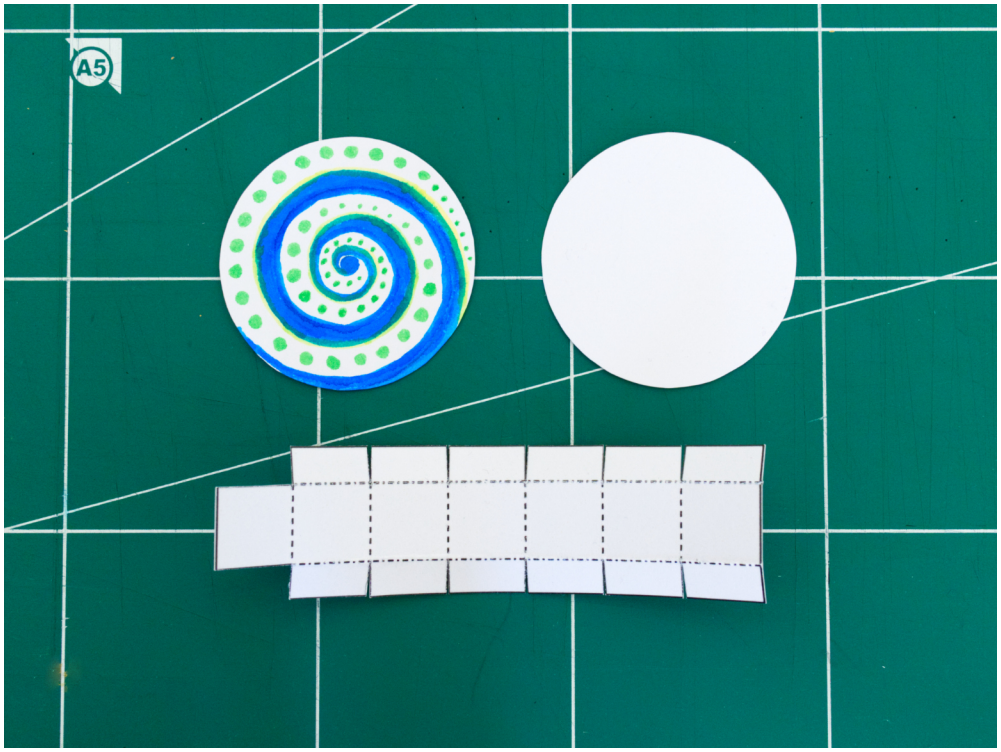


6 Fold the frame and use the tab to glue or tape it together. The cutout should be positioned just above the servo axle.

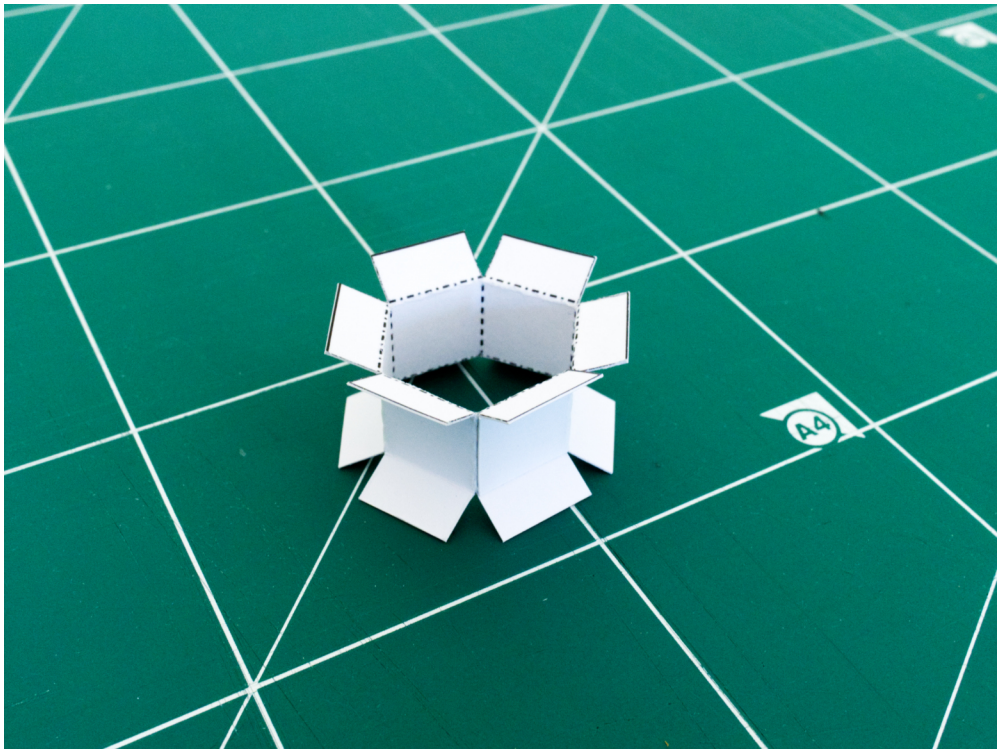




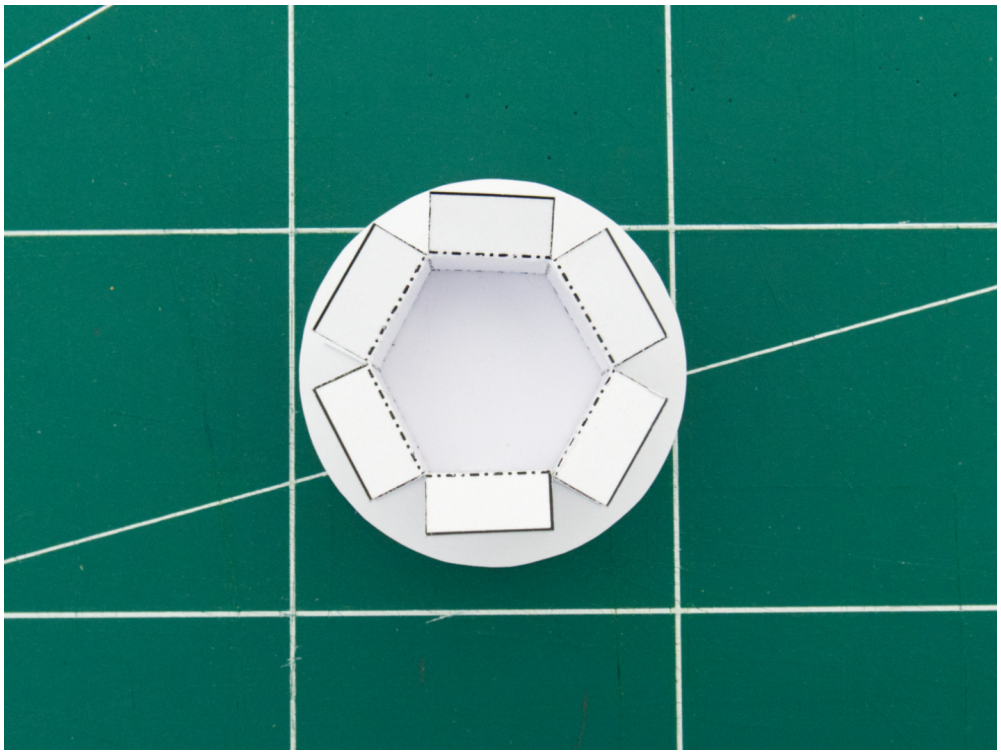
7 Next, we'll assemble the drum (the part that spins).



8 Fold and glue (or tape) the drum center so it forms a hexagon shape.

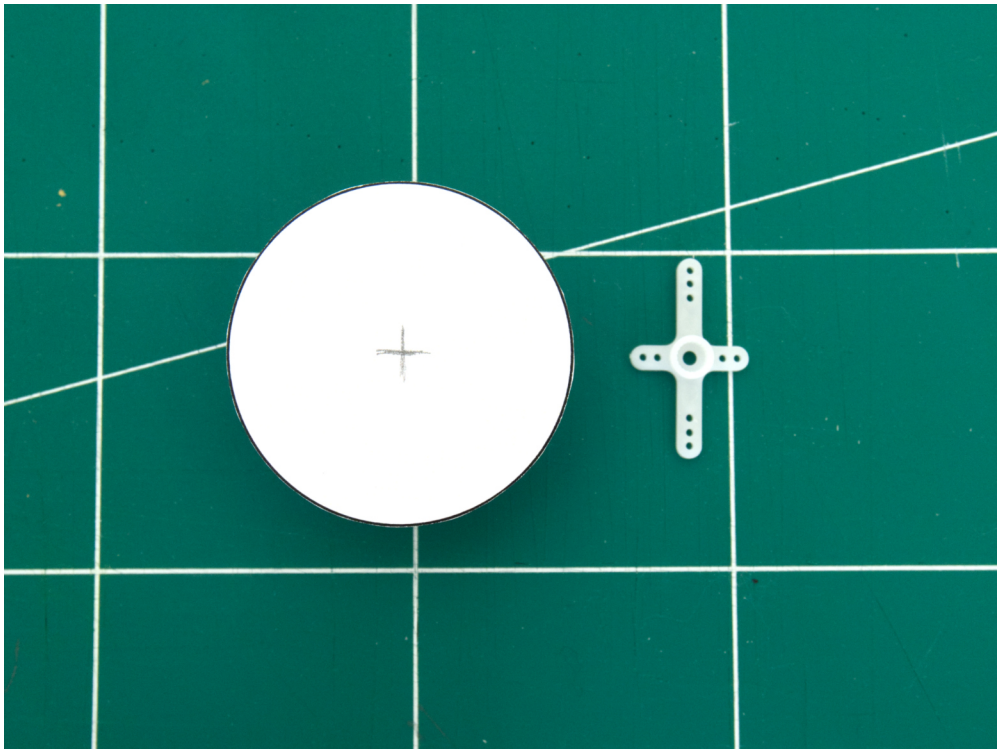


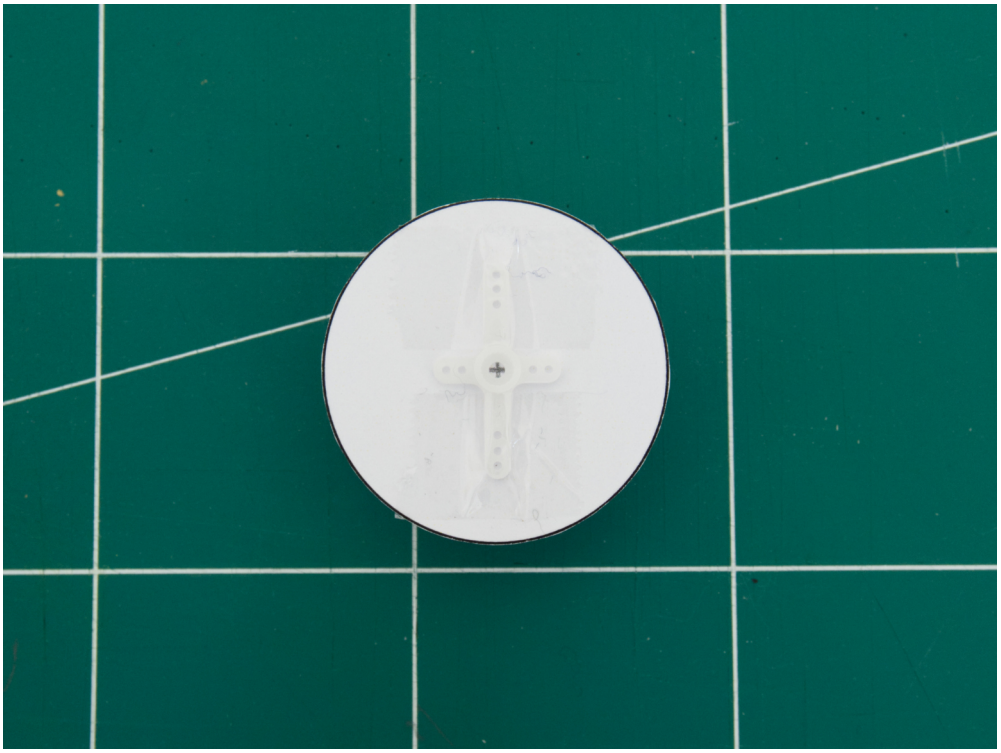
9 Glue or tape the drum center to the drum side with the hexagonal marking, using the marking to help position it.



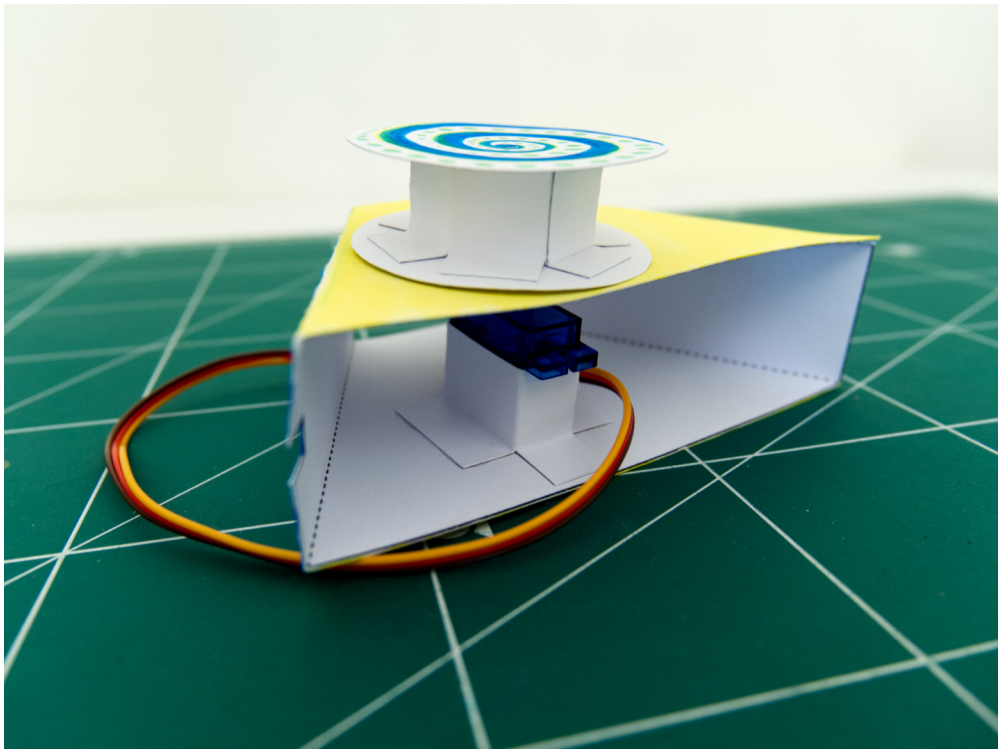
10 Glue or tape the other drum side to the drum center to form the full drum. Make sure the side with the + center mark is facing outwards.

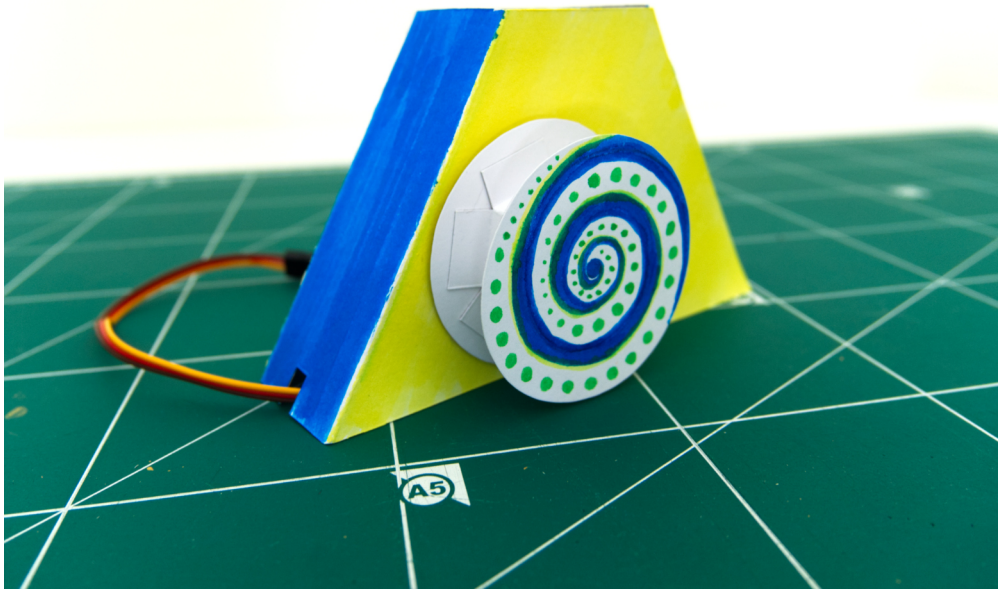
11 Use the center mark on the drum side to position and tape one of the servo horns to it. It doesn't matter which servo horn you use, but the cross shape it easy to tape because of the long arms.



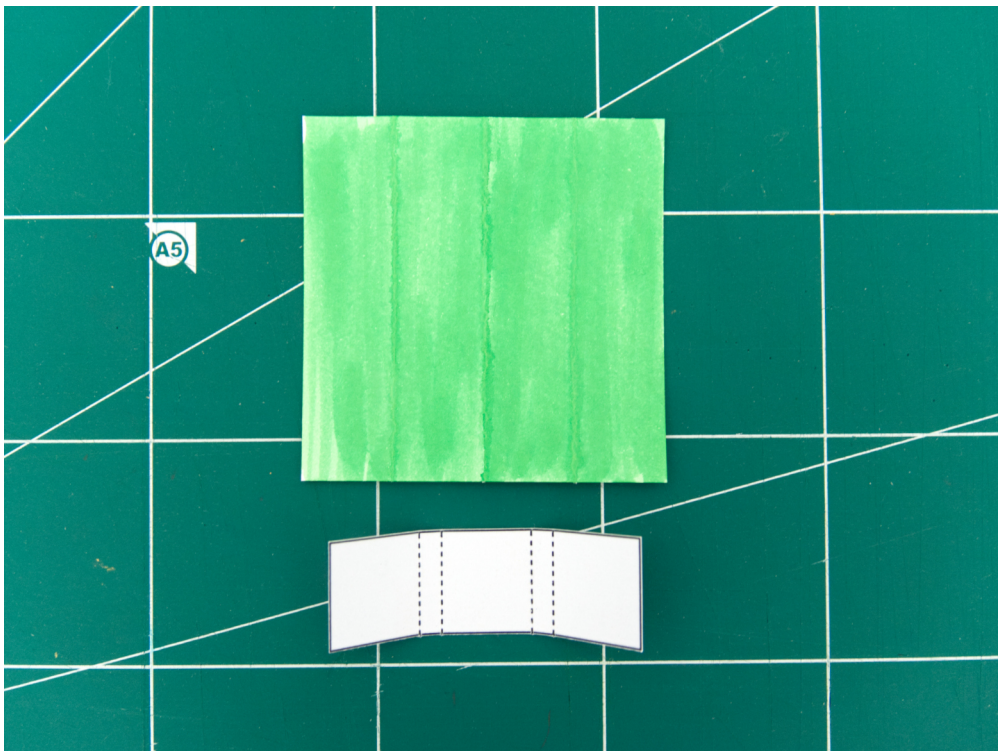


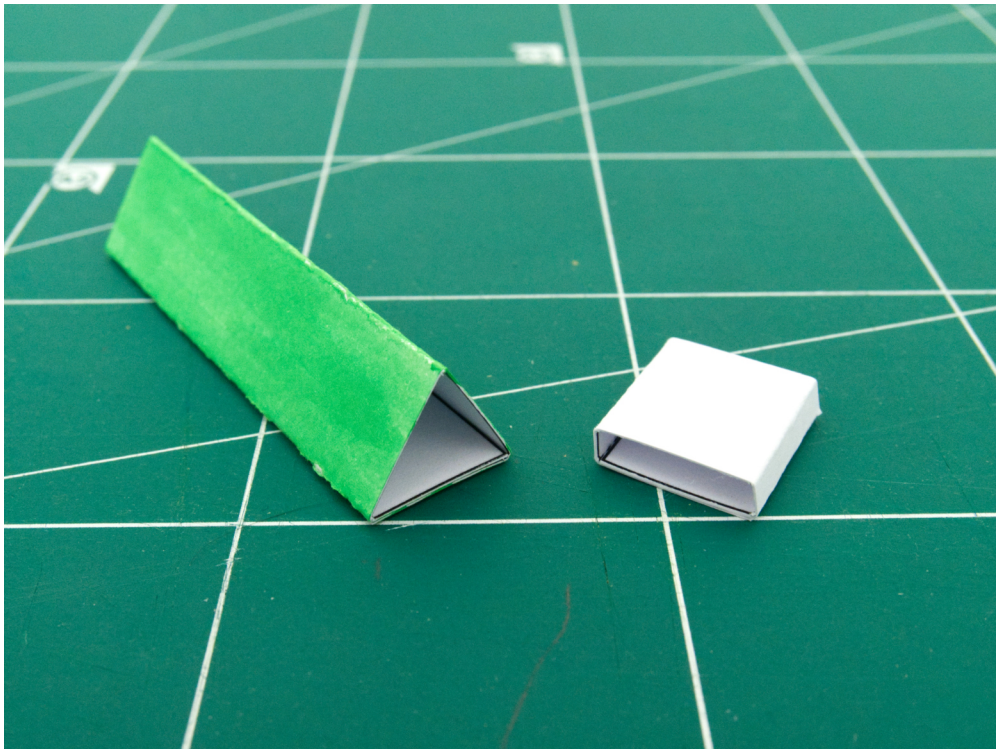
12 Attach the drum to the servo by pressing the servo horn onto the servo axle (you may need to push the servo from inside the frame).



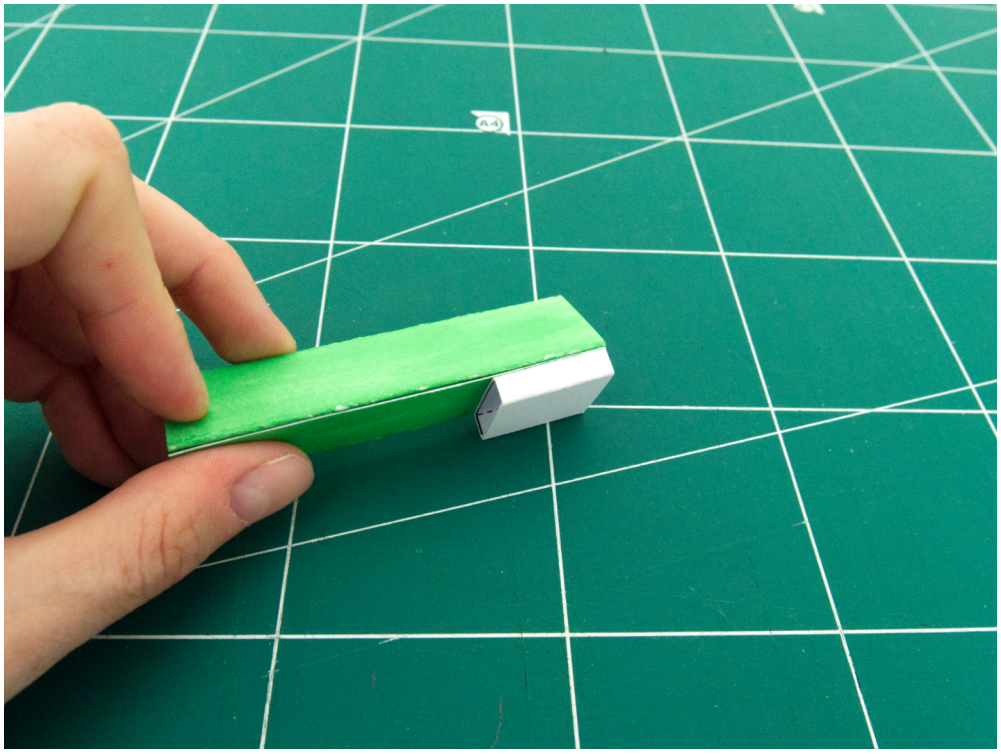


13 Let's move onto the boom and the boom spacer. Fold and glue (or tape) them into shape.

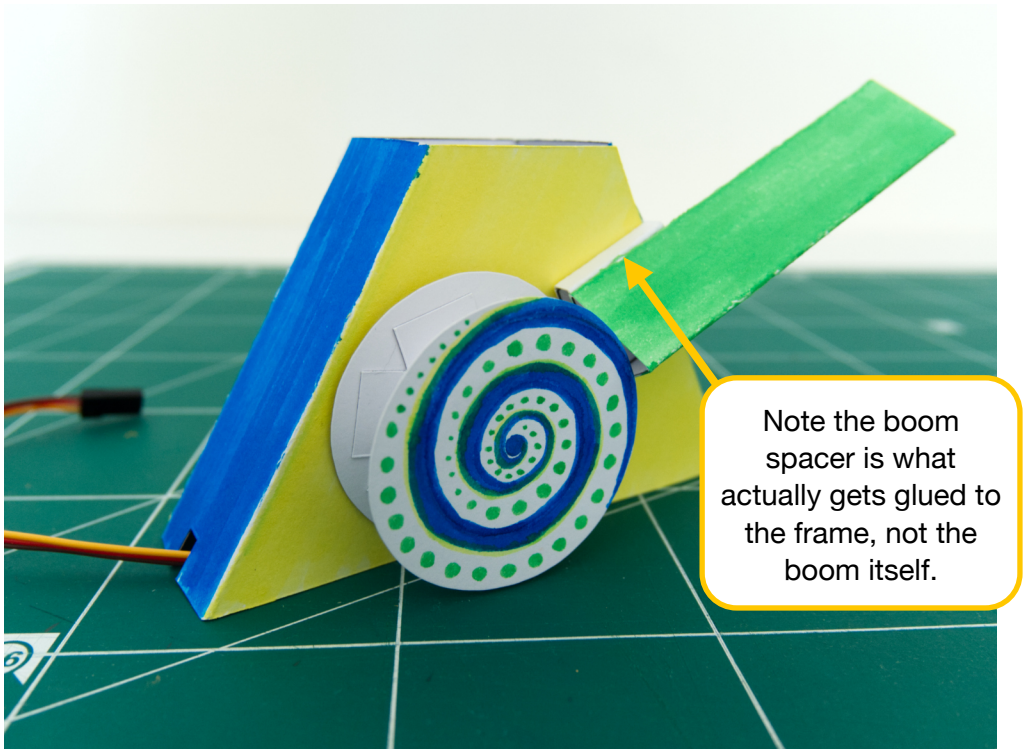


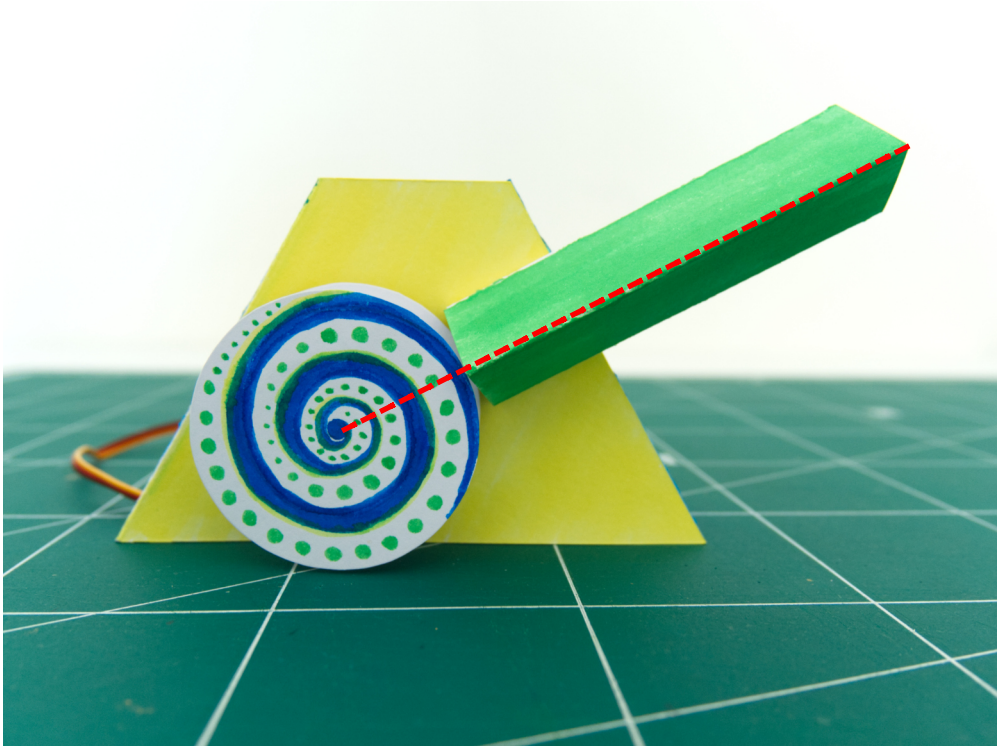


14 Glue or tape the boom spacer to the end of the boom.

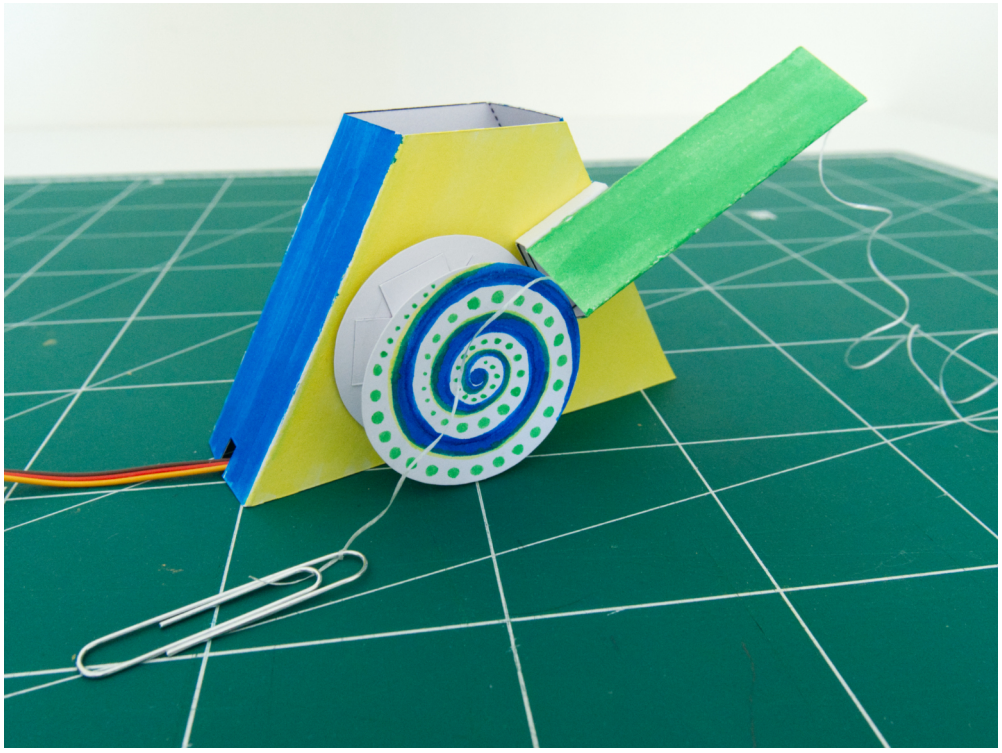


15 Glue or tape the boom with the boom spacer to the frame so it's more or less centered with the drum (see the red dotted line in the second picture).

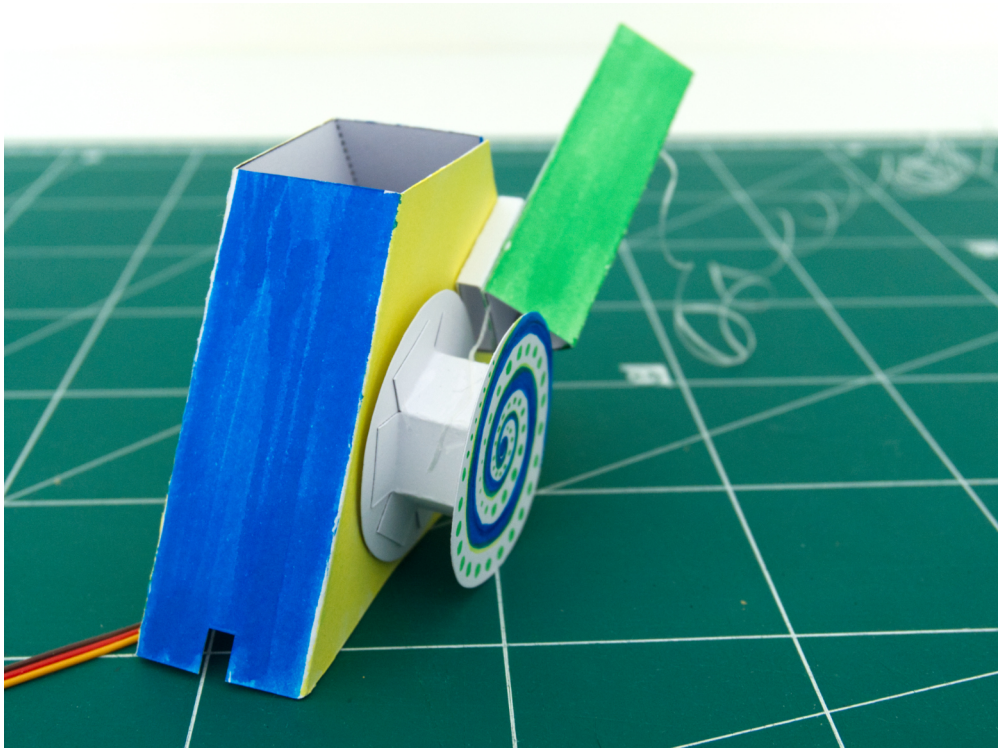




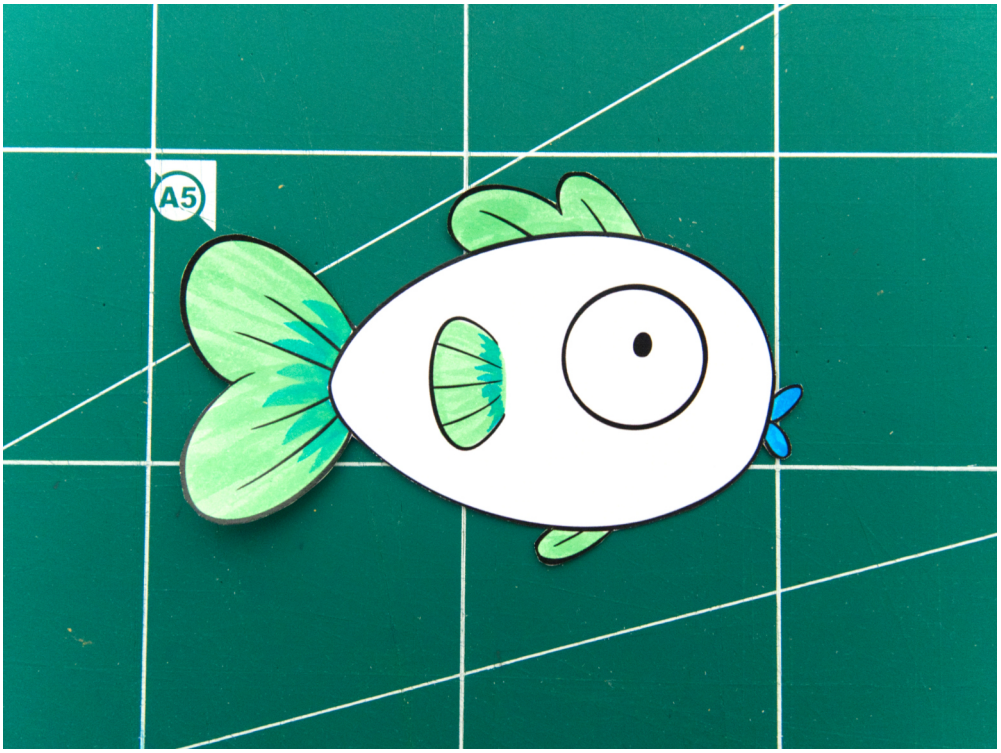
16 Cut a piece of string (I used dental floss) around 50-70 cm long and pull it through the boom. If you have trouble getting it through, you can tie a paperclip to one end and use it to guide the string.



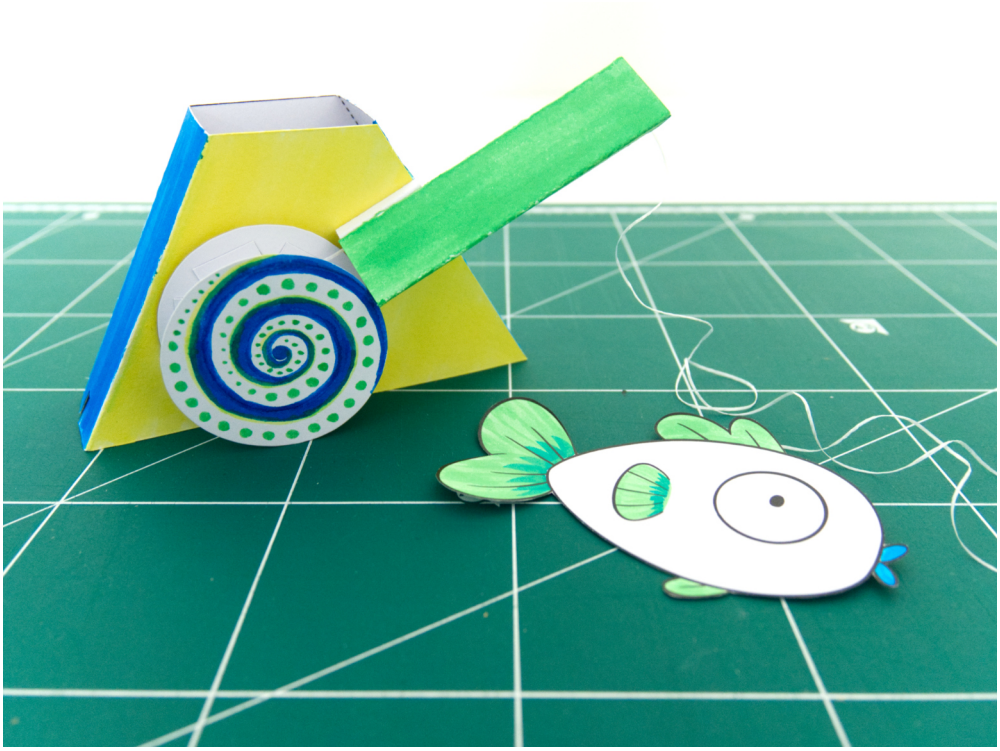
17 Remove the paperclip and tape the end of the string to the drum side.



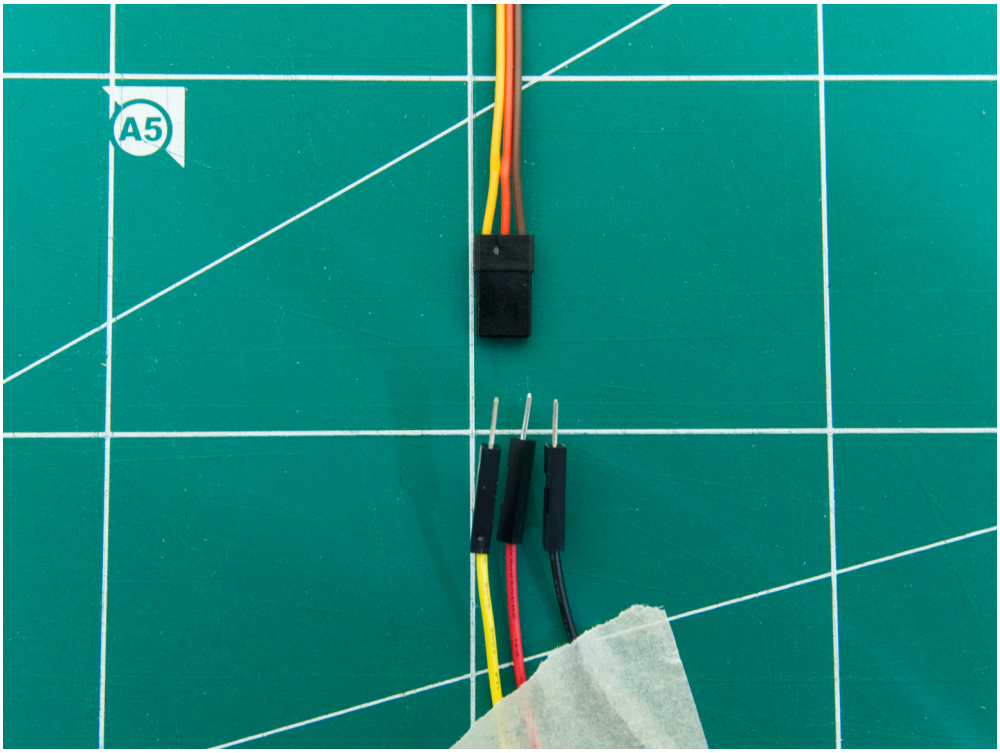
18 It's time to make something for the Lifty Crane to actually lift! You can use whatever you want so long as it's not too heavy—paper clips, pom-poms, or any of the pictures from the template. I used the fish.

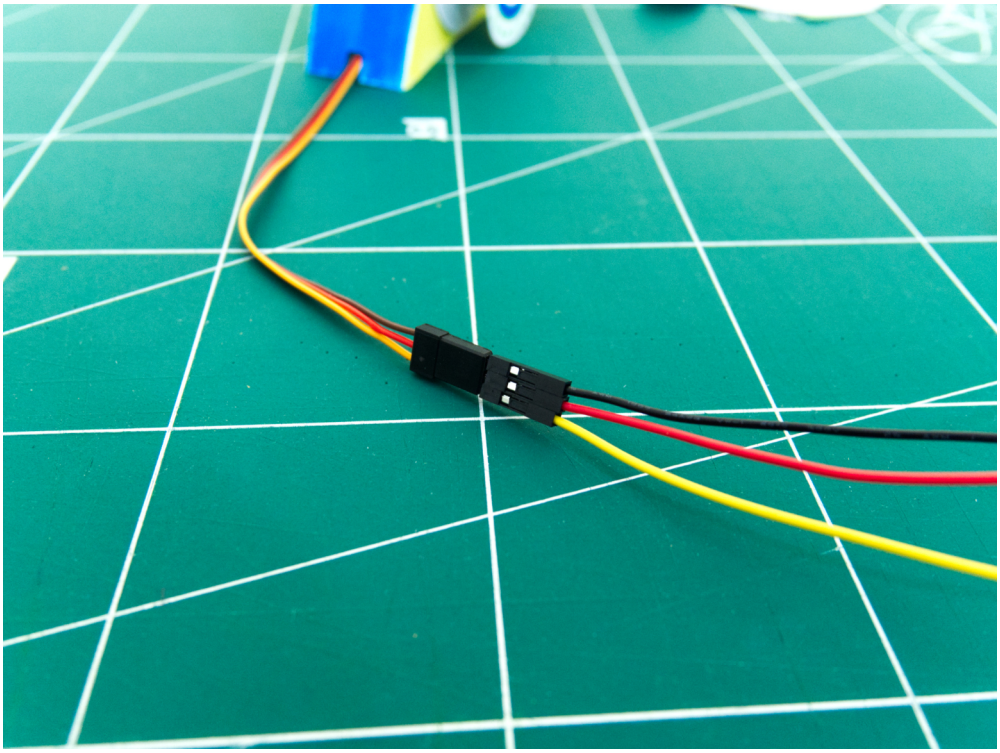


19 Tape or tie whatever you're lifting to the other end of the string.



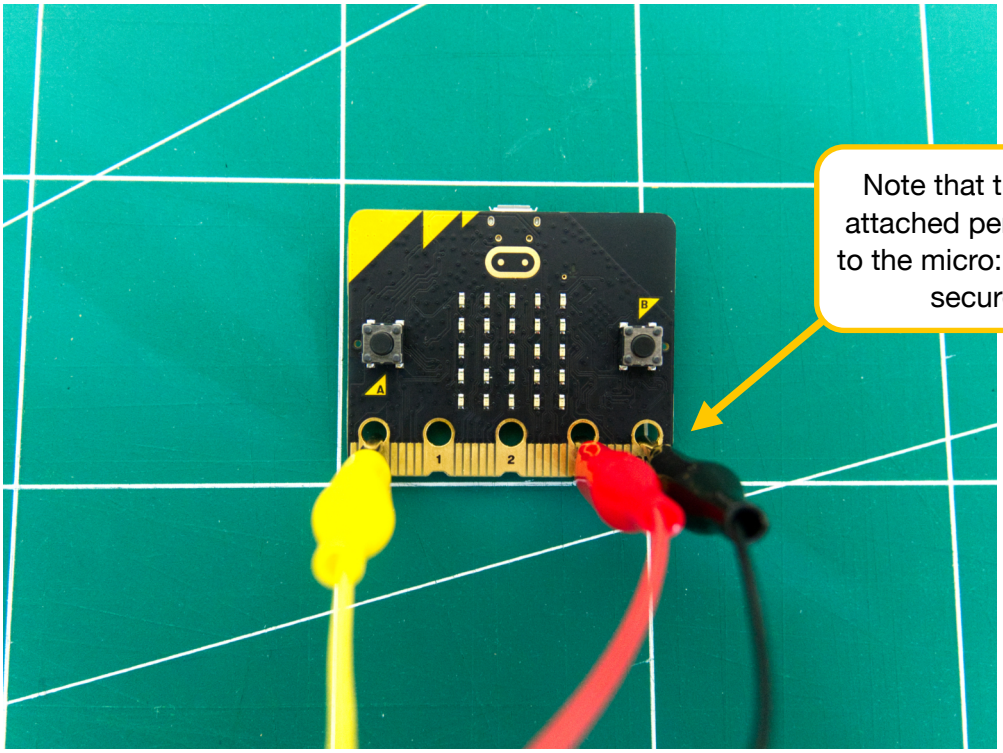
20 Almost done! Now it's time to connect the electronics and program the Lifty Crane. Connect 3 of the the crocodile to male jumper pin cables to the servo header. You can use any color of crocodile cables, but if you match the color of the servo wires to the crocodile cables, it will make it much easier to keep track of the connections.

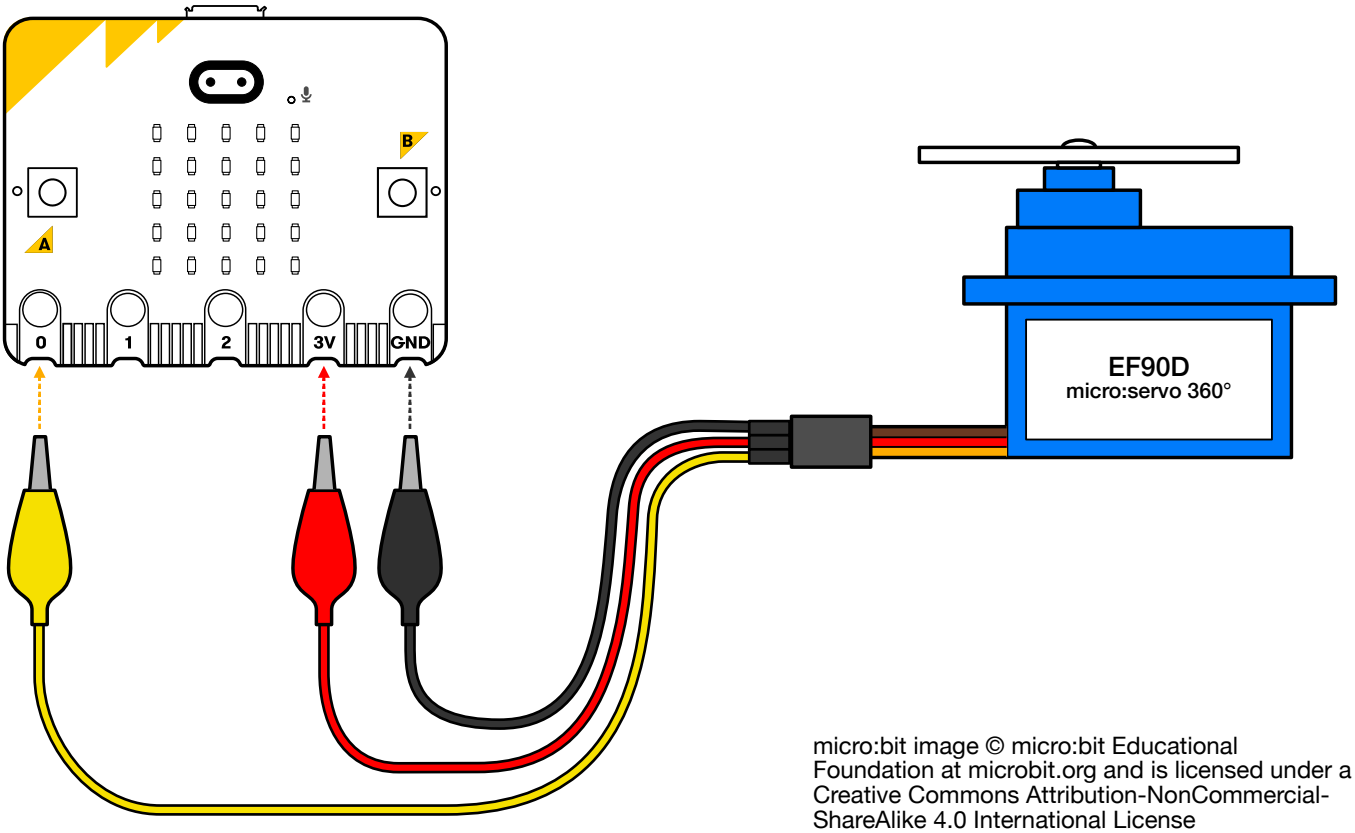




21 Connect the crocodile clips to the micro:bit. Make sure that they are connected as follows:

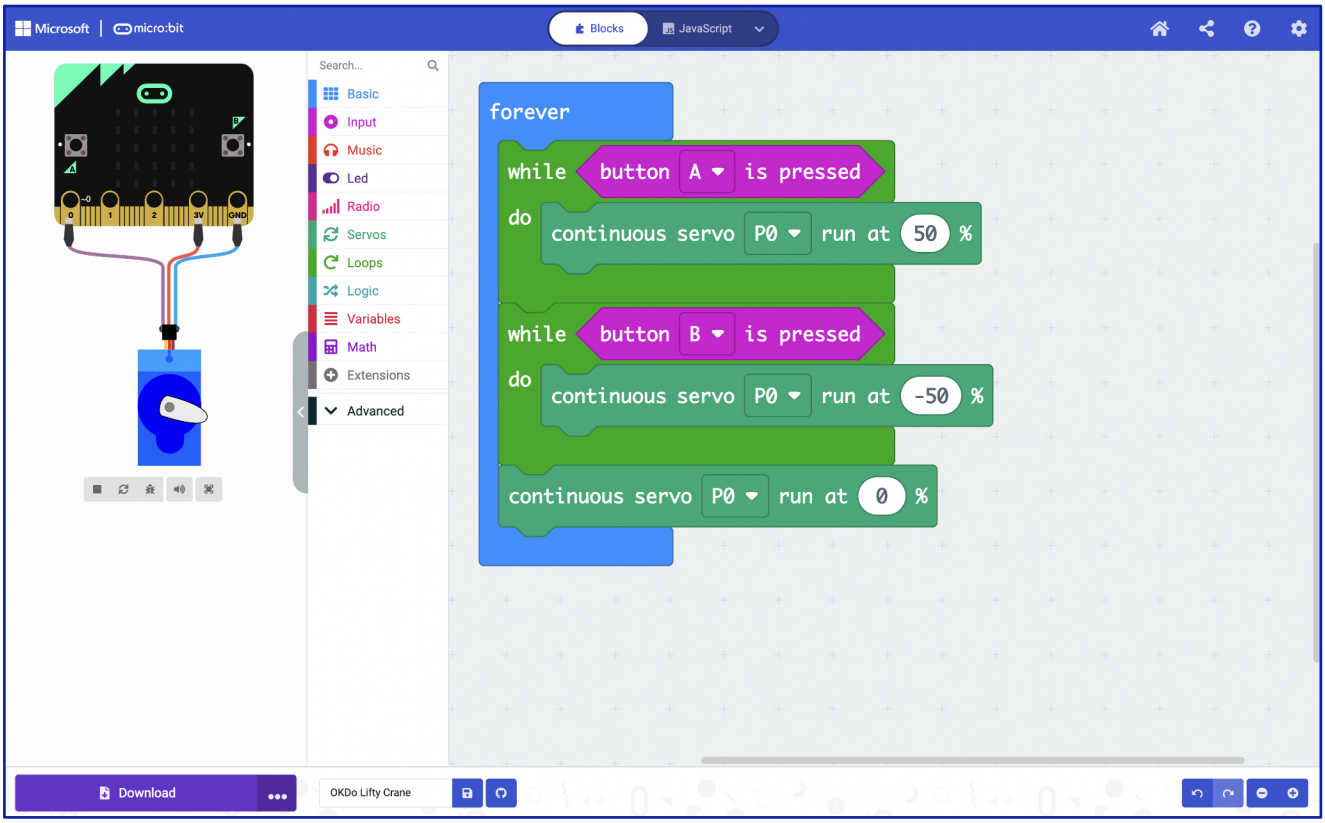
- Crocodile clip connected to the YELLOW servo wire → micro:bit Pin 0
- Crocodile clip connected to the RED servo wire → micro:bit 3V
- Crocodile clip connected to the BROWN servo wire → micro:bit GND





22 Connect the micro:bit to your computer using the micro USB cord. The cord will be used both to transfer the code and to supply power to the micro:bit and the servo.

23 Get the code from here:
https://makecode.microbit.org/#pub:_34Xe7VJ4zL3p



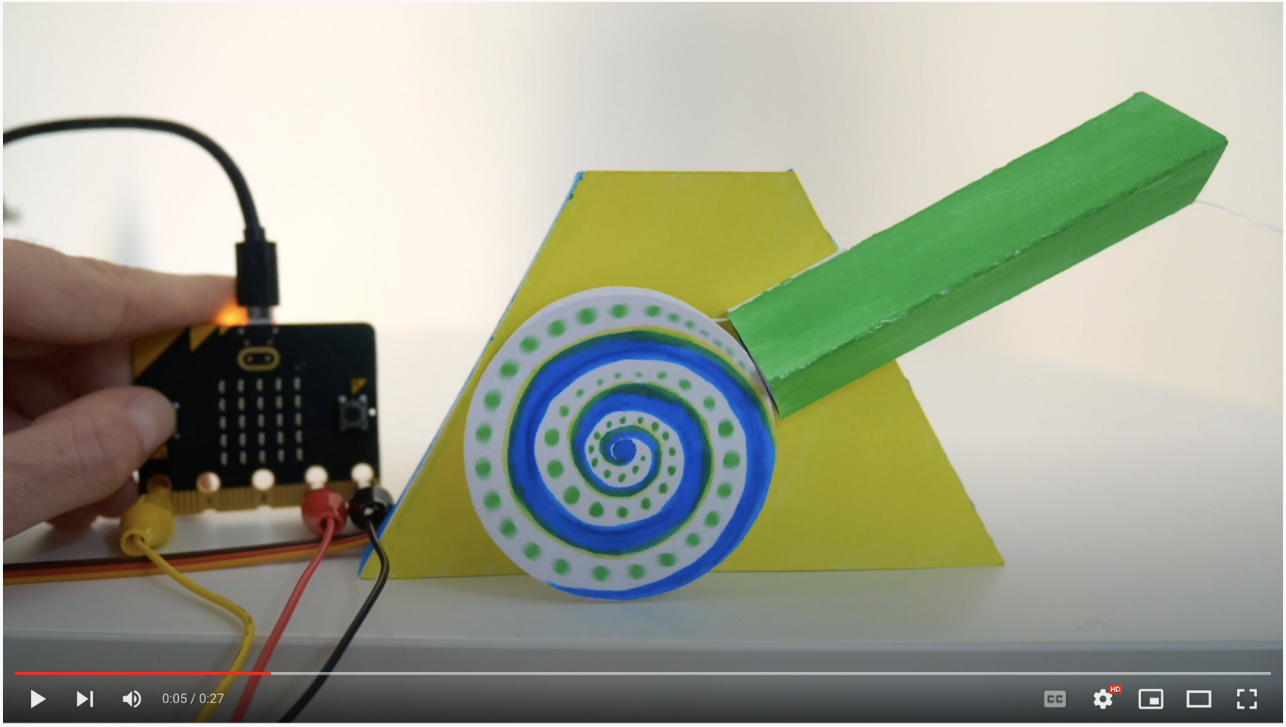
24 Upload the code to the micro:bit using the following instructions (choose in the instructions what type of computer and browser you're using for more specific directions):

https://microbit.org/get-started/first-steps/set-up/

or

https://makecode.microbit.org/device/usb

25 Test it out! Press the A button to spin the drum one way and the B button to spin the other. Here's a video of it in action:
https://youtu.be/ocuZRu472Mw



26 Experiment! Can you change the MakeCode to make the servo run faster? Slower? What about using different inputs besides the A and B button? How much weight can you lift with the Lifty Crane before it stops working?

Spinny Box

Make a box that that spins an object when you shake it!

Tools & Materials

Included in kit:

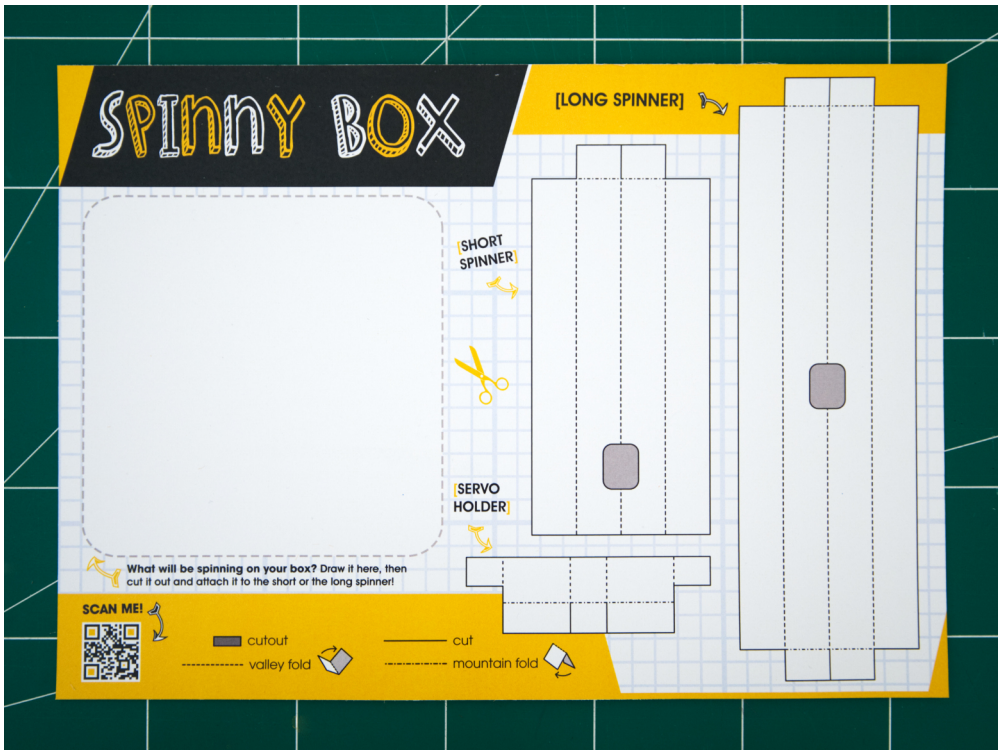
- Spinny Box Templates
  If you need to print new templates, you can download them here:
  https://www.okdo.com/p/okdo-microbit-build-a-paper-robot-kit/
- Continuous Rotation Micro Servo (EF90D, micro:servo 360°)
- 3x Crocodile to Male Jumper Pin Cables
- micro:bit v2 Board
- Micro USB Cable

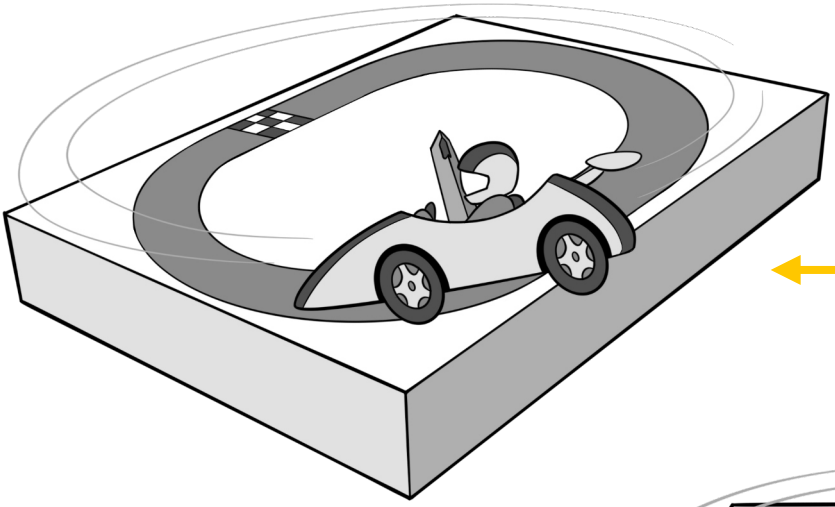
Not included in kit:

- Computer
- Scissors or Craft Knife
- Glue
- Tape

1 Start by cutting the pieces out of first page of the template. Don't worry about the grey cutouts yet.

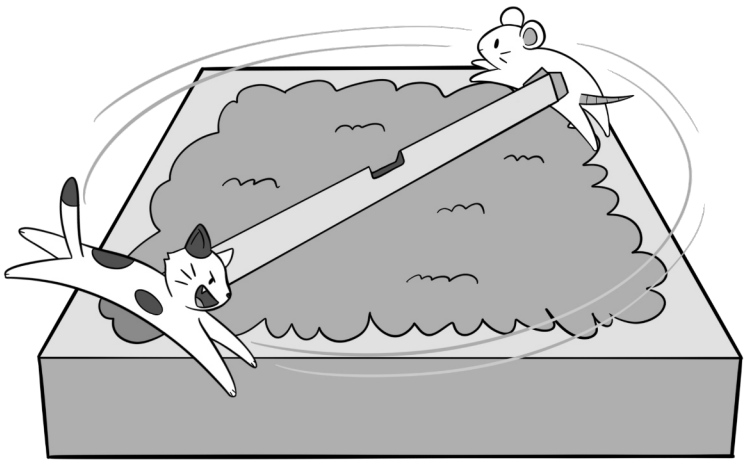
The template has options for a short and a long spinner. You can choose whichever you want, or even make your own spinner at whatever length you prefer.



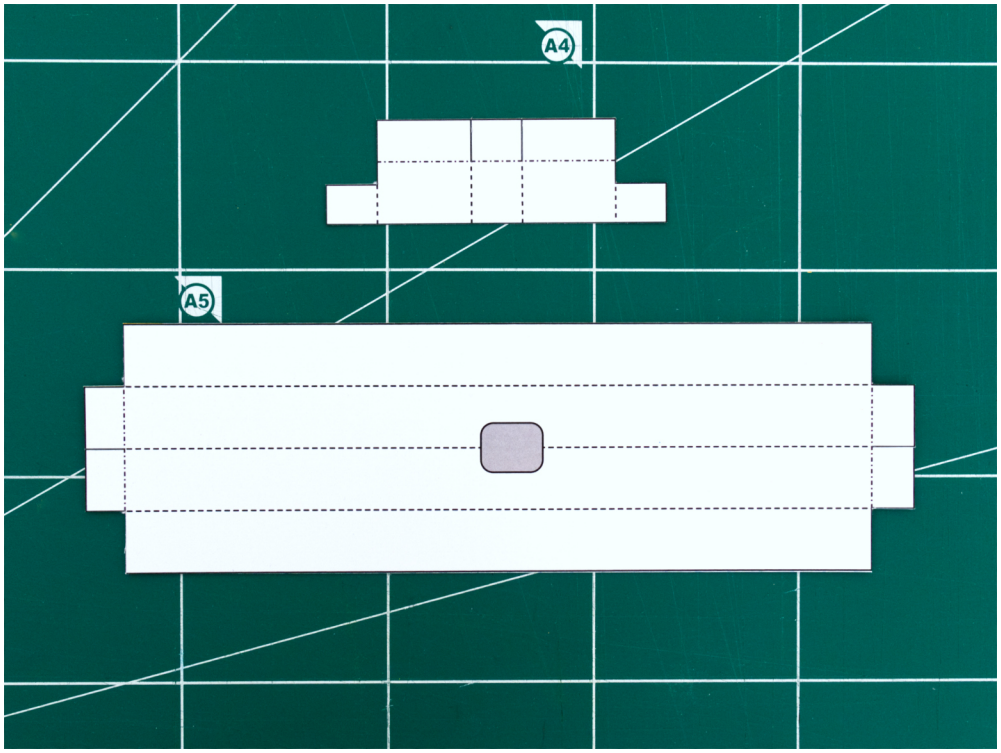


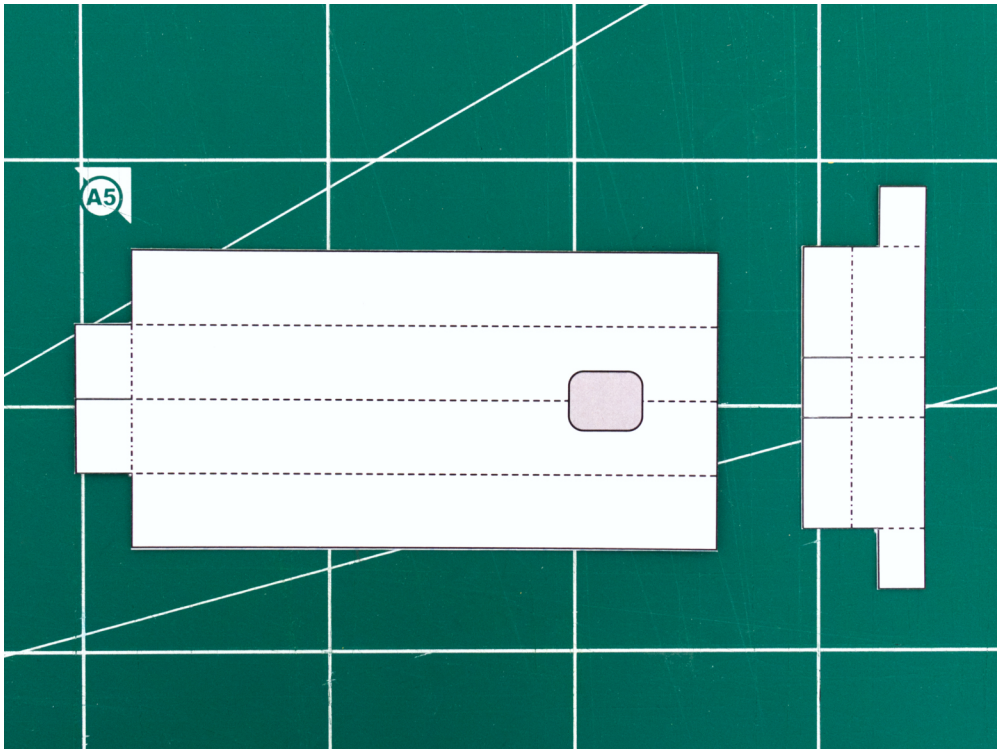
This example uses the short spinner to spin just one object around.

This example uses the long spinner to have two objects chasing each other as they spin around.

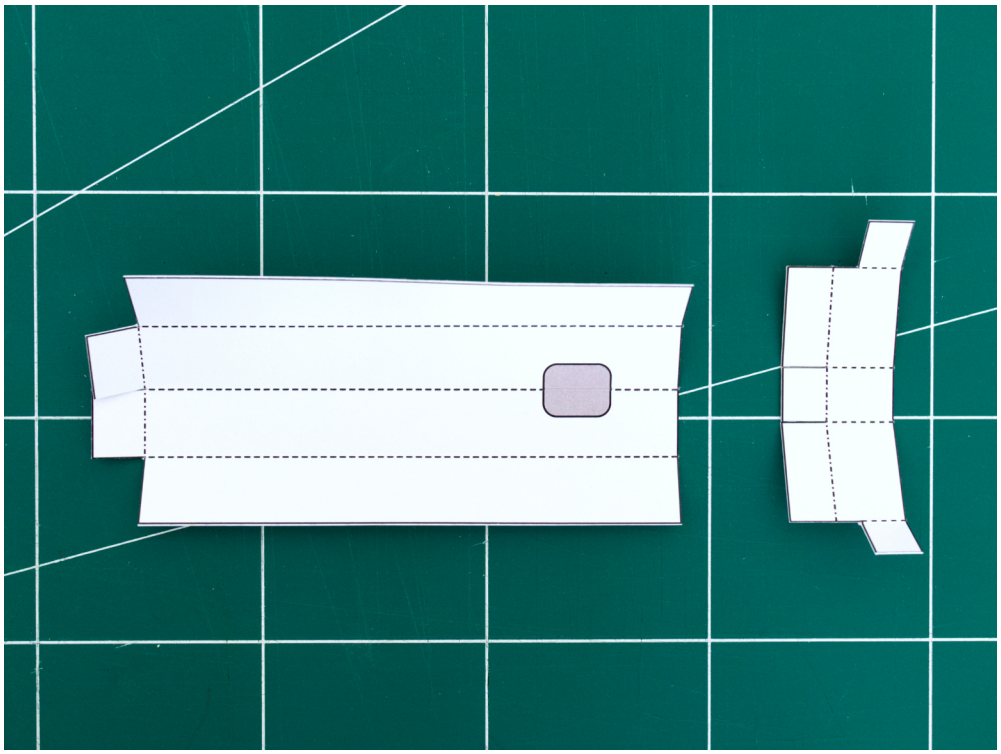


2 The top image shows the long spinner, and the bottom image shows the short spinner. For this tutorial, I'll use the short spinner.

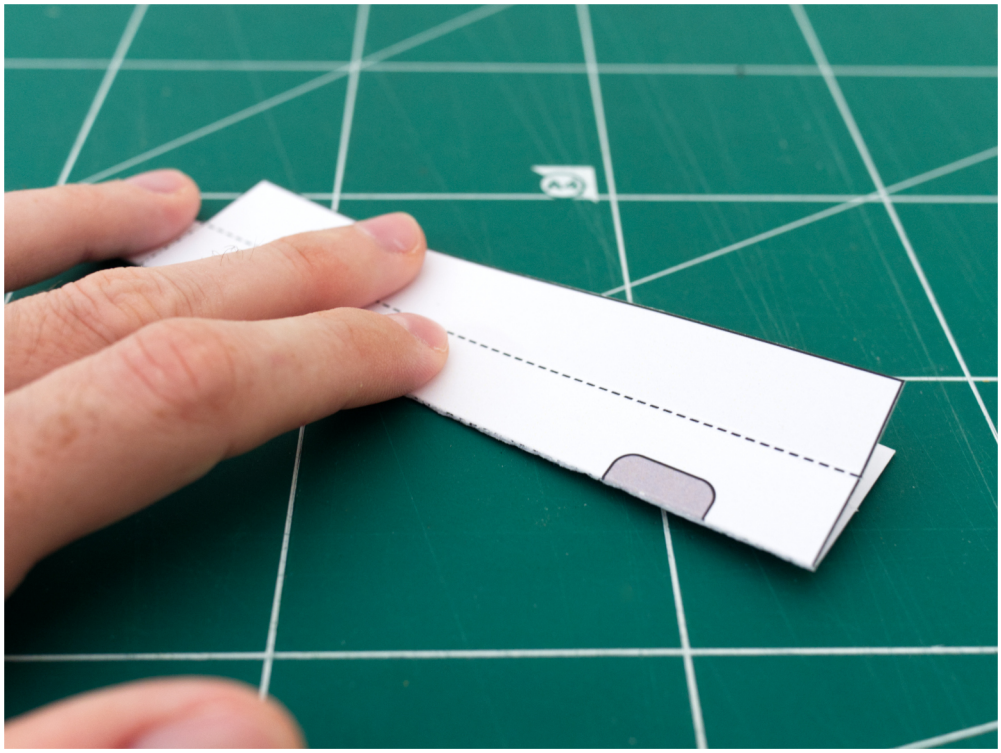




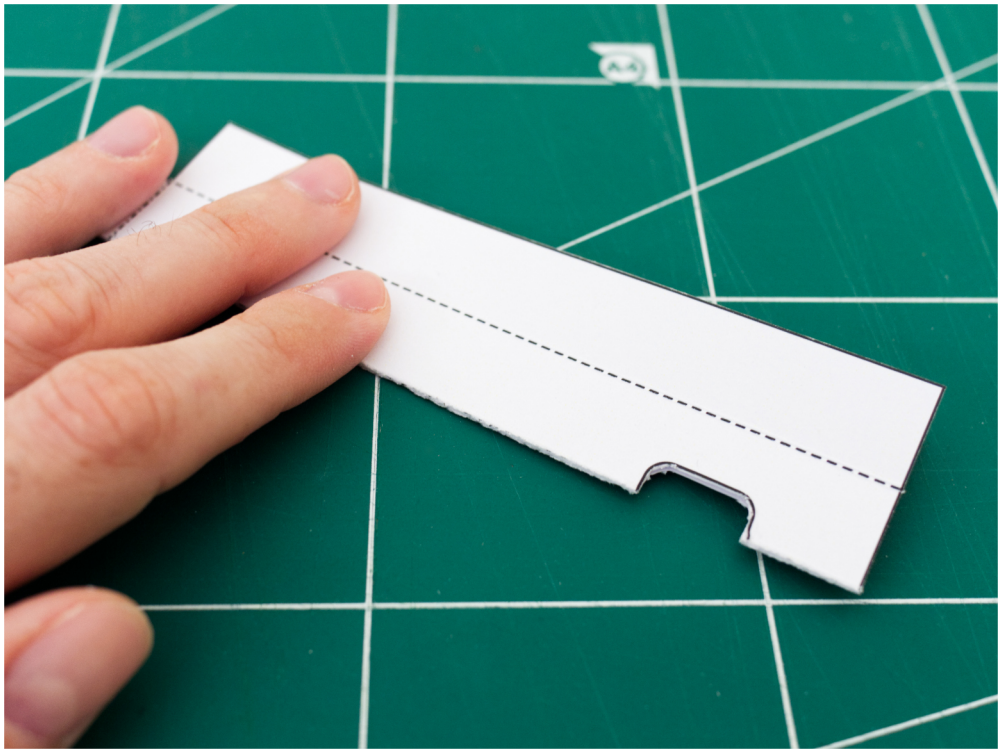
3 Pre-crease all the fold lines. This will make assembly easier later on.

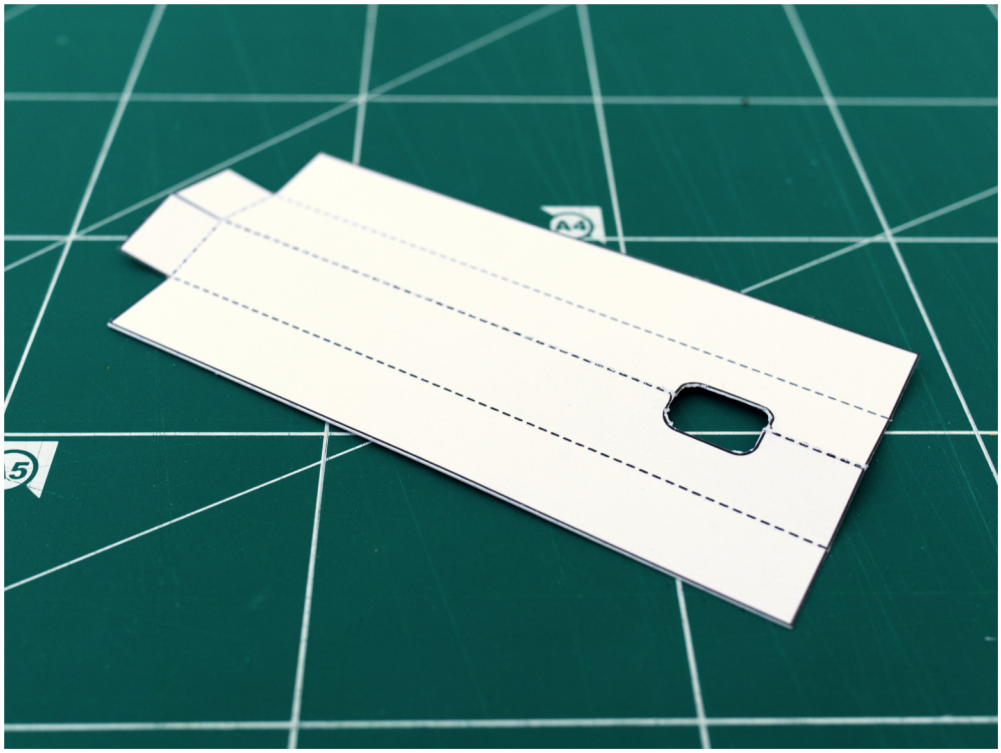


4 Fold the spinner in half with the printed crease lines facing outwards.



5 With the spinner folder in half, use scissors to cut the gray cutout.

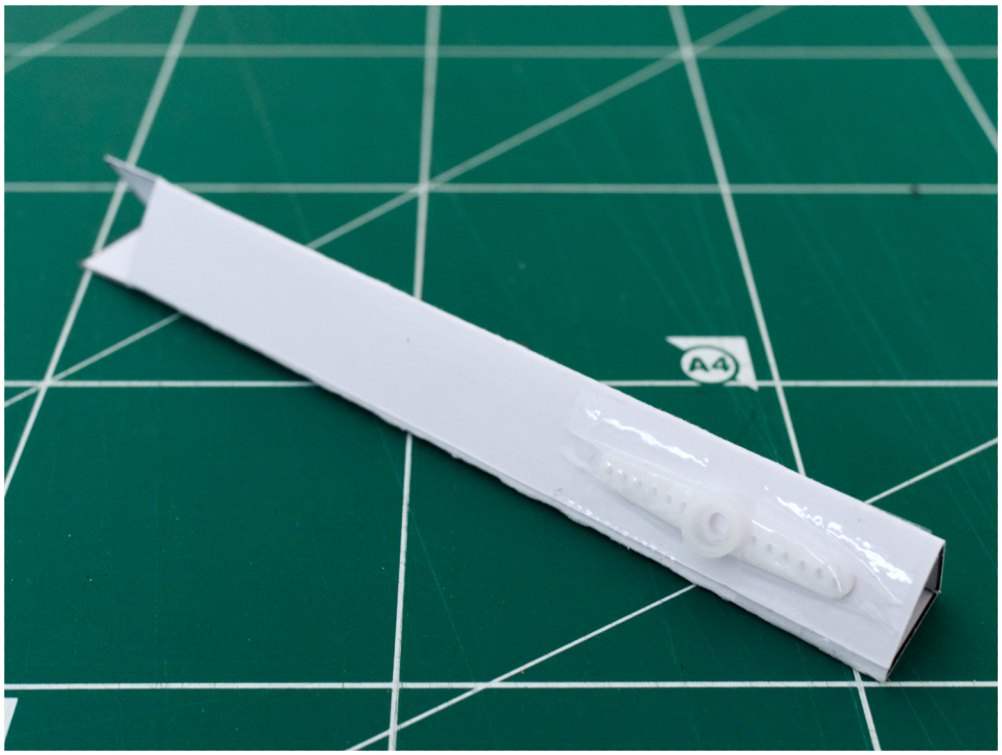


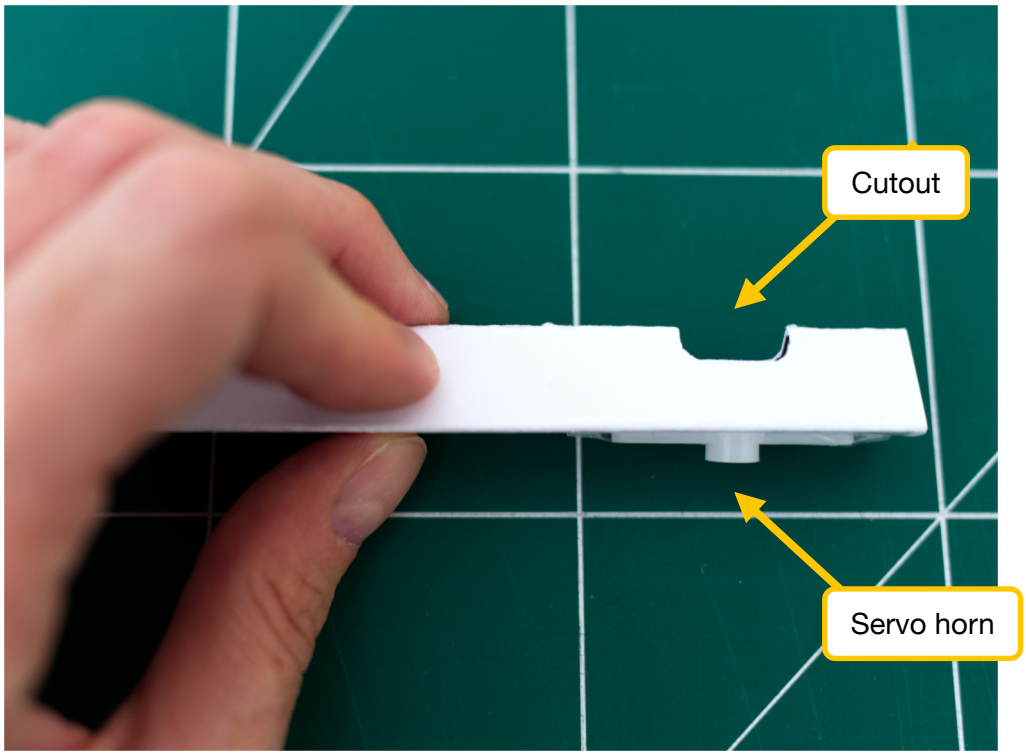


6 Fold and glue or tape the spinner into a triangle. I decided to hide the printed crease lines on the inside.

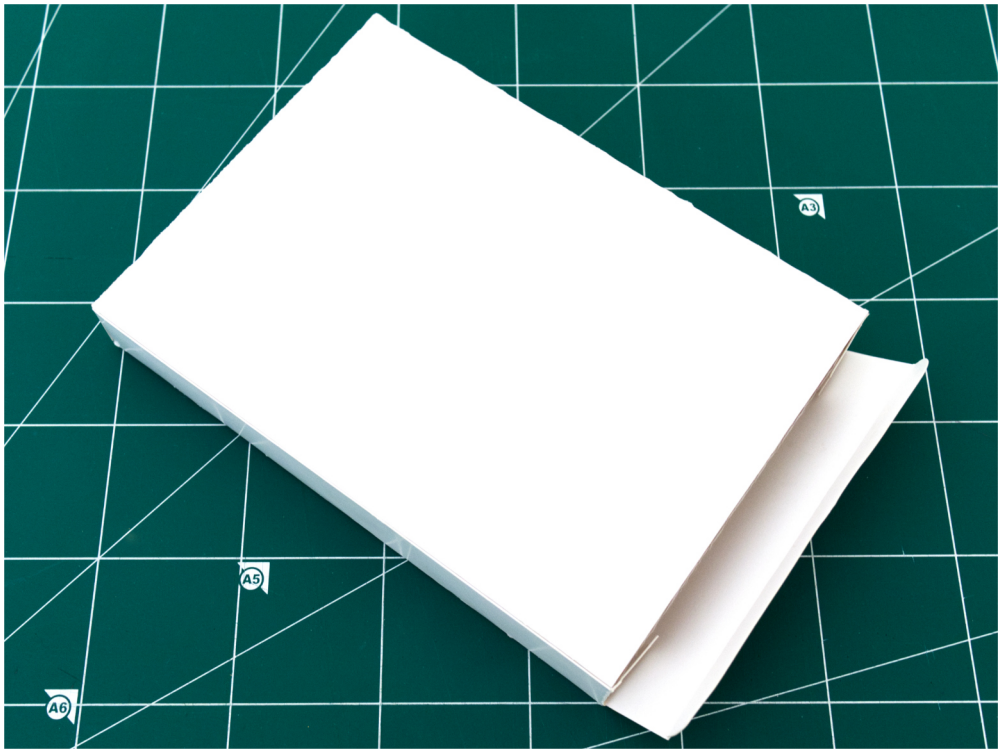
7 Find one of the servo horns like the one pictured below.

8 Tape the servo horn to the bottom of the spinner as shown. You'll want to position it so it sits below where the cutout is.

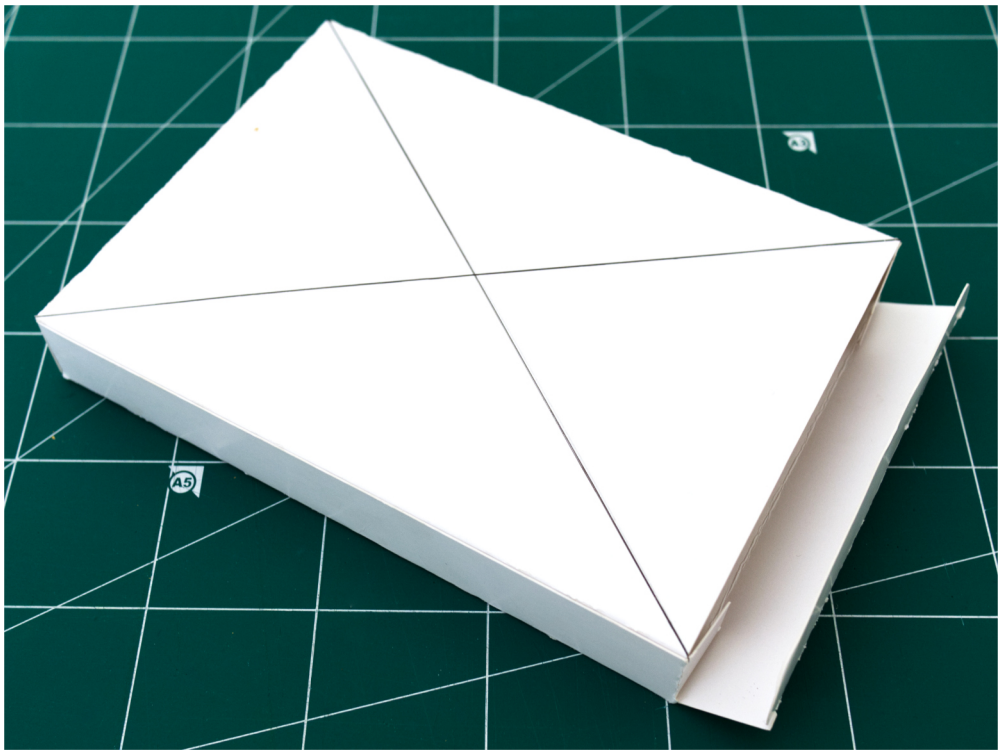




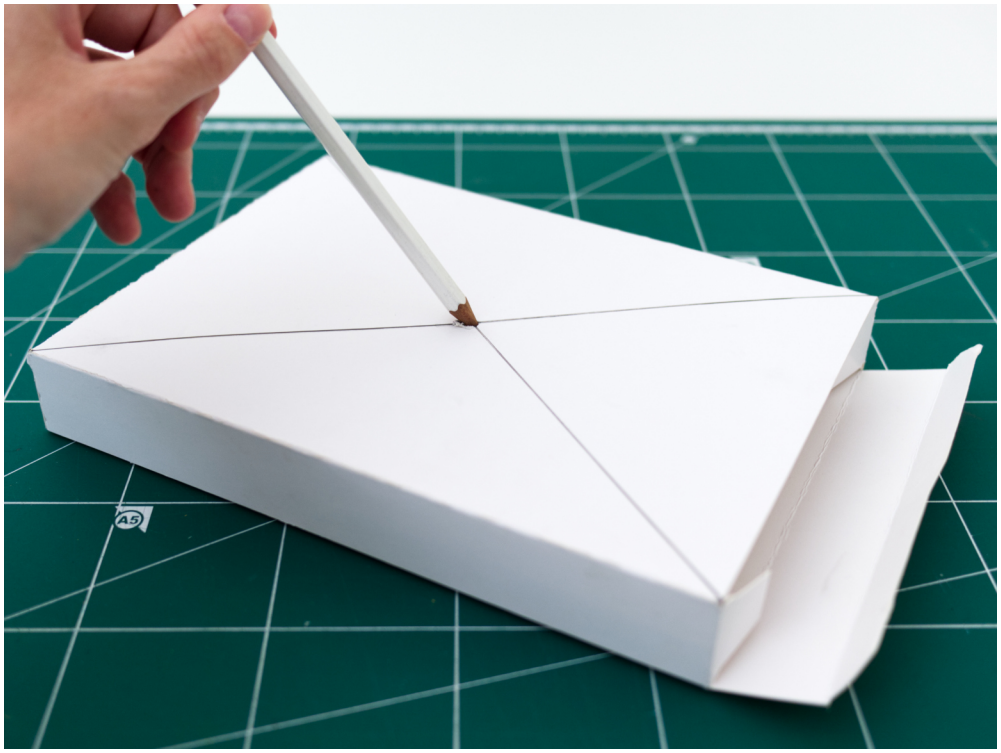
9 Let's move on to the box! You can use any box for this project, but I used the one that the Paper Robot kit came in. (This one is white so it's easier to see for the instructions).

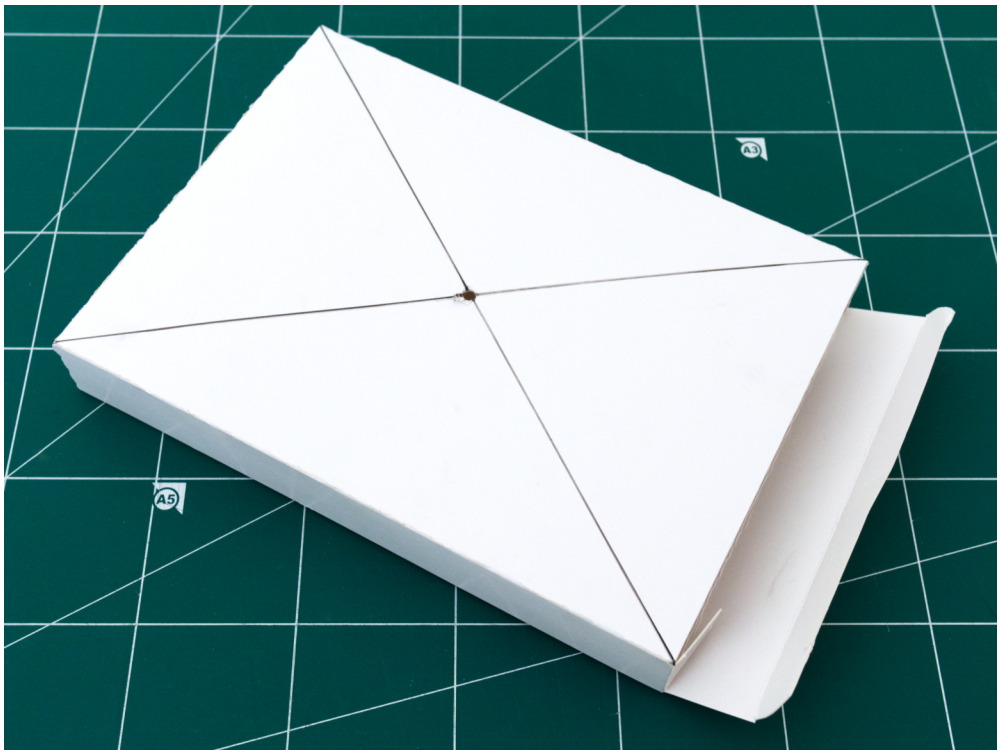


10 You can position the spinner anywhere on the box, but if you want to center it like I did, mark two diagonal lines on the box to find the center.



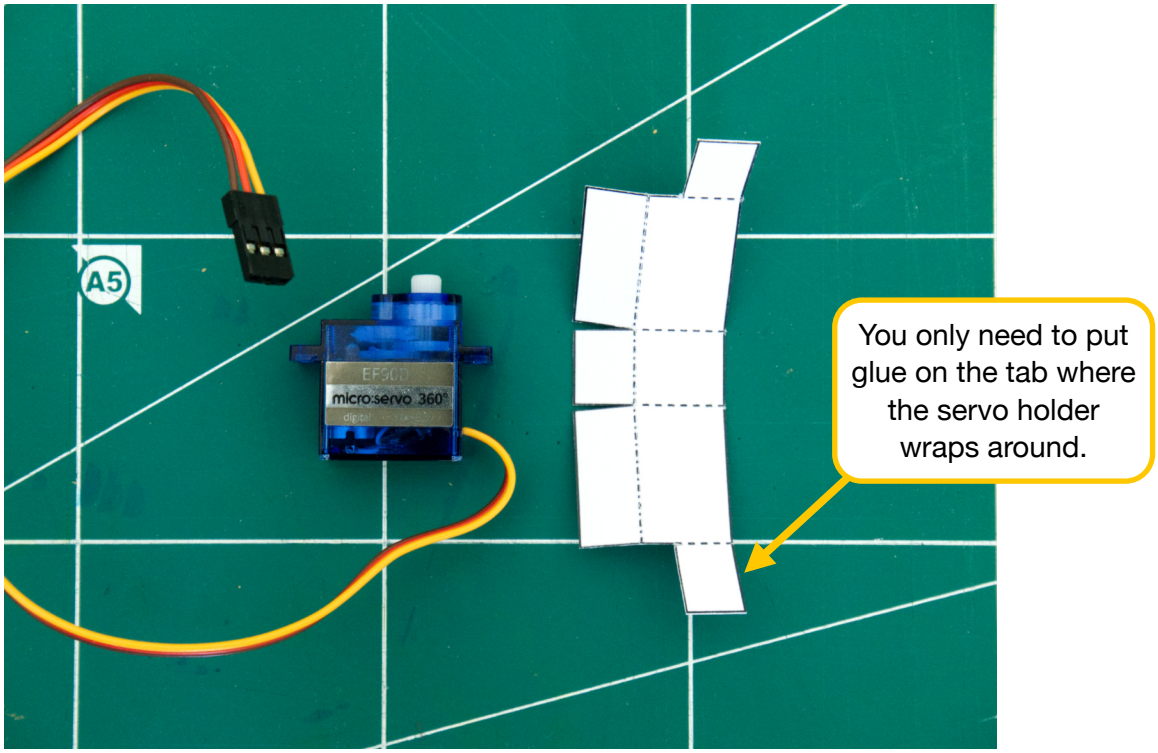
11 Use a sharp pencil to poke a hole in the box where the two diagonal lines cross (or wherever you want to position the spinner).

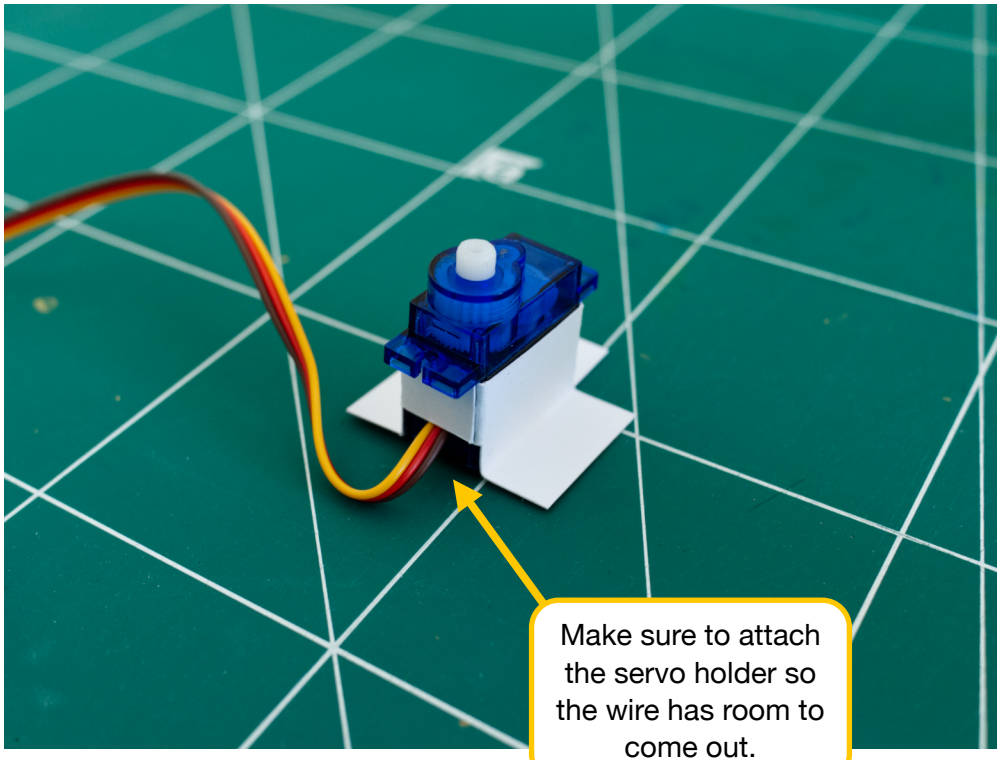




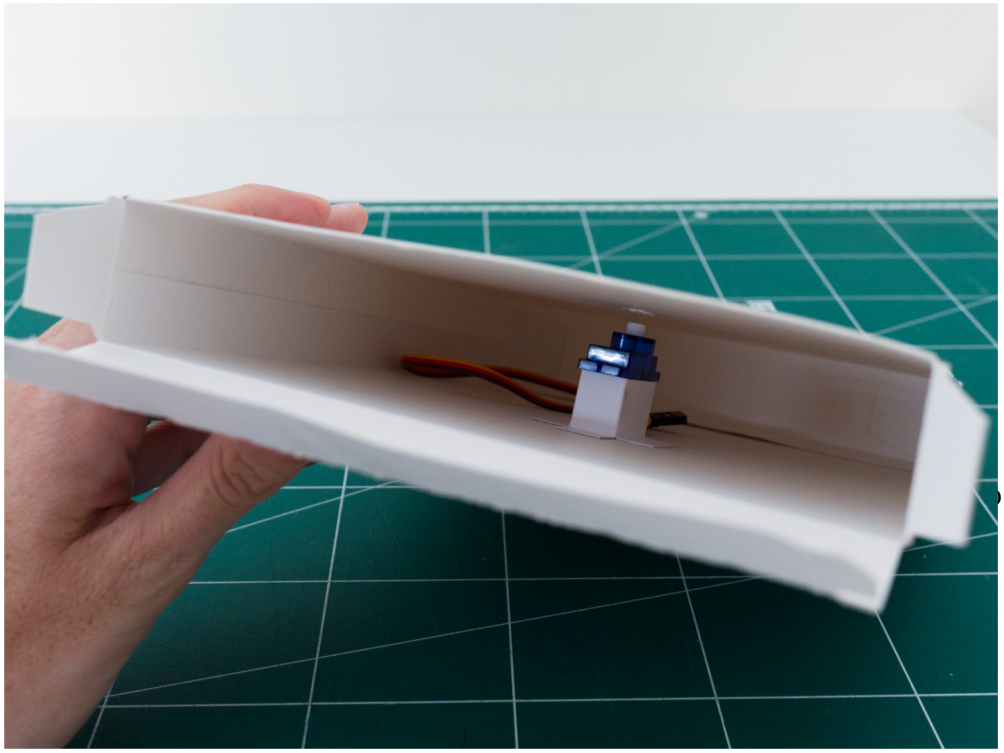
12 Glue or tape the servo holder around the servo. You don't need to put glue on the servo itself, just on the paper tabs that wrap around the servo body.

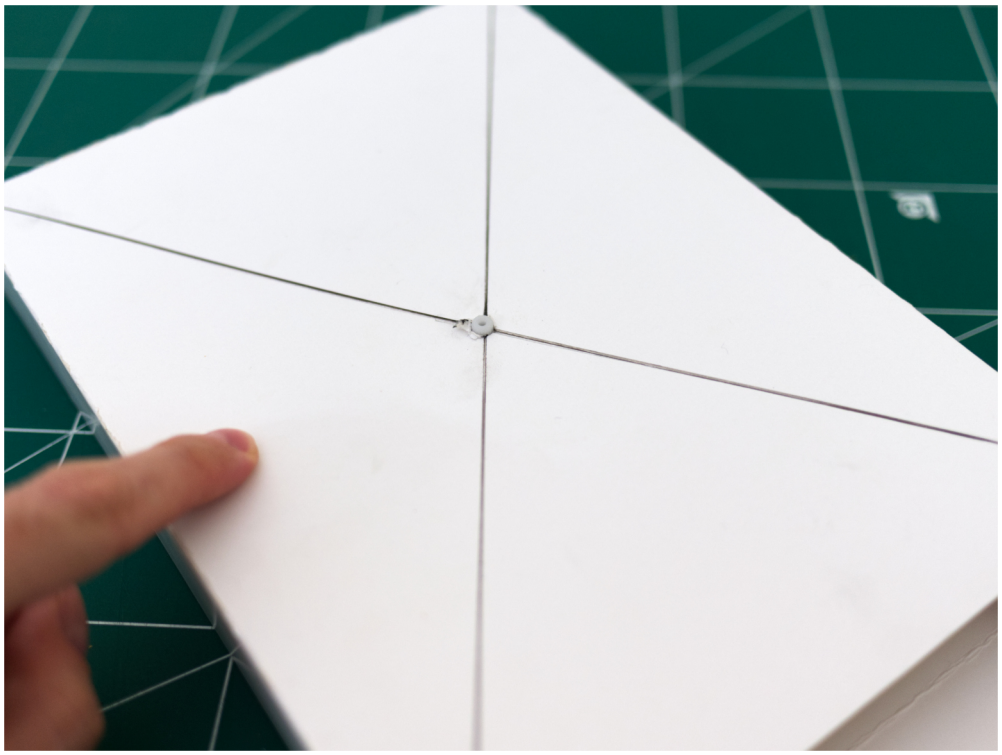
Note: For this project, make sure you're using the **continuous rotation 360° servo** (the one labeled EF90D).



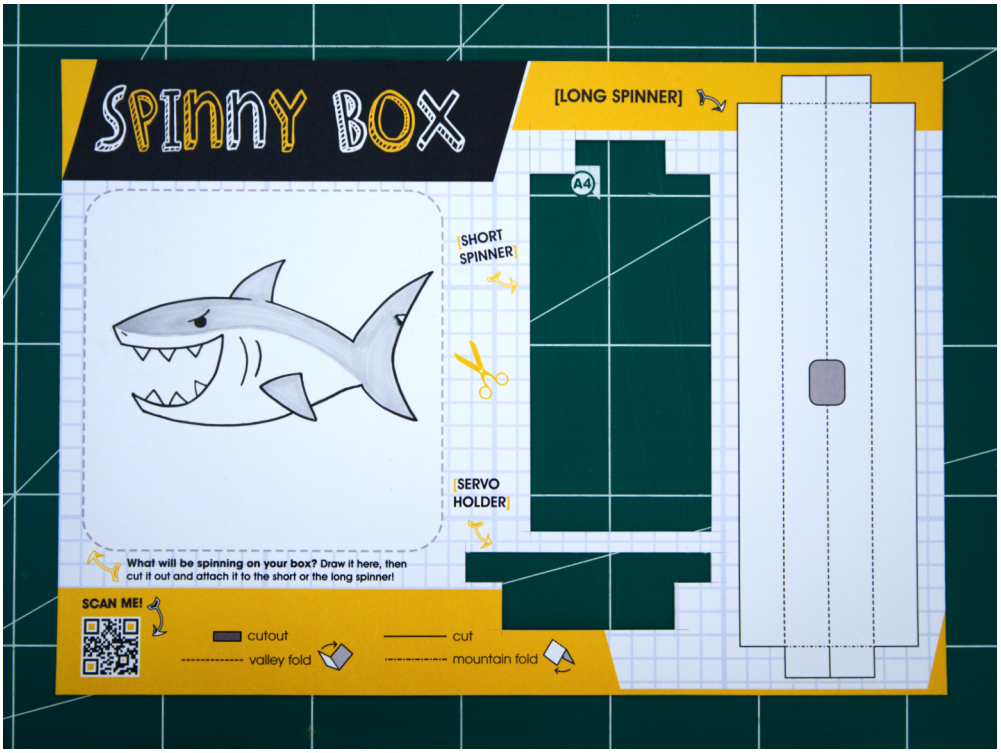


13 Glue or tape the servo to the inside the box so the axle sticks out the hole you made earlier. If you have trouble positioning the servo, you can always cut the box open along the side and then tape it shut again after.

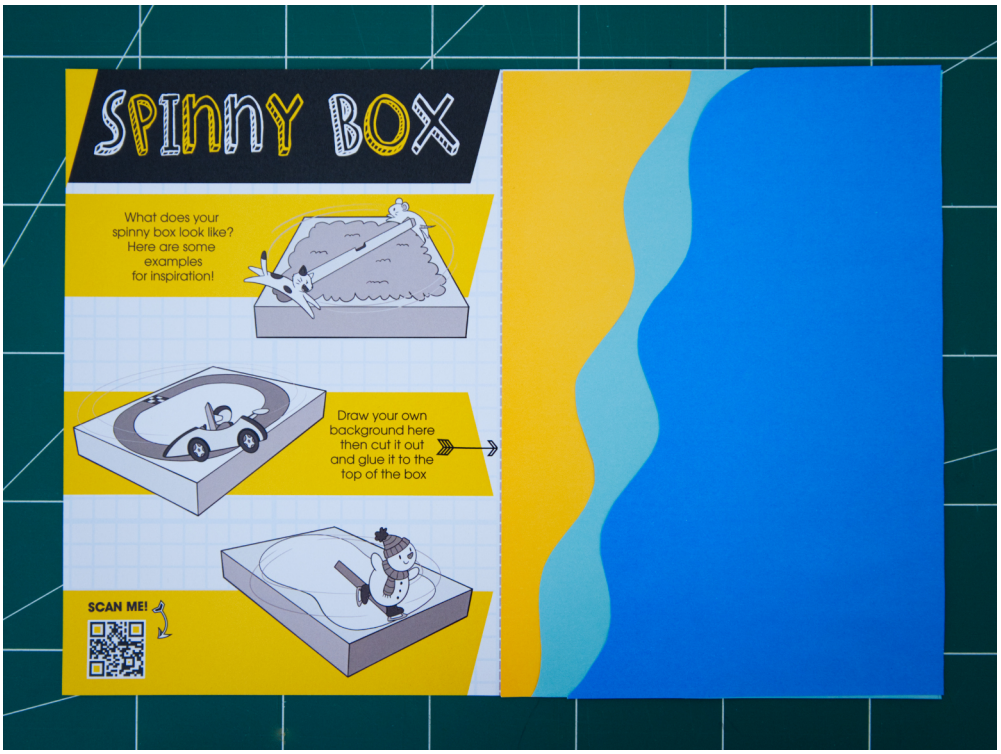




14 It's time to decide what your Spinny Box will look like! First decide what will be attached to the spinner arm. You can use the empty space on the template to draw it and cut it out.

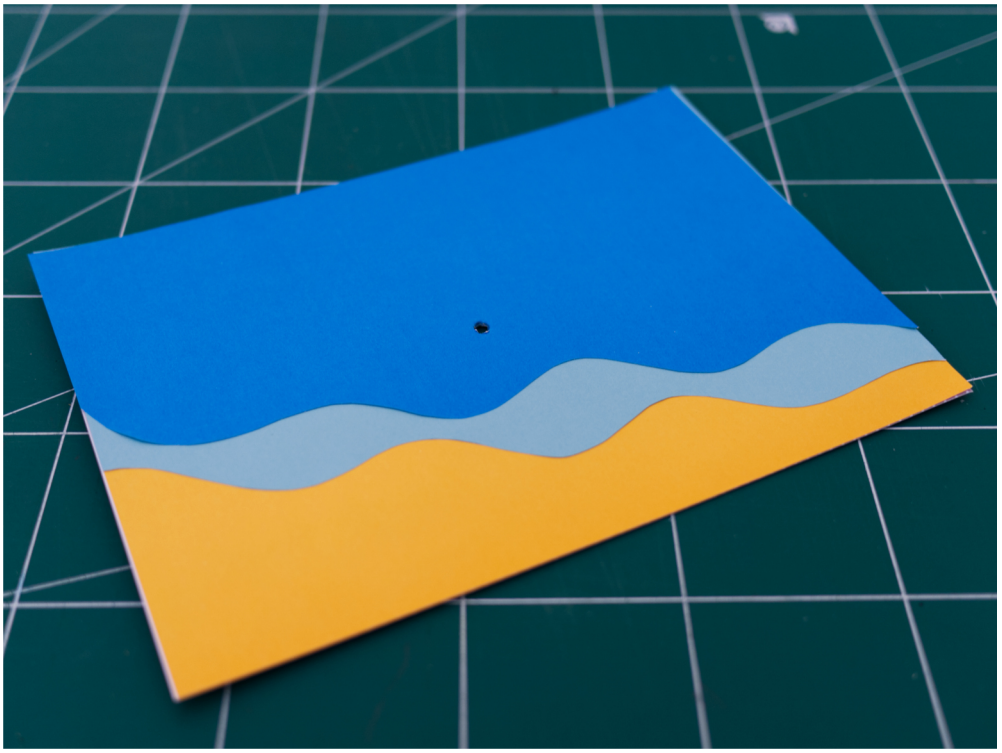


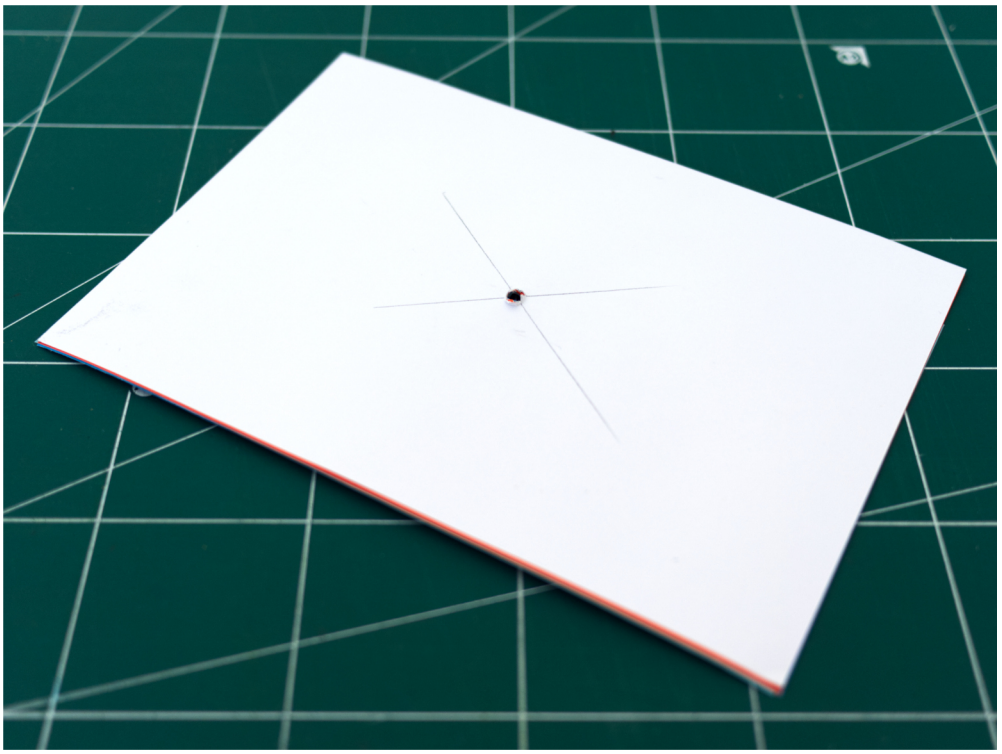
15 Then, you'll need a background. The white space on the second page of the template is provided for you to draw or color on and glue onto the box. I used paper cutouts to create a beach scene for my shark.



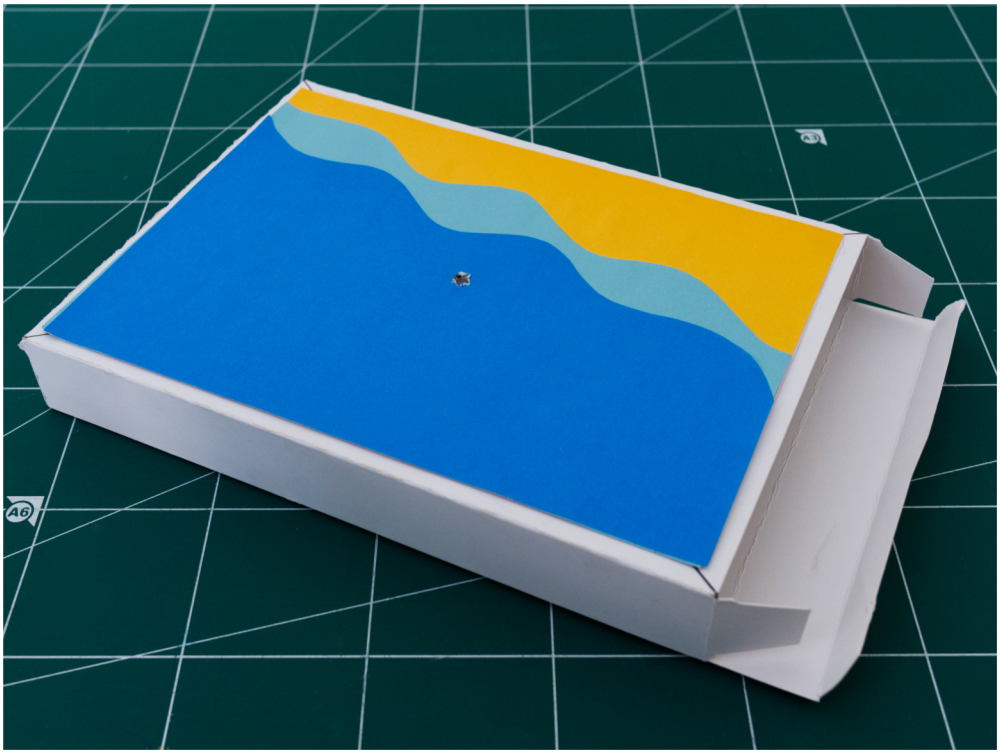
16 Use the pencil to poke a hole in the background scene (I drew two diagonal lines on the back to center the hole again).

You can also decorate and glue the background scene to the box and *then* poke the hole in it to make sure they're lined up (in other words, do steps 14-17, then go back and do steps 10-13).

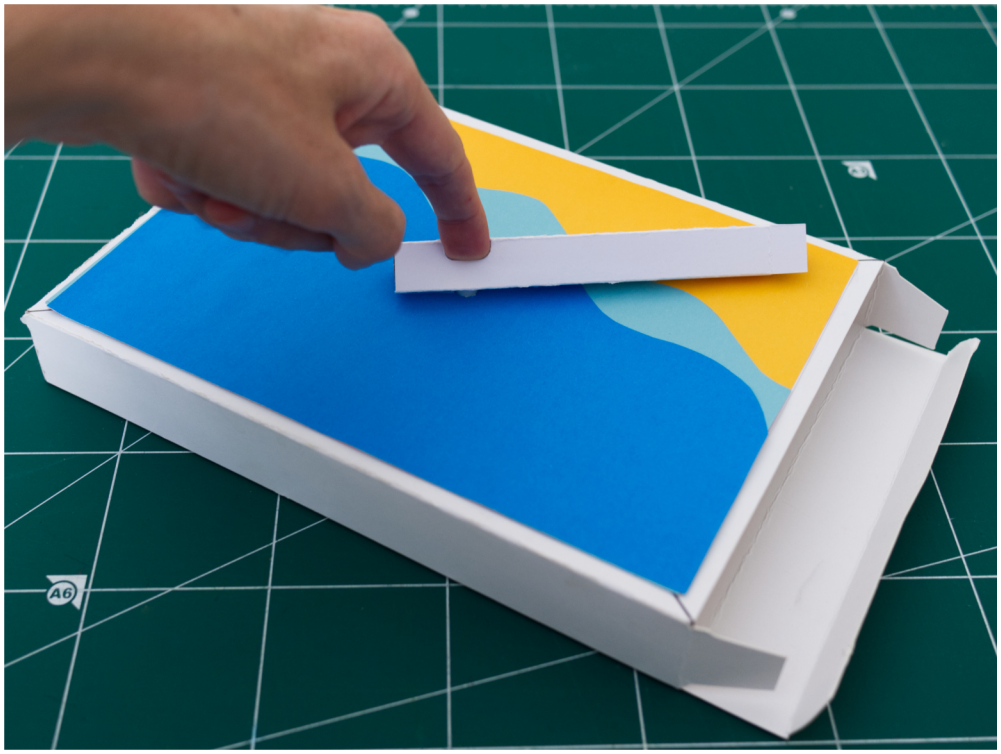




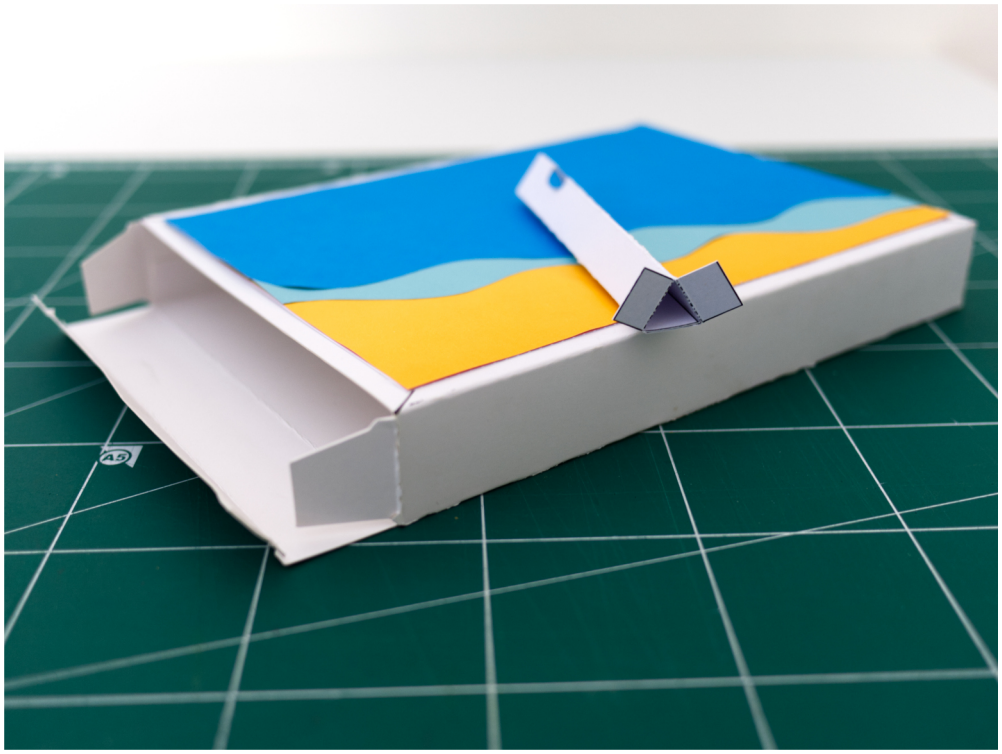
17 Glue or tape your background scene to the box. You'll note that the provided template is a little smaller than the actual box, so you can always draw on and use a bigger sheet of paper to cover the whole top if you prefer. You can even cover and decorate the sides of the box too!



18 Attach the spinner by pressing the servo horn onto the servo axle. The cutout in the spinner is there so you can use your finger or the back of a pencil to push the servo horn down onto the axle.

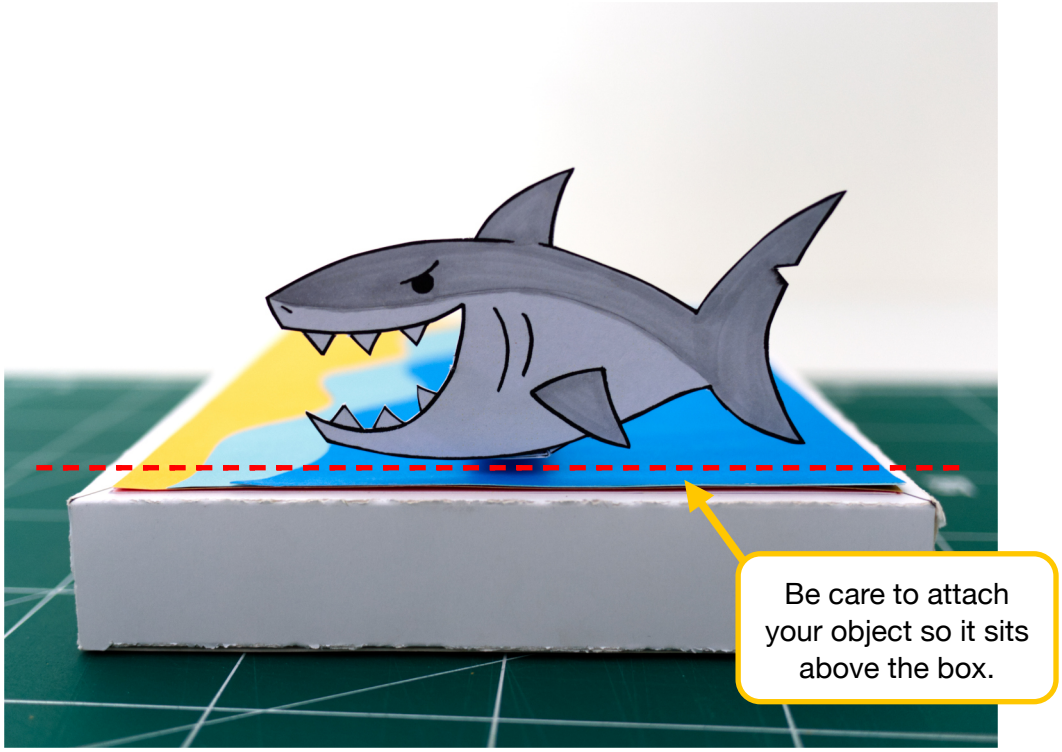


19 Fold the tabs on the spinner out.

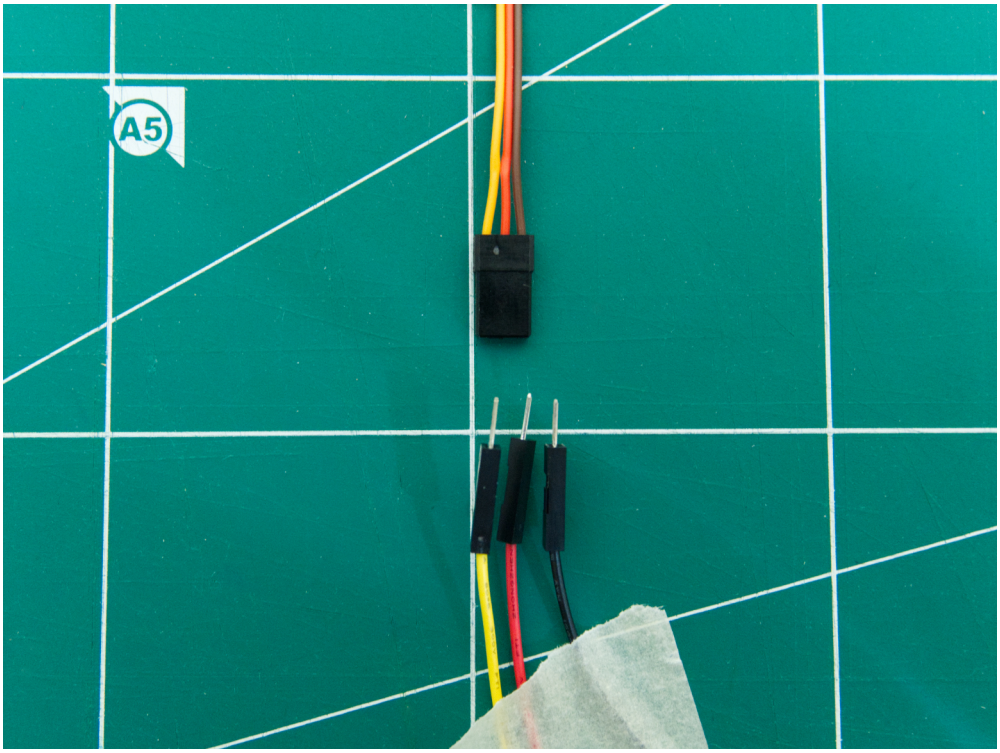


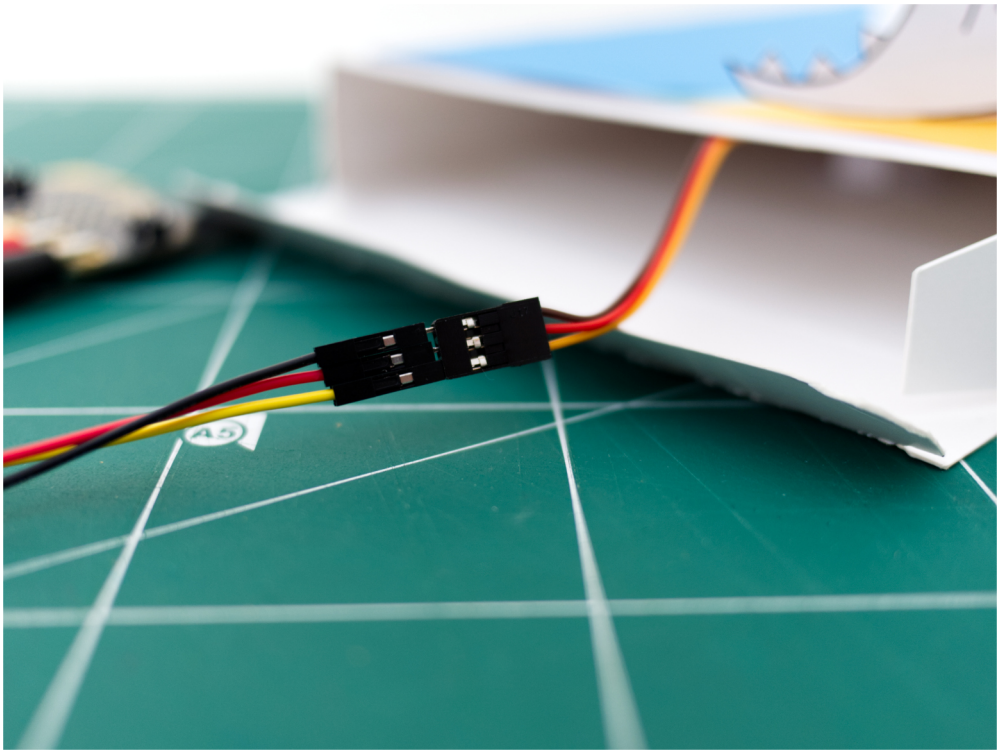
20 Glue or tape your spinning object to the tabs. If you're using the longer spinner, you'll want to do the same thing for both ends of the spinner.

Note when you attach the object to the spinner that all parts of it sit *above* the box, otherwise it'll get caught when it's in motion.



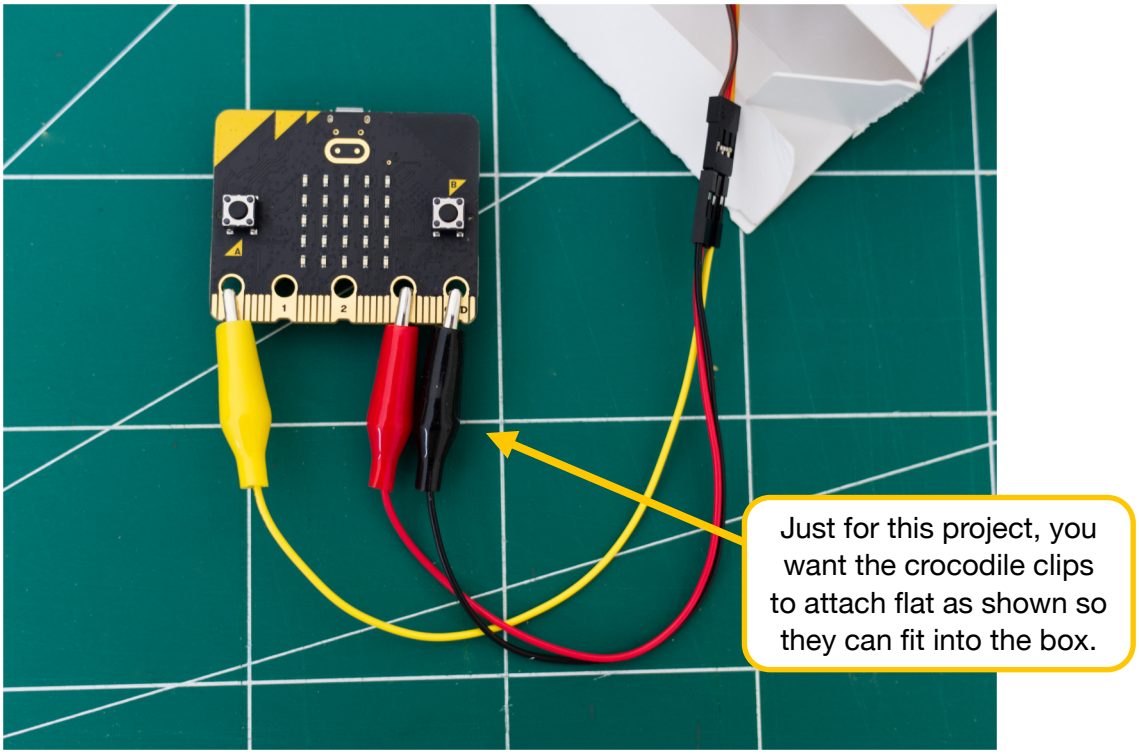
21 Almost done! Now it's time to connect the electronics and program the Spinny Box. Connect 3 of the the crocodile to male jumper pin cables to the servo header. You can use any color of crocodile cables, but if you match the color of the servo wires to the crocodile cables, it will make it much easier to keep track of the connections.

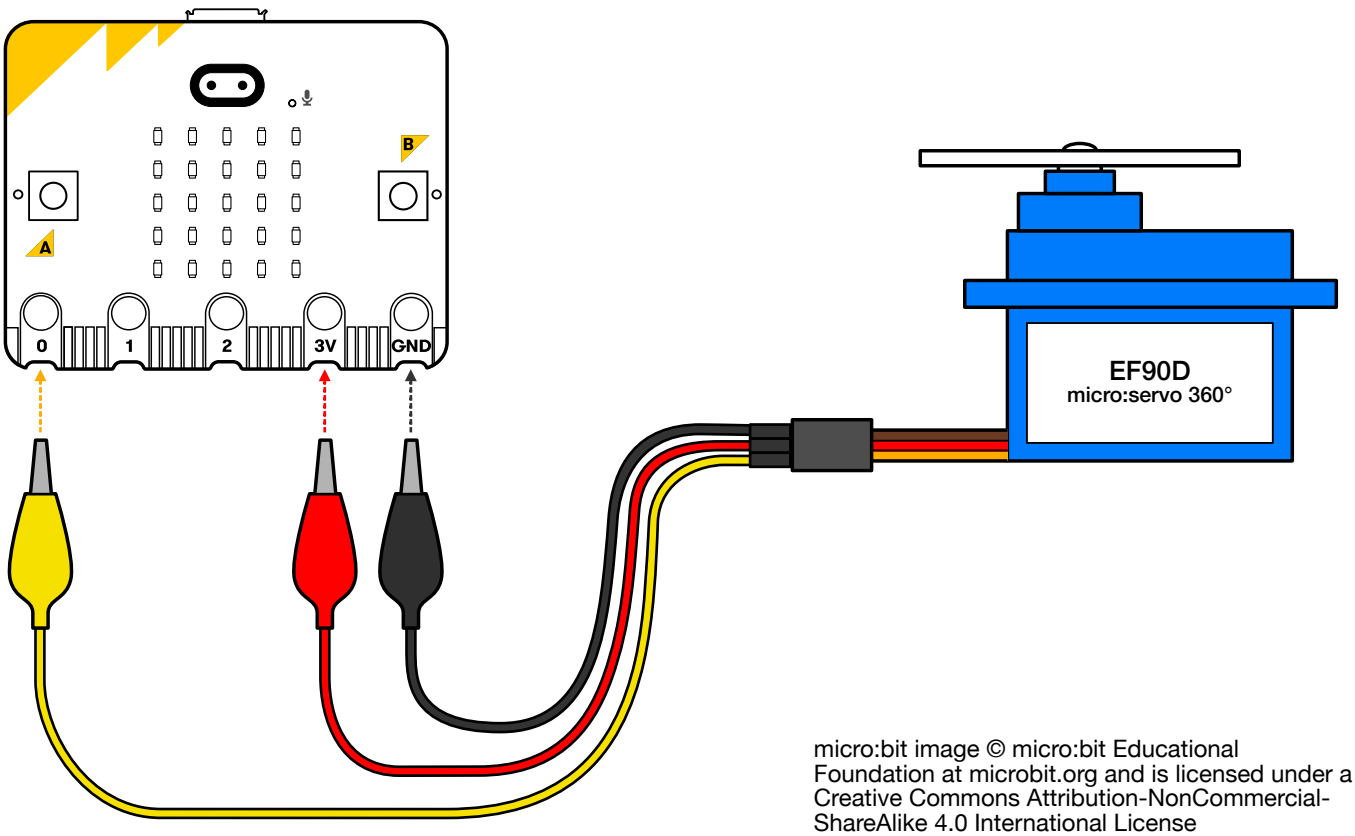




22 Connect the crocodile clips to the micro:bit. Make sure that they are connected as follows:

- Crocodile clip connected to the YELLOW servo wire → micro:bit Pin 0
- Crocodile clip connected to the RED servo wire → micro:bit 3V
- Crocodile clip connected to the BROWN servo wire → micro:bit GND

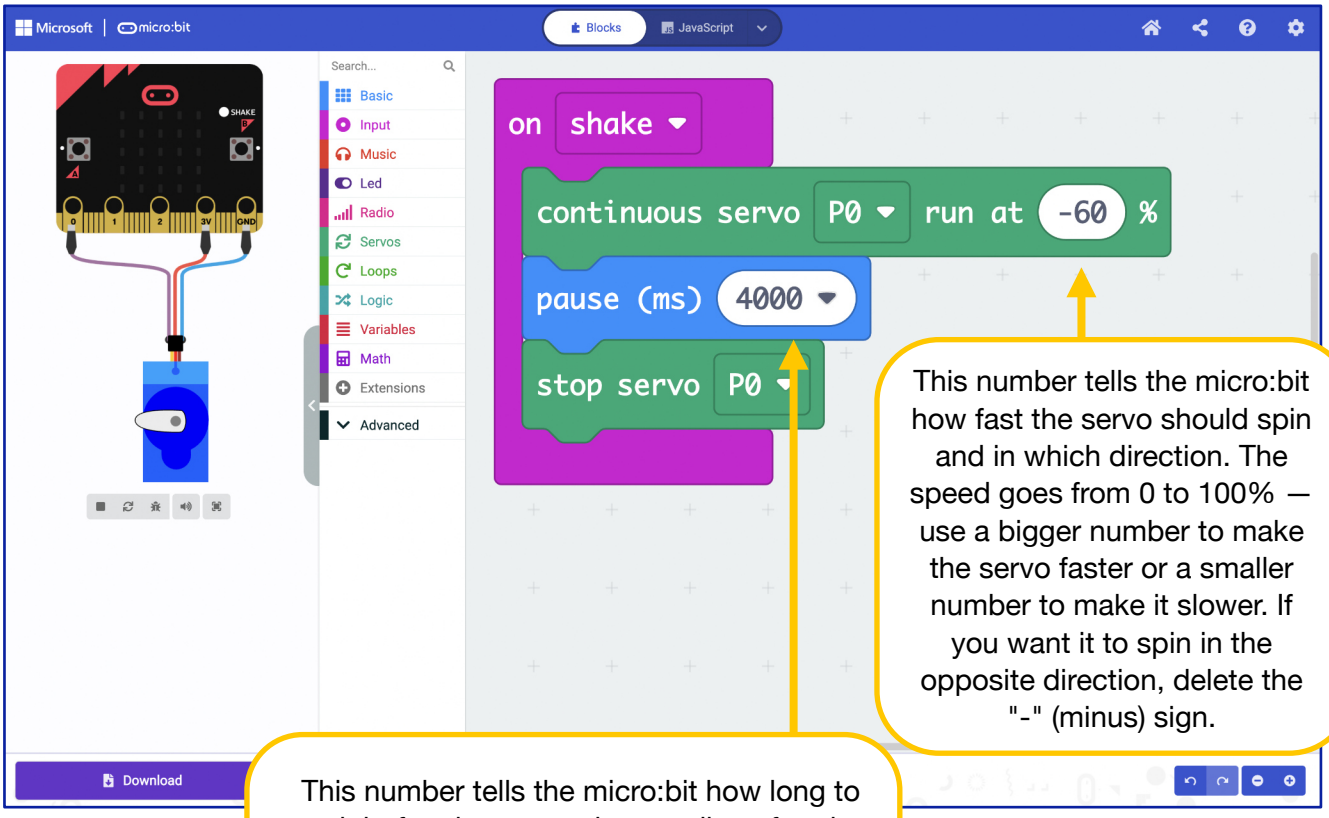




23 Connect the micro:bit to your computer using the micro USB cord. The cord will be used both to transfer the code and to supply power to the micro:bit and the servo.

24 Get the code from here:
https://makecode.microbit.org/#pub:_V047zJEgp2yV

You may want to update the code to suit your design.



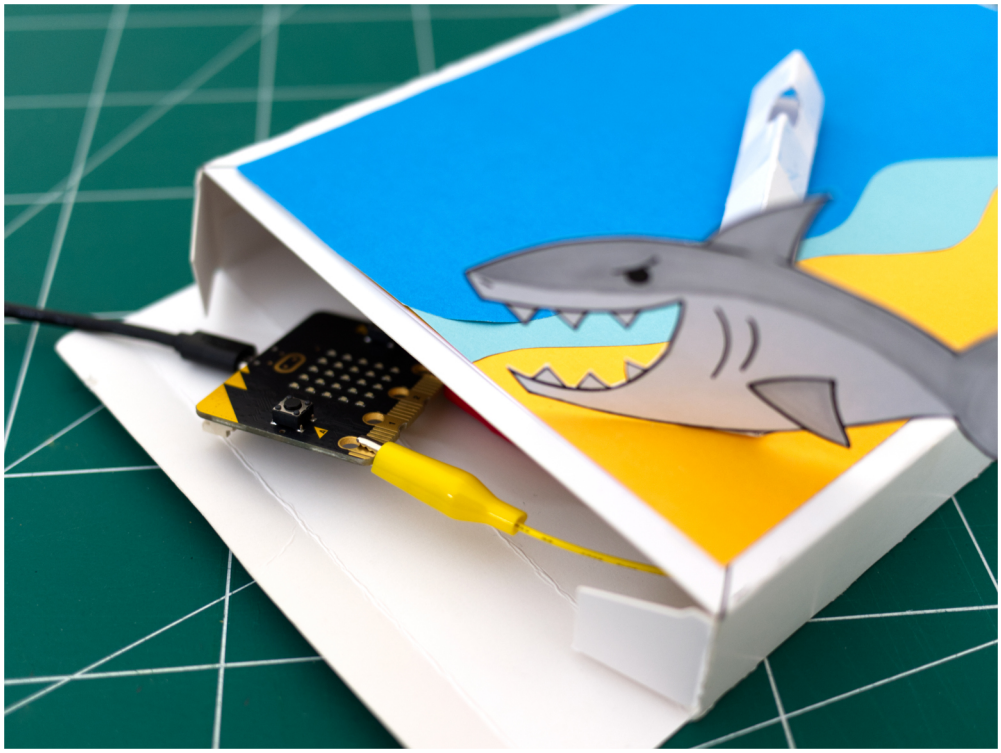
25 Upload the code to the micro:bit using the following instructions (choose in the instructions what type of computer and browser you're using for more specific directions):

https://microbit.org/get-started/first-steps/set-up/

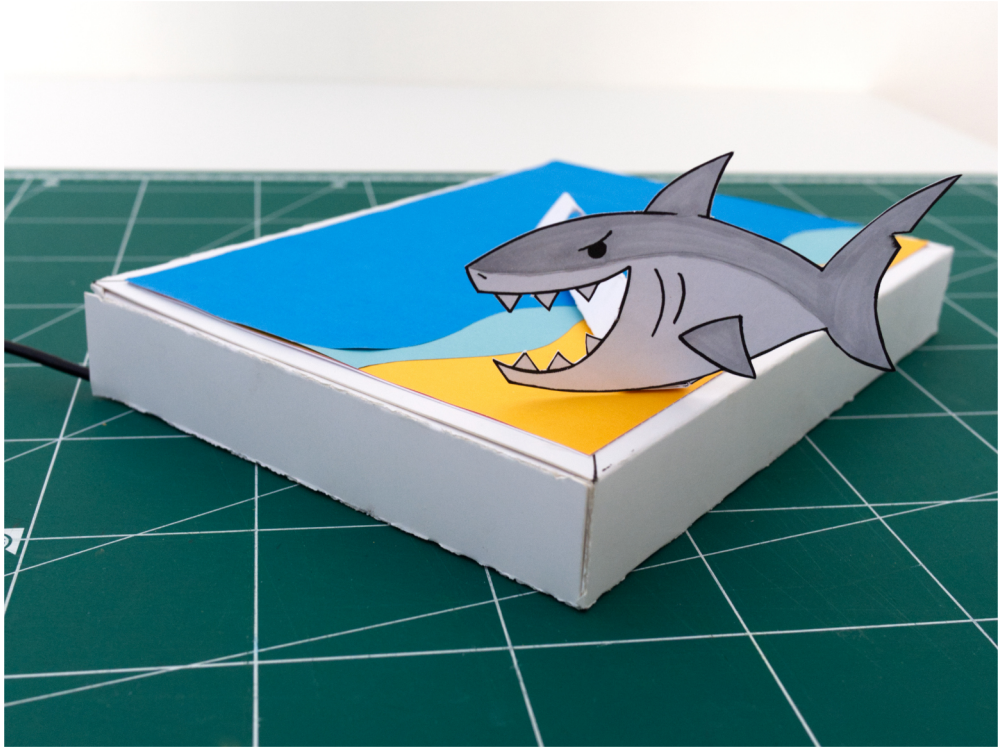
or

https://makecode.microbit.org/device/usb

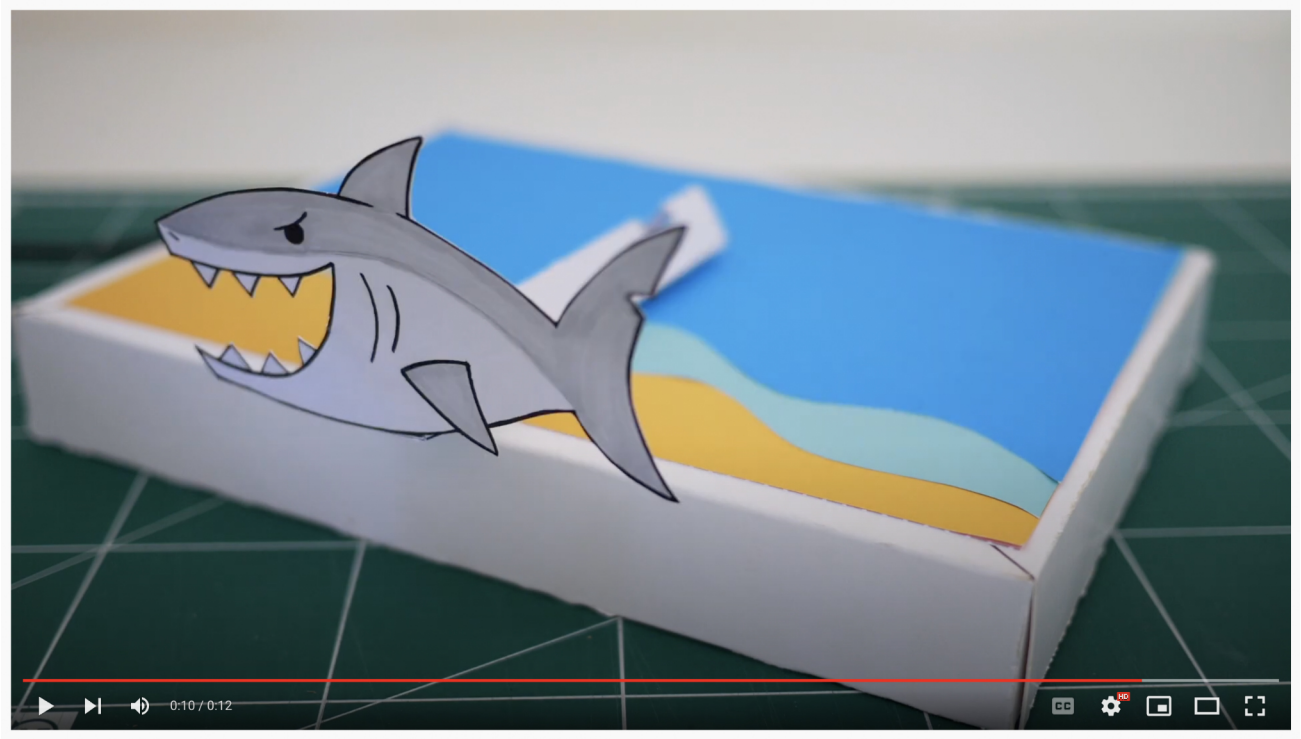
26 Now that it's programmed, you can put the micro:bit into the box. I used a small piece of tape so it doesn't move around too much.



27 Close the box so the micro USB cord sticks out of one of the corners.



28 Test it out! Shake the box to make the object spin! Here's a video of it in action: https://youtu.be/I-m-FingmLc



29 Experiment! Play around with the code to make the spinner go faster, slower, or switch directions partway through. Try making longer or shorter spinners, or seeing what happens if you attach the spinner somewhere not in the center of the box. What other spinning scenes can you create?

micro:bit

Getting started

To get started with the micro:bit, you'll want to upload some code either with the provided micro USB cord, or using a mobile app.

The easiest way to program the micro:bit is using MakeCode. Here's some sample code you can download to get you started:

https://makecode.microbit.org/#pub:_dkrYv67Ui9jW

To transfer the program to your micro:bit, use the following instructions (choose in the instructions what type of computer and browser you're using for more specific directions):

https://microbit.org/get-started/first-steps/set-up/

or

https://makecode.microbit.org/device/usb

To learn more about the micro:bit and its features, check out the https://microbit.org/ website and the https://makecode.microbit.org/ website!

SERVOS

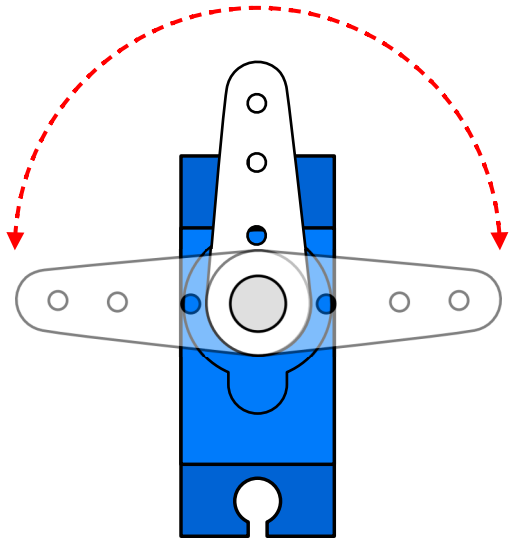
Servos included in the kit

Your kit includes two servos:

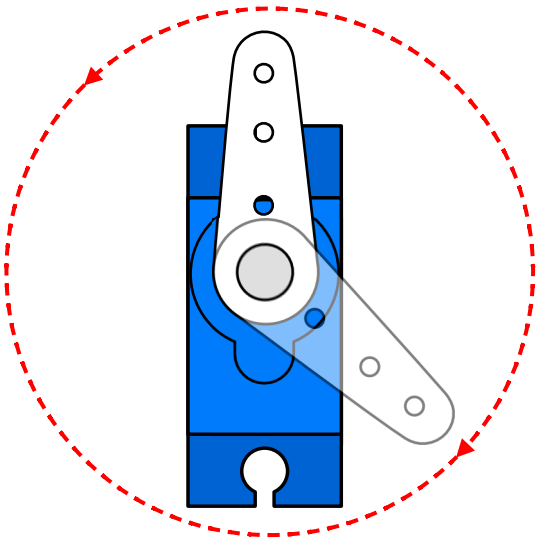
- Standard Micro Servo (EF92A, micro:servo 180°)
- Continuous Rotation Micro Servo (EF90D, micro:servo 360°)

The kit also includes servo horns. These are the white plastic pieces that attach to the servo axle.

What's the difference?



The **Standard Micro Servo** (also called a Positional Micro Servo) can only rotate 180° — half a circle. You can control the exact position it goes to by programming the angle. You can't control the speed.

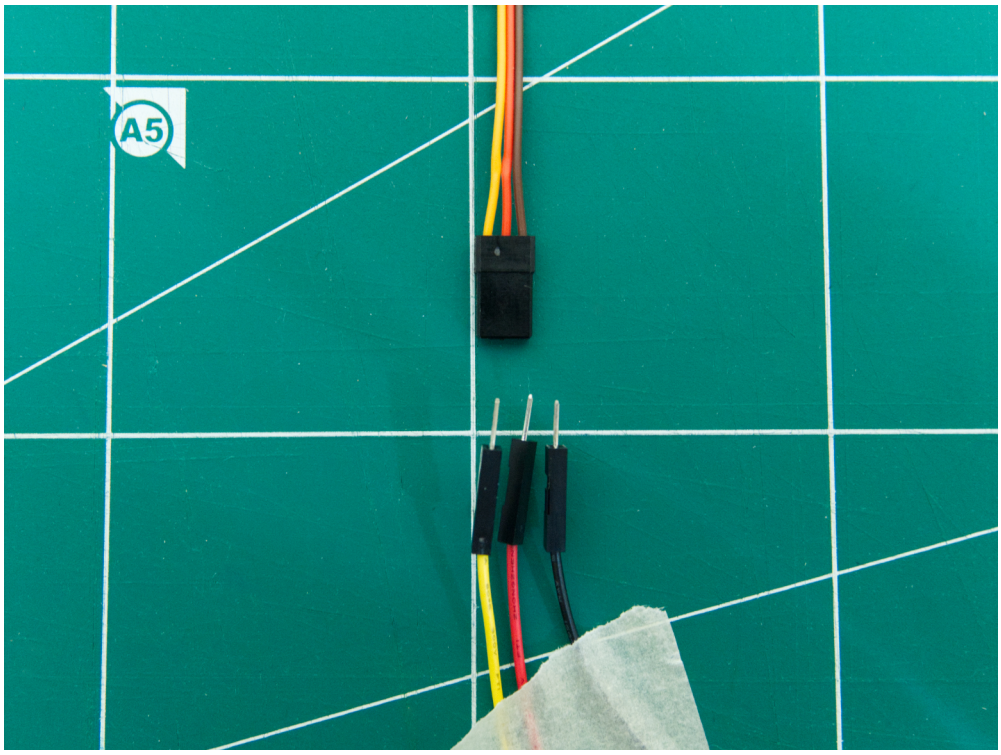


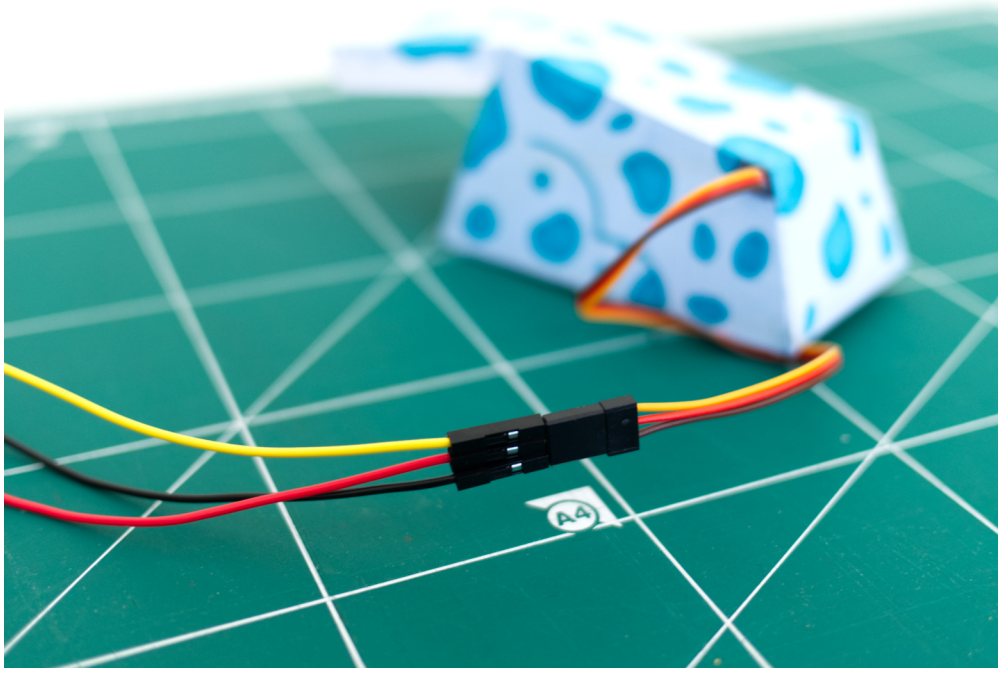
The **Continuous Rotation Micro Servo** can rotate 360° — a full circle. It can go around continuously in either direction. But the trade off is that you can't control the exact position it goes to — all you can do is program the speed and the direction it spins in.

Wiring

To use the servo, you'll need to program and connect it to the micro:bit.

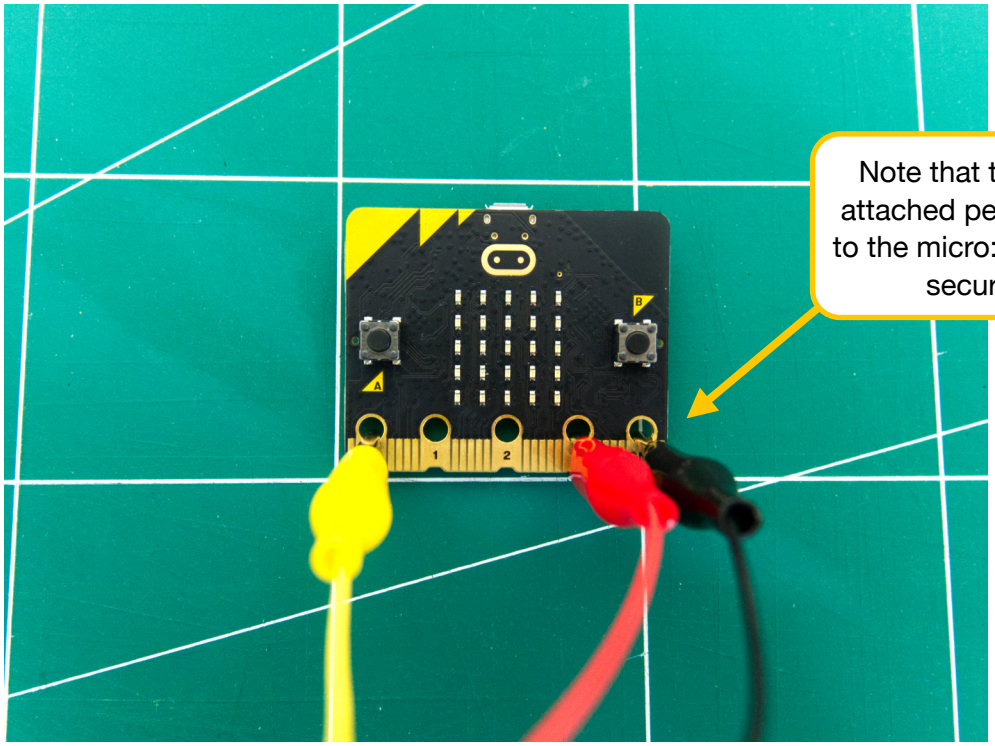
Connect 3 of the the crocodile to male jumper pin cables to the servo header. You can use any color of crocodile cables, but if you match the color of the servo wires to the crocodile cables, it will make it much easier to keep track of the connections.

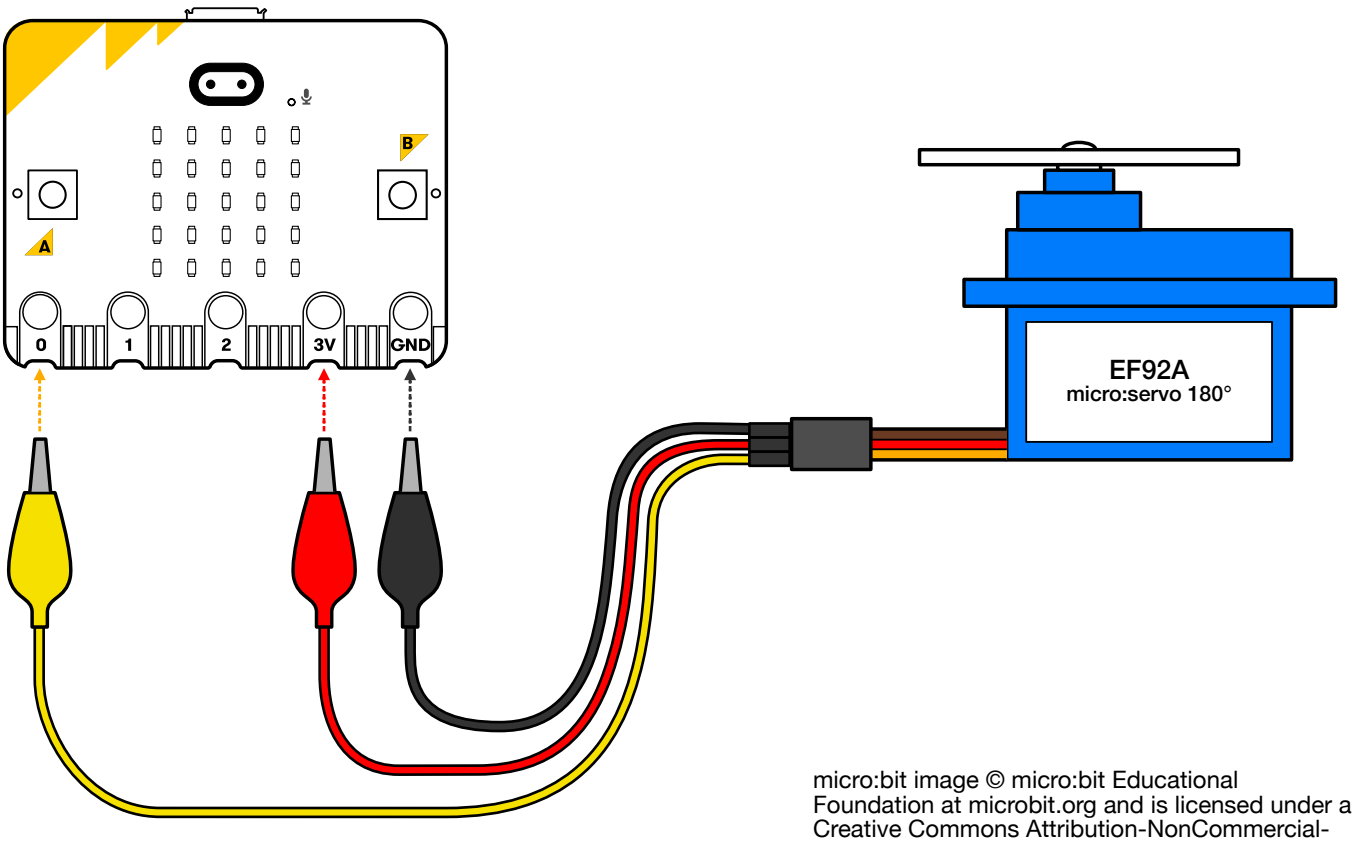




Connect the crocodile clips to the micro:bit. Make sure that they are connected as follows:

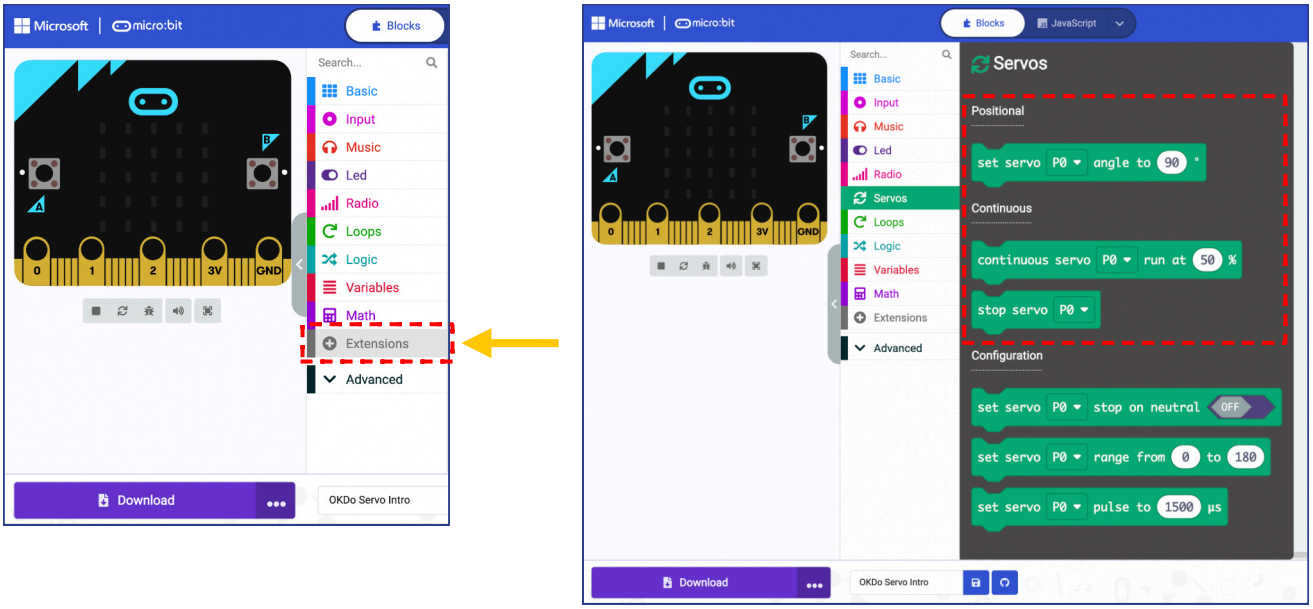
- Crocodile clip connected to the YELLOW servo wire → micro:bit Pin 0
- Crocodile clip connected to the RED servo wire → micro:bit 3V
- Crocodile clip connected to the BROWN servo wire → micro:bit GND





Programming the servo

To program the servo in MakeCode, you'll need to add the Servo Extension first. Click on "Extensions", then "Servos". The extension lets you program both Positional (Standard) servos and Continuous servos.



You can test your servos by trying these two simple programs. Experiment with changing the angles and speeds to see what happens!

Positional Servo: https://makecode.microbit.org/#pub:_7iD1hr87x9VT

Continuous Servo: https://makecode.microbit.org/#pub:_5E7bak9C0fjX

Powering the servo

Your kit includes a 2x AAA battery pack. This can provide the micro:bit with 3 volts of electricity. However, servos require more than 3 volts. For that reason, we recommend using the included micro USB cord to power the micro:bit and servo instead, and save the battery pack for other micro:bit projects that don't use any servos.

If you want to use more than one servo at once, we recommend purchasing an extension board to go with your micro:bit. To learn more about extension boards, see the section on "Other Resources".

OTHER RESOURCES

More Free Robot Templates

https://www.jasmineflorentine.com/steam-activities

More micro:bit Projects

https://microbit.org/projects/

https://makecode.microbit.org/

https://www.instructables.com/howto/microbit/

https://learn.browndoggadgets.com/c/MicroBit_Projects

https://learn.birdbraintechnologies.com/hummingbirdbit/projects/

https://www.hackster.io/microbit/projects

micro:bit Extensions

Breakout Boards: https://microbit.org/buy/accessories/?category=Electronics

Other fun add-ons: https://makecode.microbit.org/extensions

TEMPLATES

Provided Templates

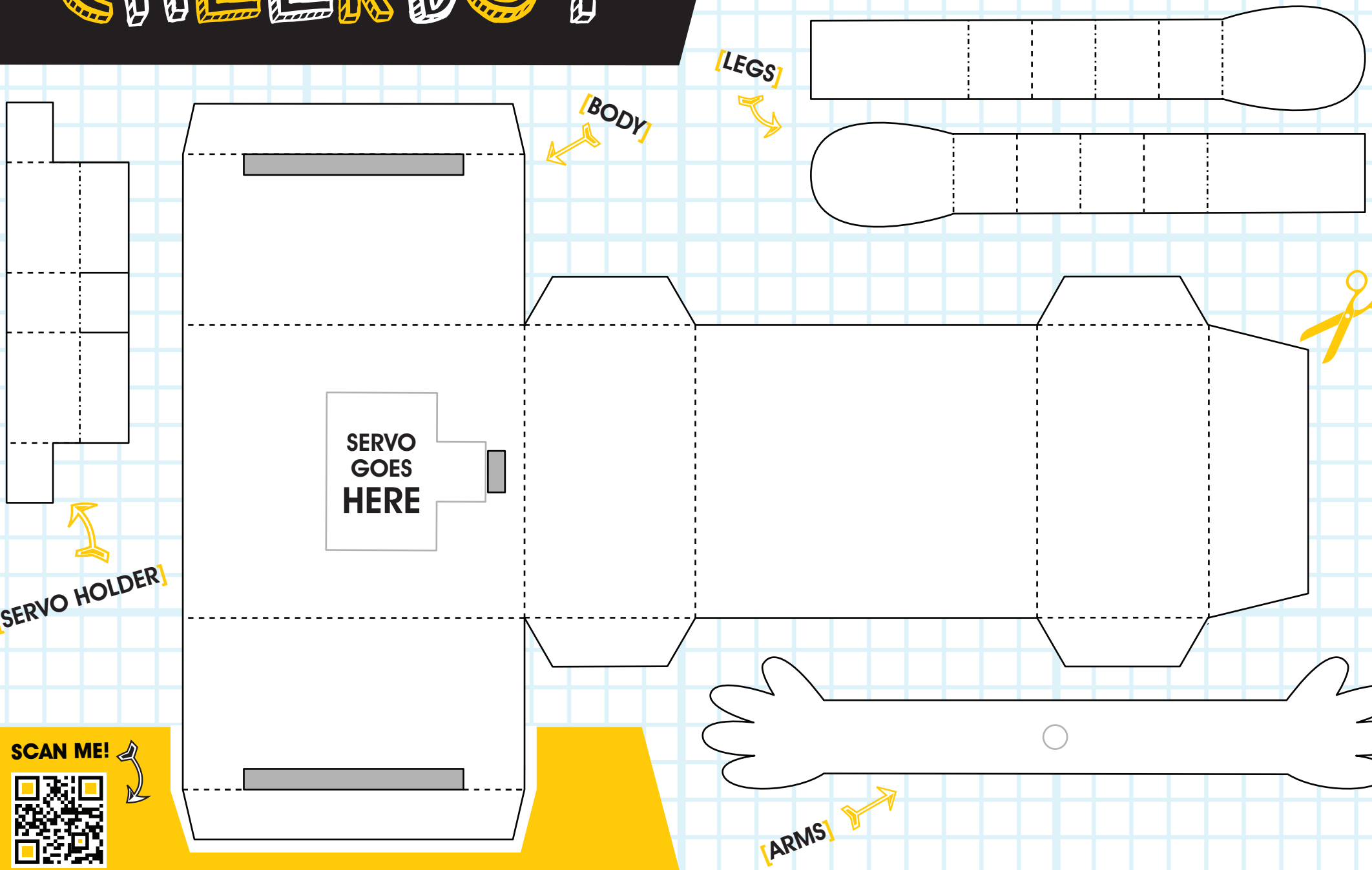
- 2 versions of the template are provided:
  - Full color, full bleed templates for A4 paper (identical to templates included in the kit)
  - Minimal color templates for US Letter or A4 paper with print margins (for ease of printing at home or school)

Printing instructions

- Make sure to print the following templates at 100% scale so it prints at the right size
- Use a stiff paper such as cardstock
- Tip: try printing the templates on colored cardstock for fun!

CHEERBOT

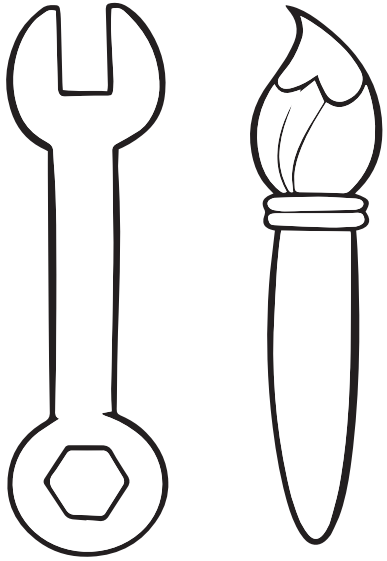
cutout
valley fold
cut
mountain fold

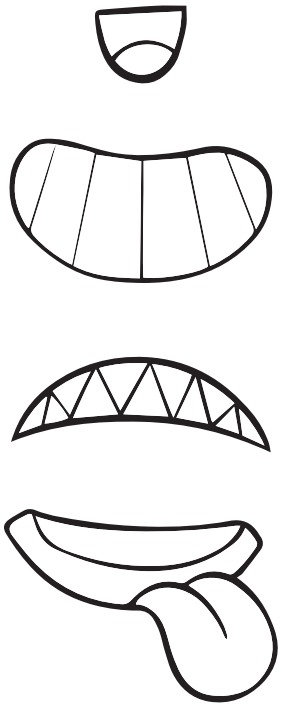


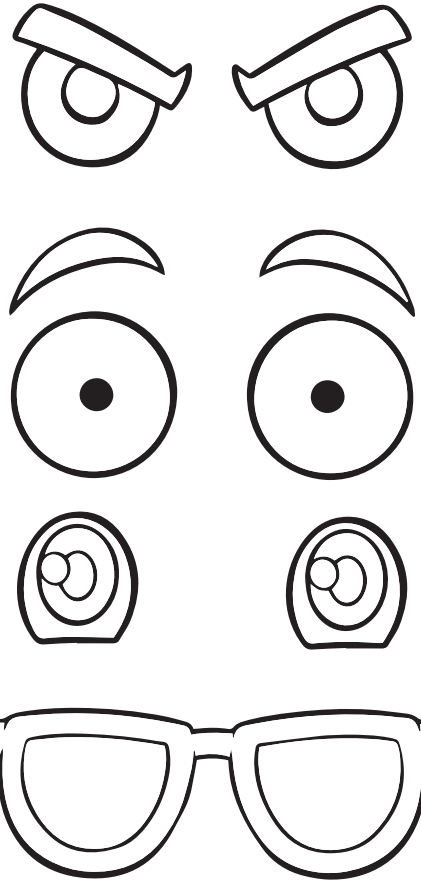
SCAN ME!

CHEERBOT

SCAN ME!



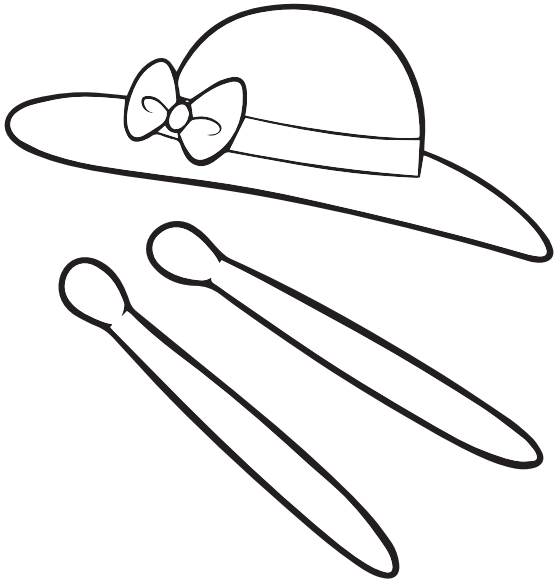




Draw and cut out props, hats, or other accessories

Draw and cut out a mouth

Draw and cut out eyes



PAPER PET

cutout
valley fold
cut
mountain fold

[SERVO HOLDER]

[FRONT LEGS]

SERVO GOES HERE

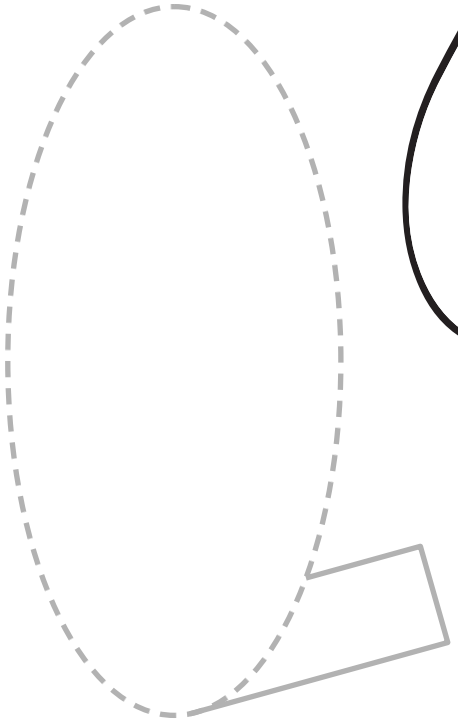
[BODY]

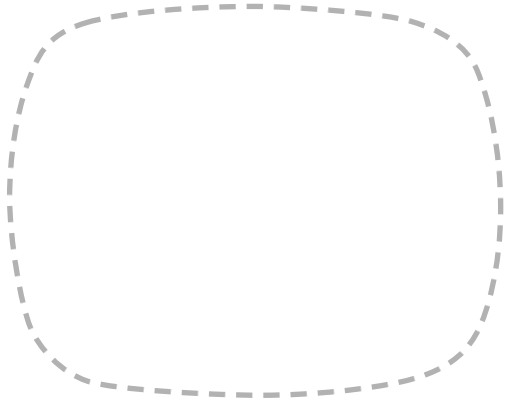
SCAN ME!

Cut and fold the body and legs, then transform it into any animal you want by using the templates for the head and tail on the next page!

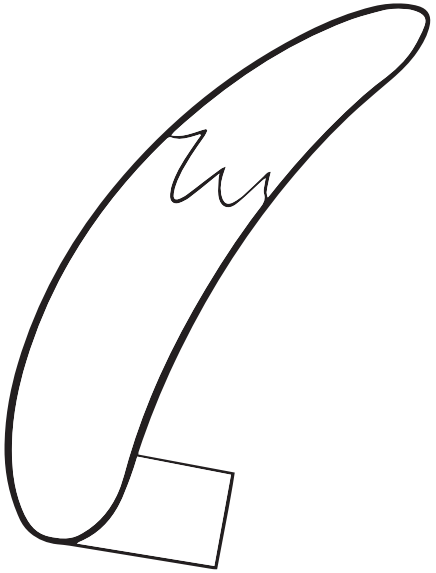
PAPER PET

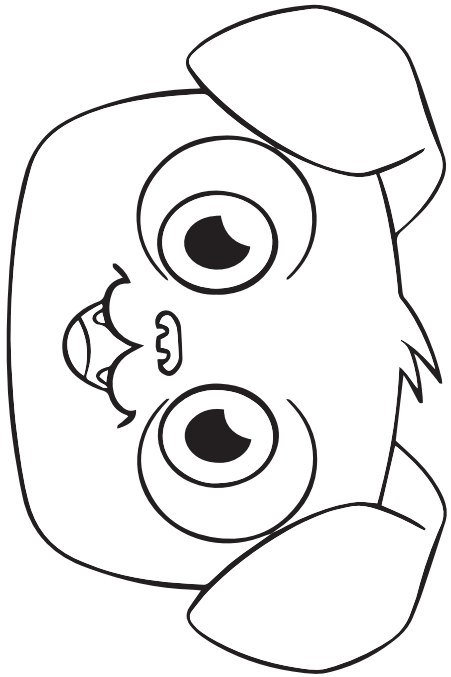
SCAN ME!

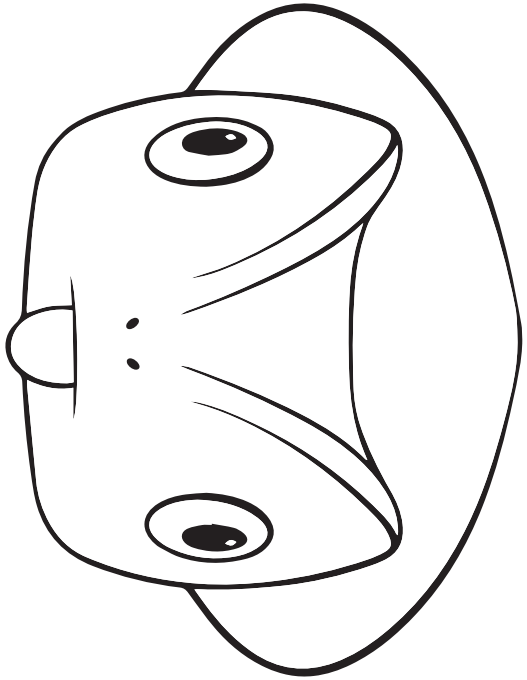


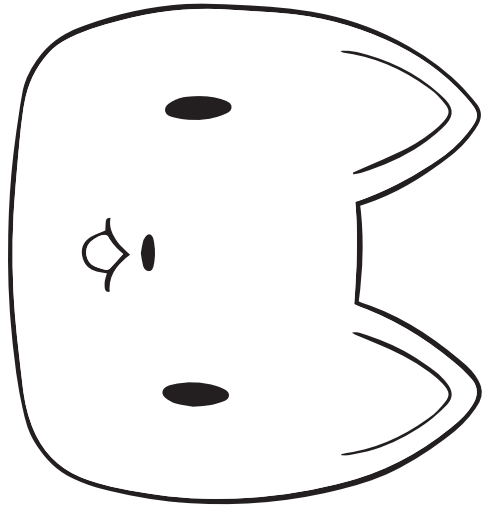


Draw your own animal's face and tail!







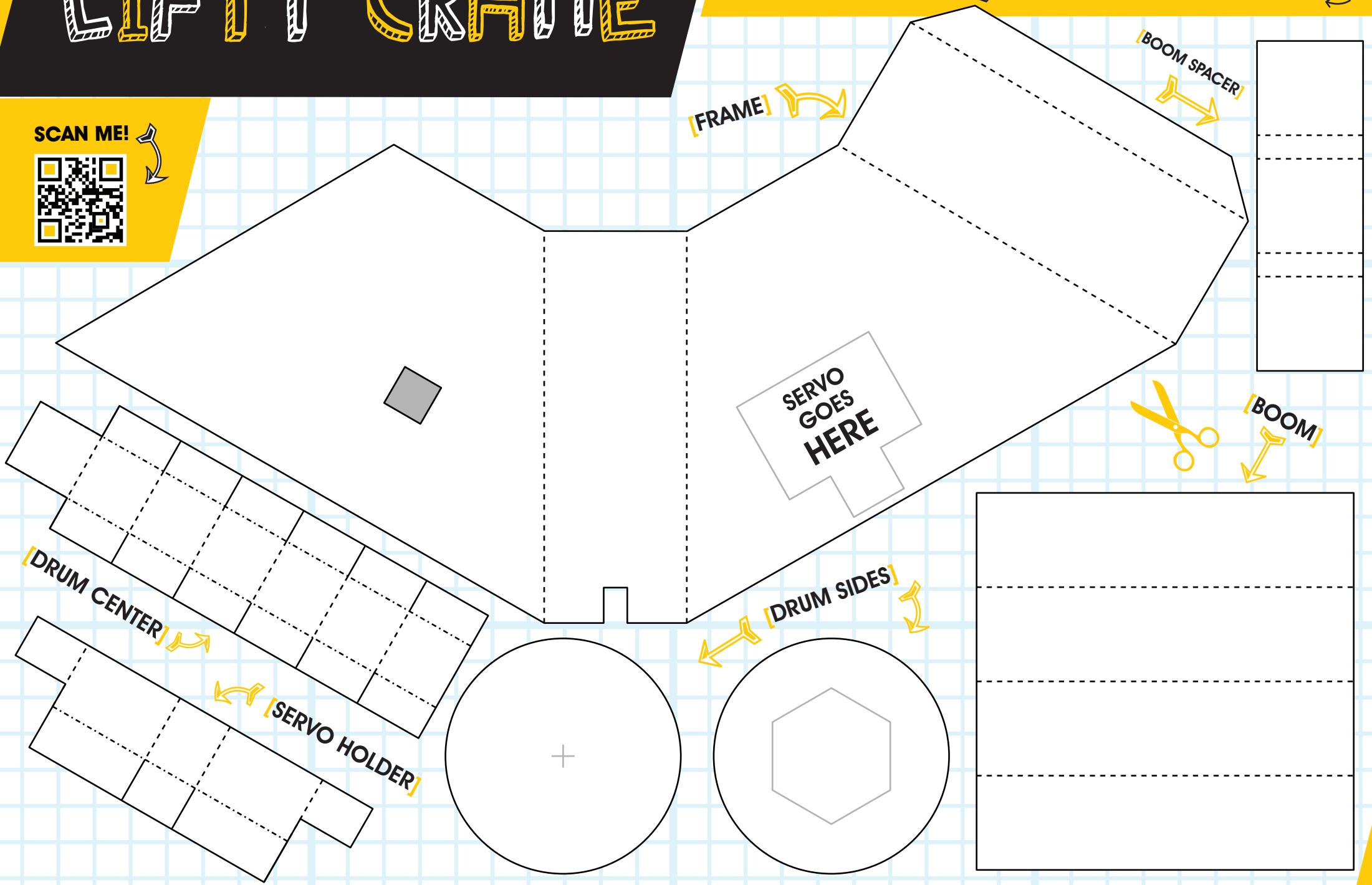


Draw and cut a face and tail for your Paper Pet, or colour and cut it from the template!

LIFTY CRANE

cutout
valley fold
cut
mountain fold

SCAN ME!

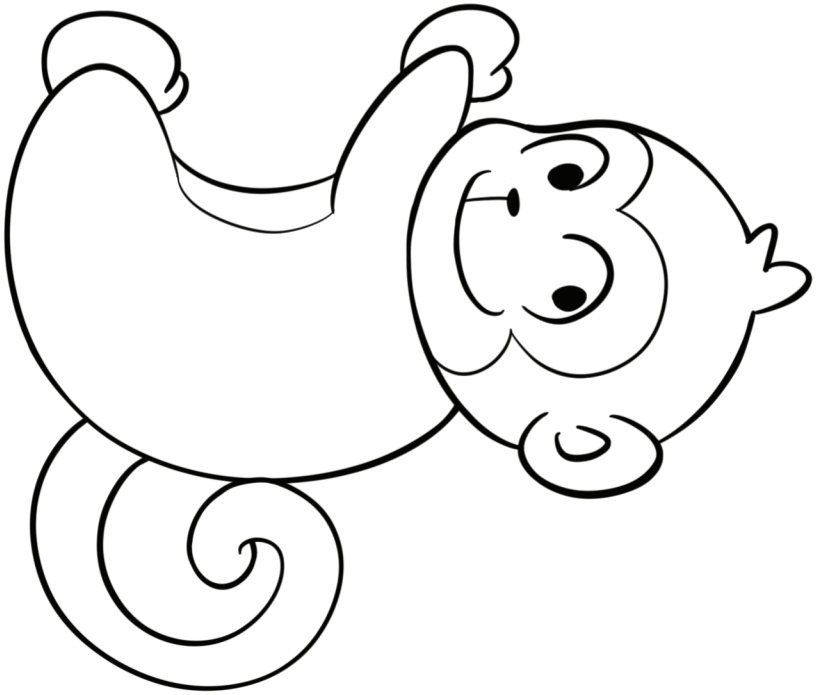


LIFTY CRANE

SCAN ME!

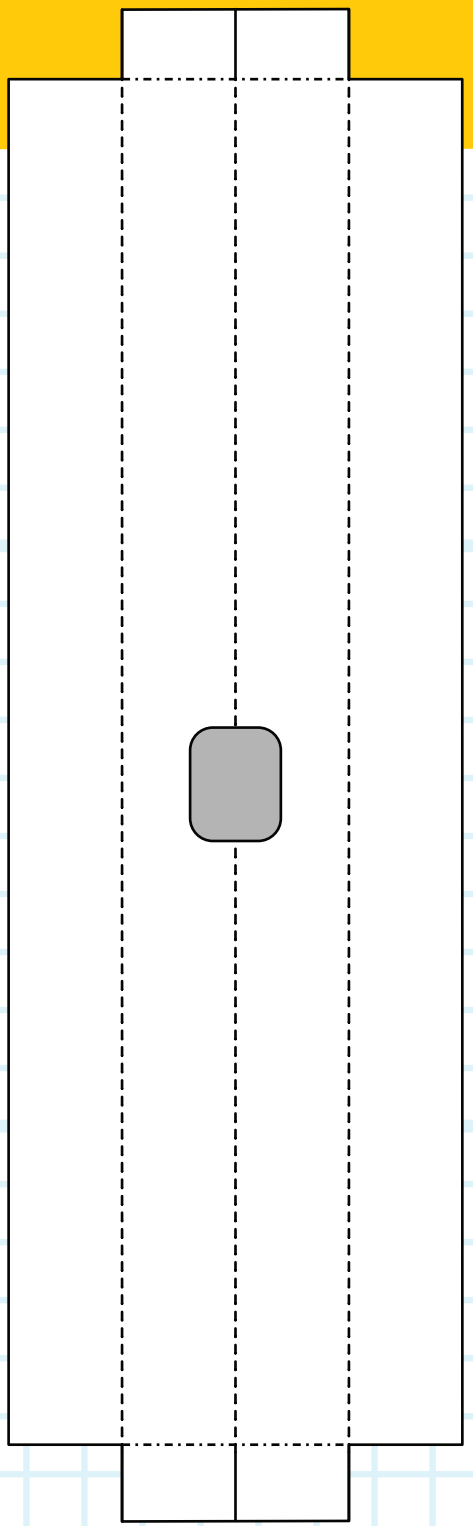
What is your crane lifting? Draw it here, then cut it out and attach it!

Here's some other things you can attach to the Lifty Crane

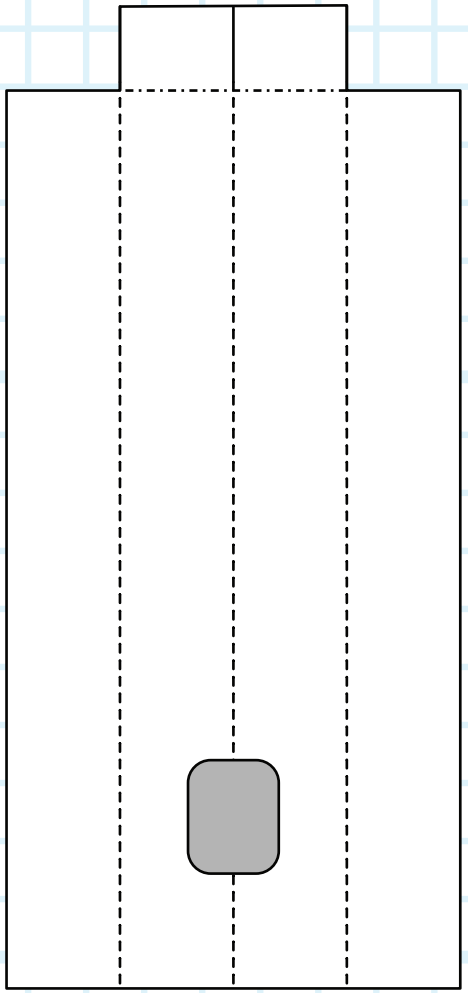


SPINNY BOX

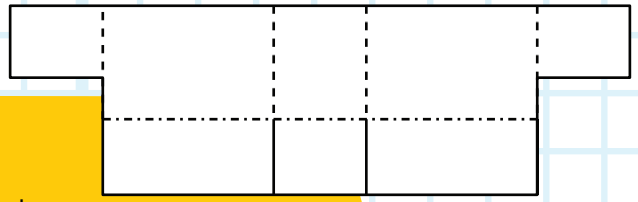
[LONG SPINNER]



[SHORT SPINNER]



[SERVO HOLDER]



What will be spinning on your box? Draw it here, then cut it out and attach it to the short or the long spinner!

SCAN ME!

cutout

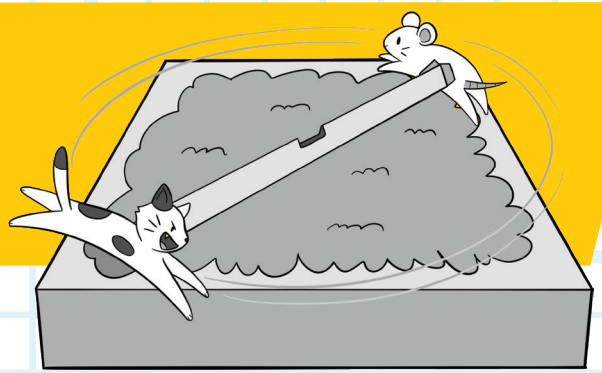
valley fold

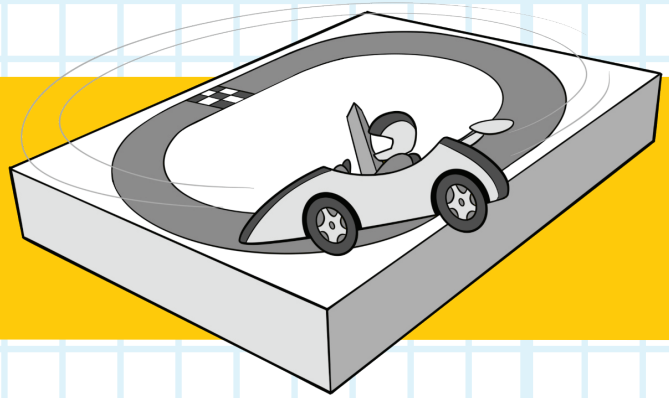
cut

mountain fold

SPINNY BOX

What does your spinny box look like? Here are some examples for inspiration!

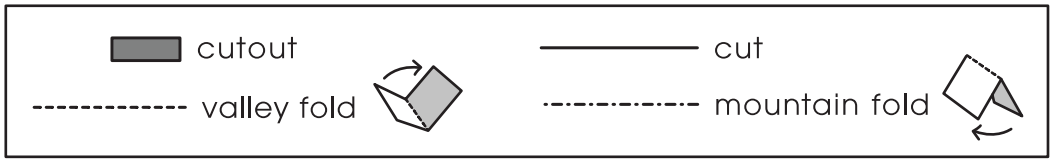


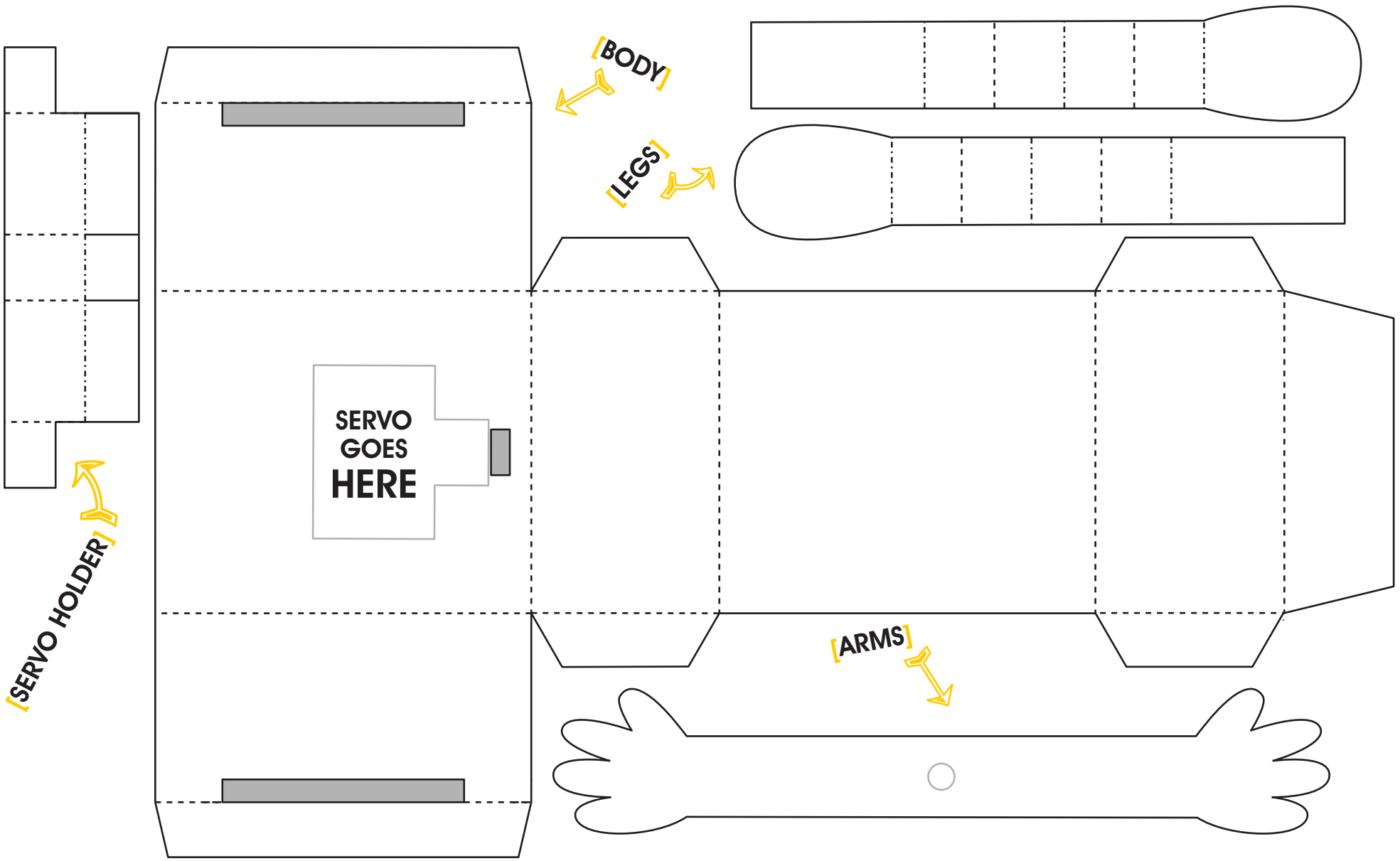


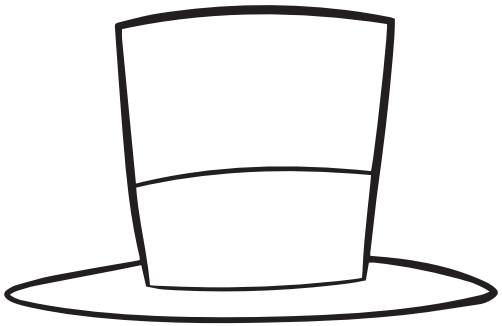
Draw your own background here then cut it out and glue it to the top of the box

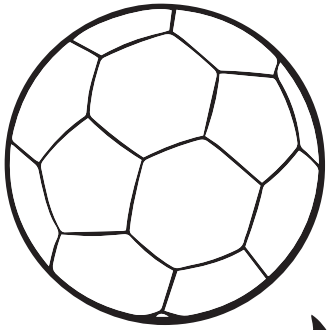
SCAN ME!

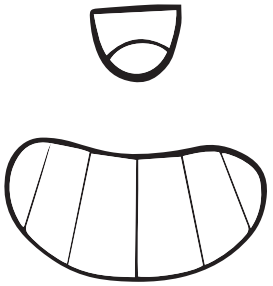
CHEERBOT

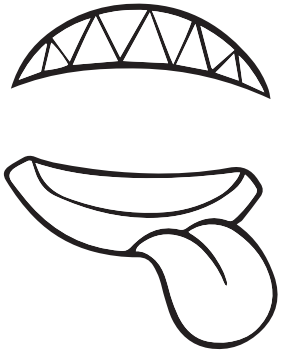

cutout
cut
valley fold
mountain fold

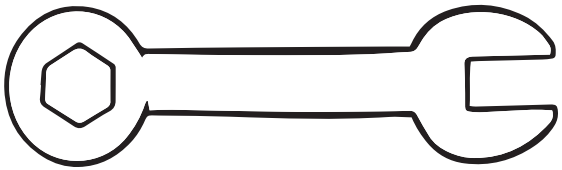

BODY
LEGS
SERVO GOES HERE
SERVO HOLDER
ARMS

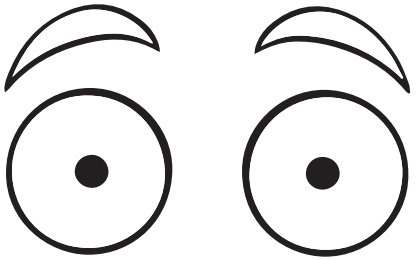


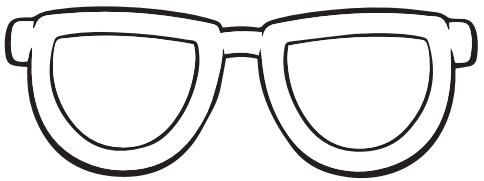


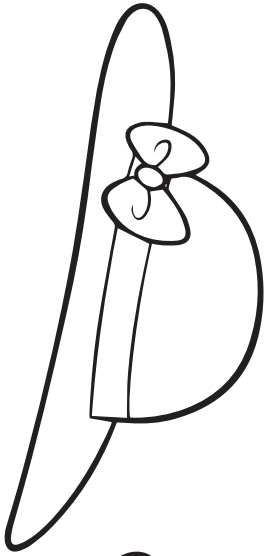


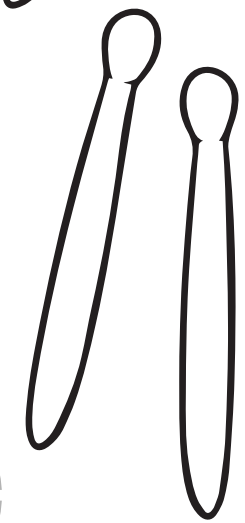












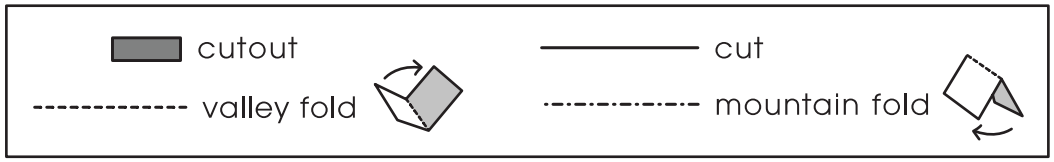
Draw and cut out a mouth

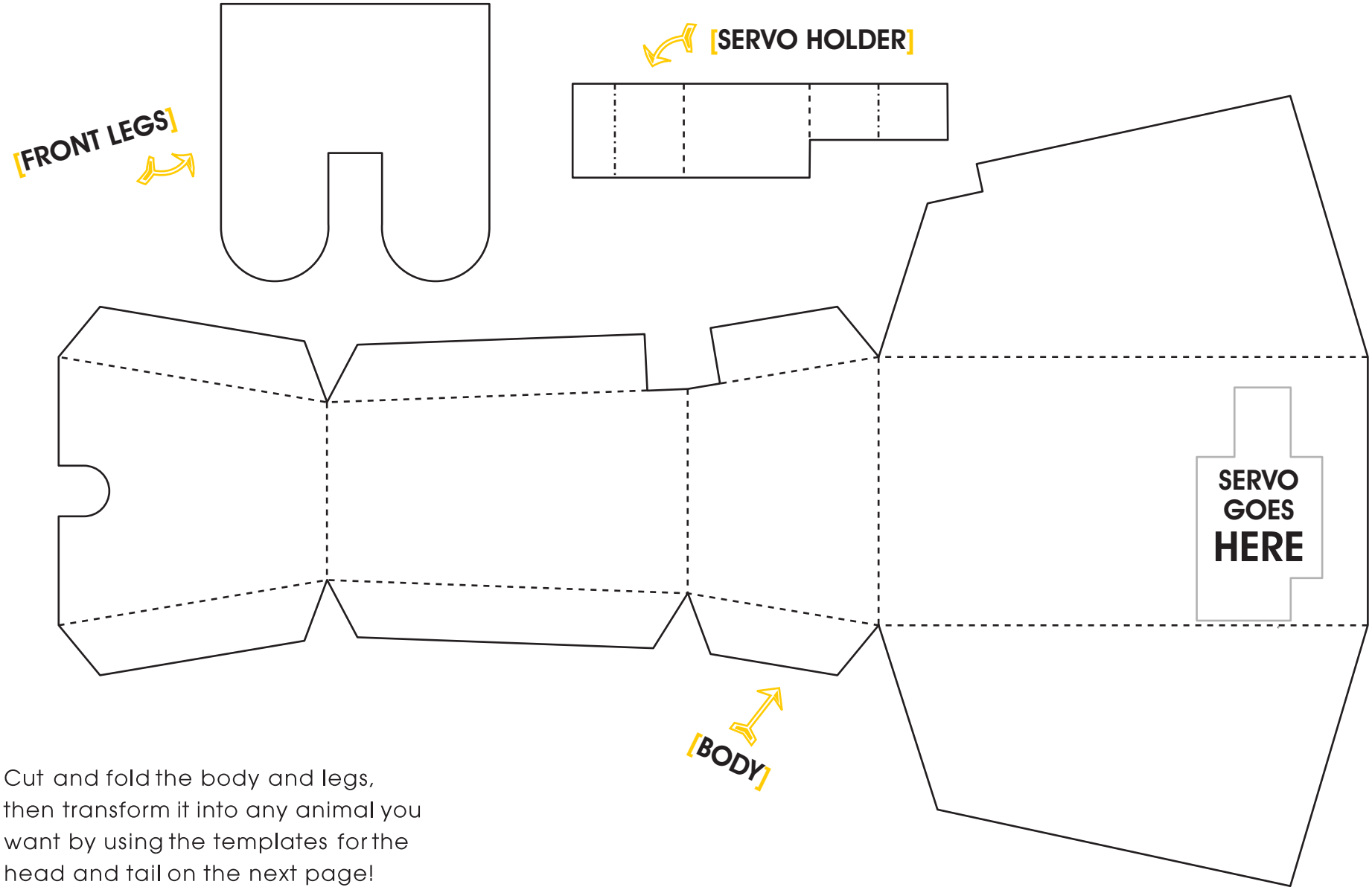
Draw and cut out eyes

Draw and cut out props, hats, or other accessories

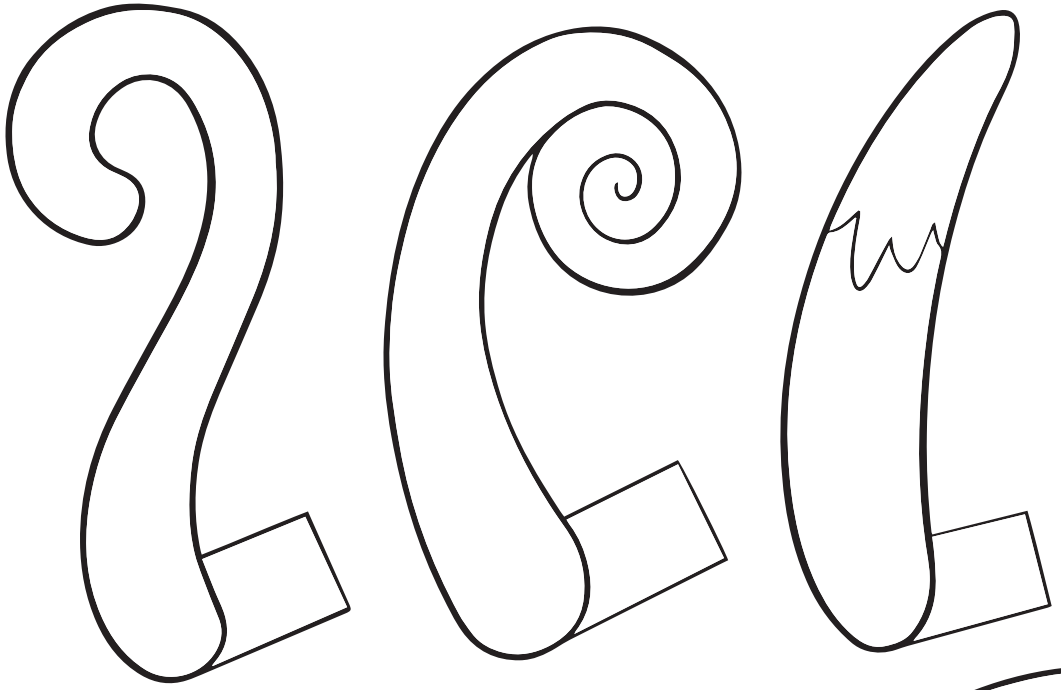
CHEERBOT

PAPER PET

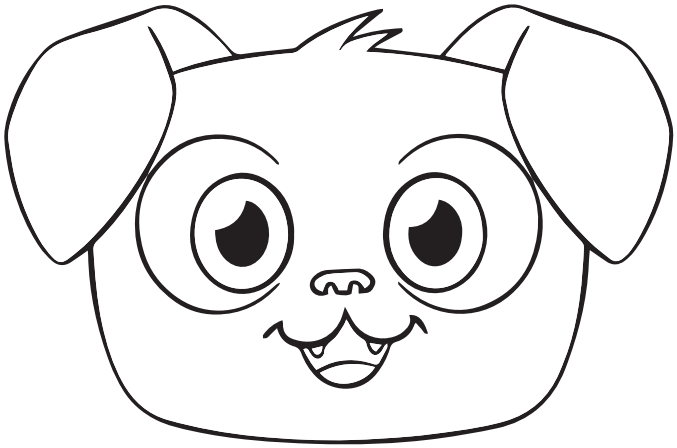


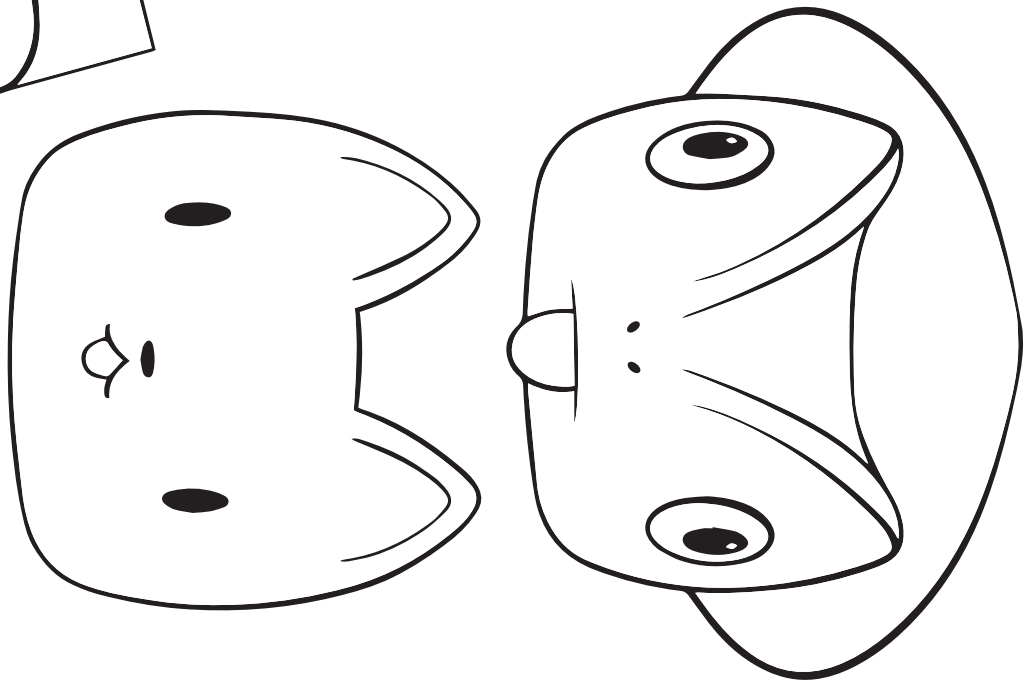


Cut and fold the body and legs, then transform it into any animal you want by using the templates for the head and tail on the next page!

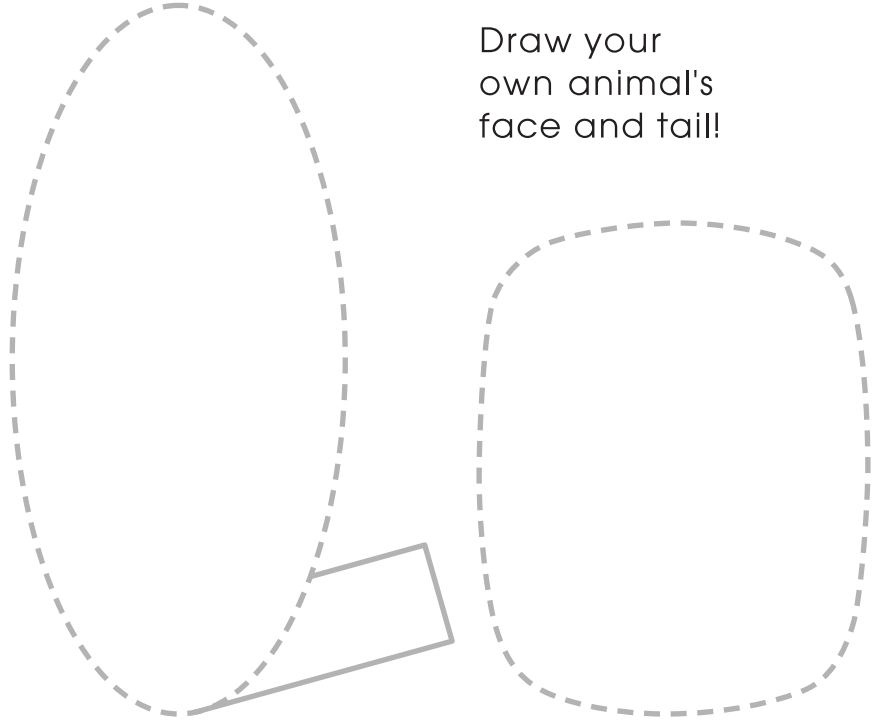


Draw and cut a face and tail for your Paper Pet, or colour and cut it from the template!



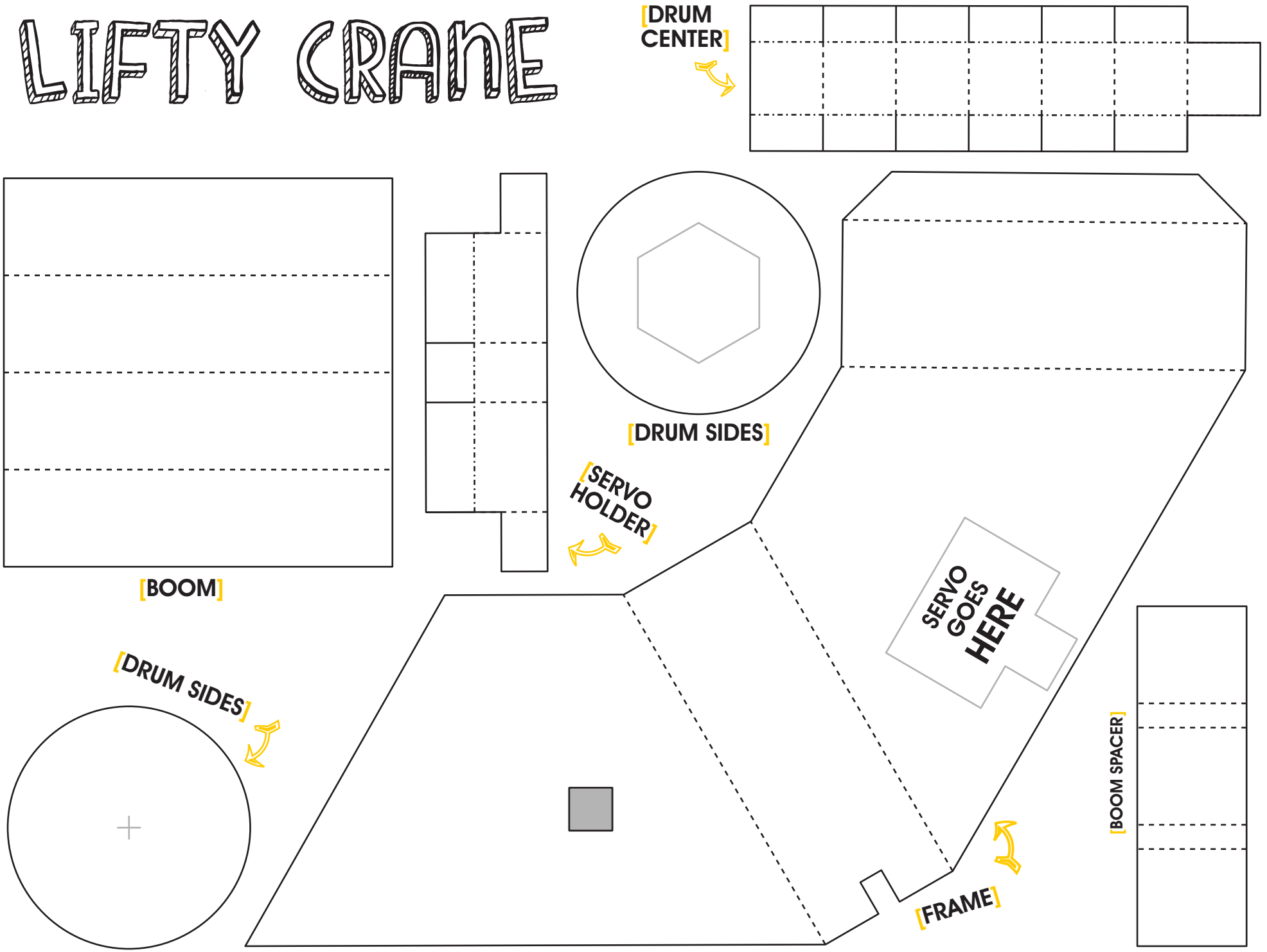


Draw your own animal's face and tail!

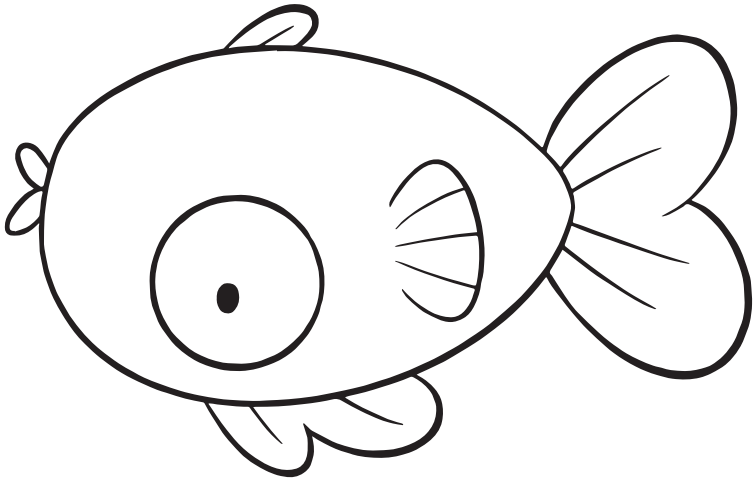


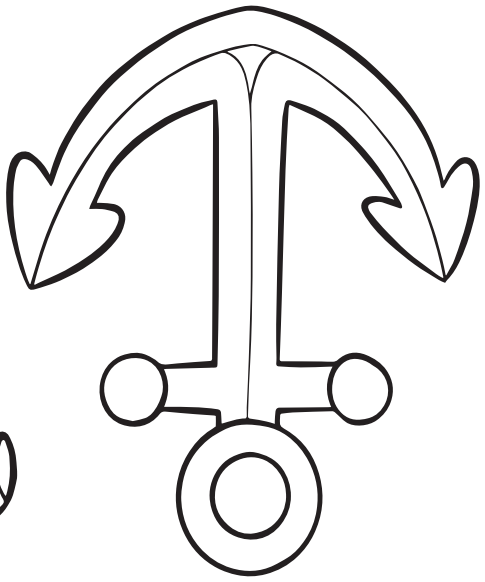
PAPER PET

LIFTY CRANE


[DRUM CENTER]
[BOOM]
[DRUM SIDES]
[SERVO HOLDER]
[DRUM SIDES]
SERVO GOES HERE
[FRAME]
[BOOM SPACER]

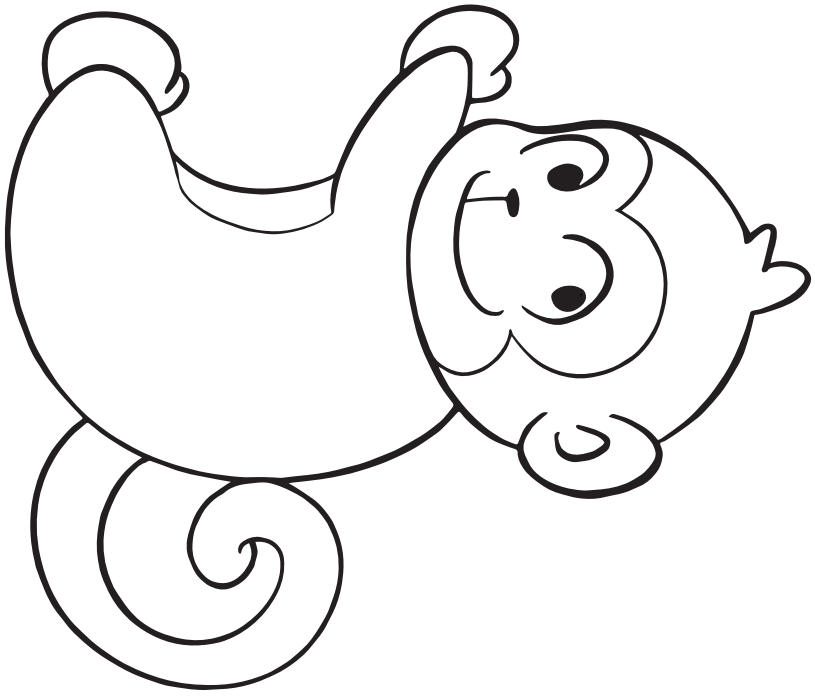
LIFTY CRANE





What is your crane lifting? Draw it here, then cut it out and attach it!

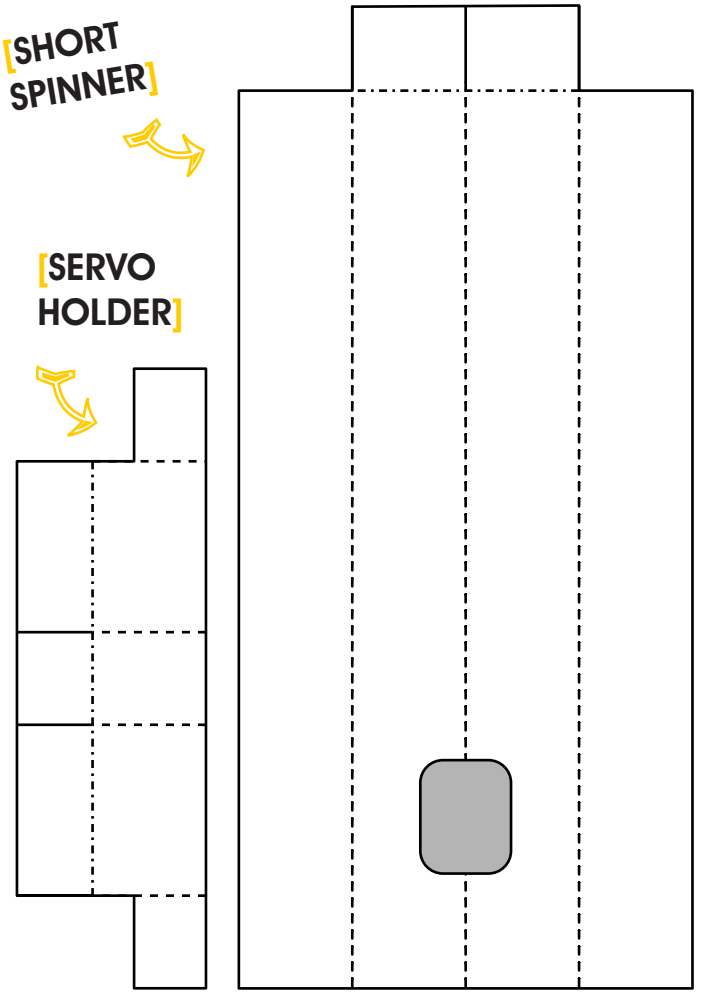
Here's some other things you can attach to the Lifty Crane



SPINNY BOX

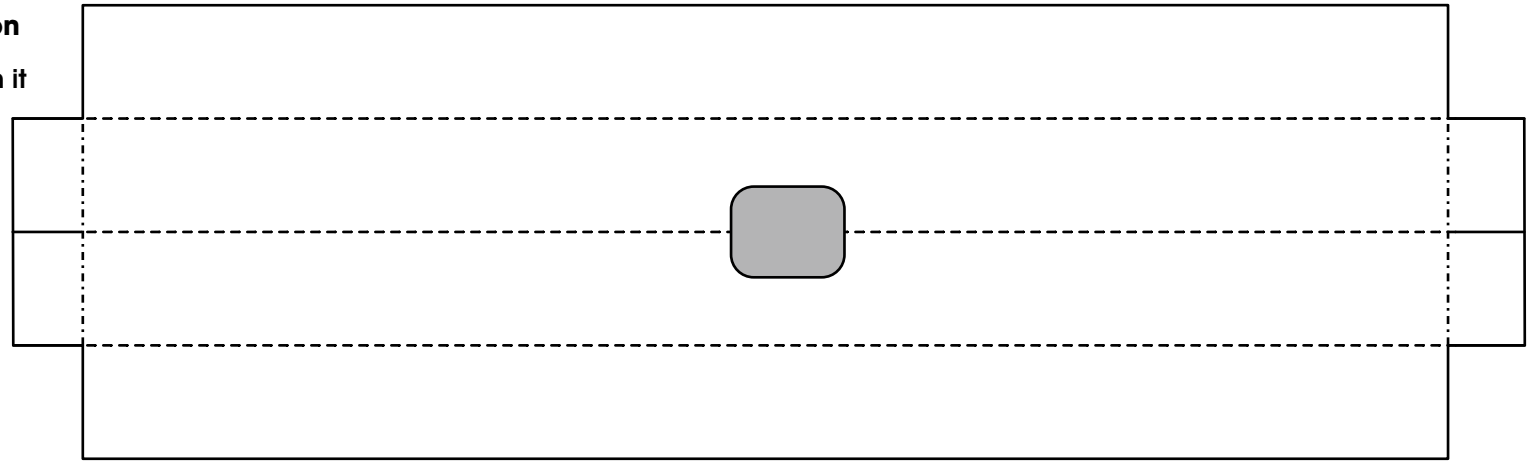
[SHORT SPINNER]

[SERVO HOLDER]



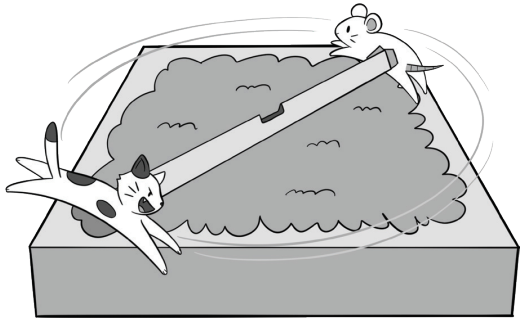
What will be spinning on your box? Draw it here, then cut it out and attach it to the short or the long spinner!

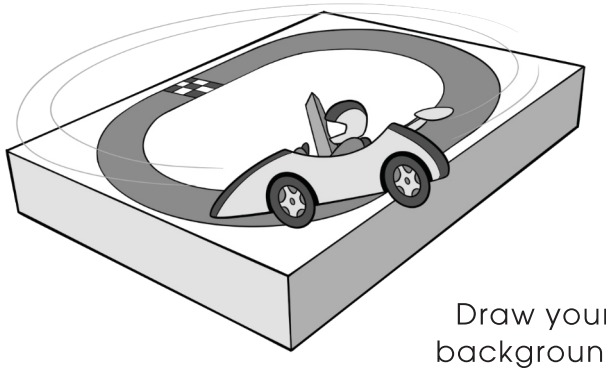
[LONG SPINNER]



SPINNY BOX

What does your spinny box look like? Here are some examples for inspiration!





Draw your own background here then cut it out and glue it to the top of the box