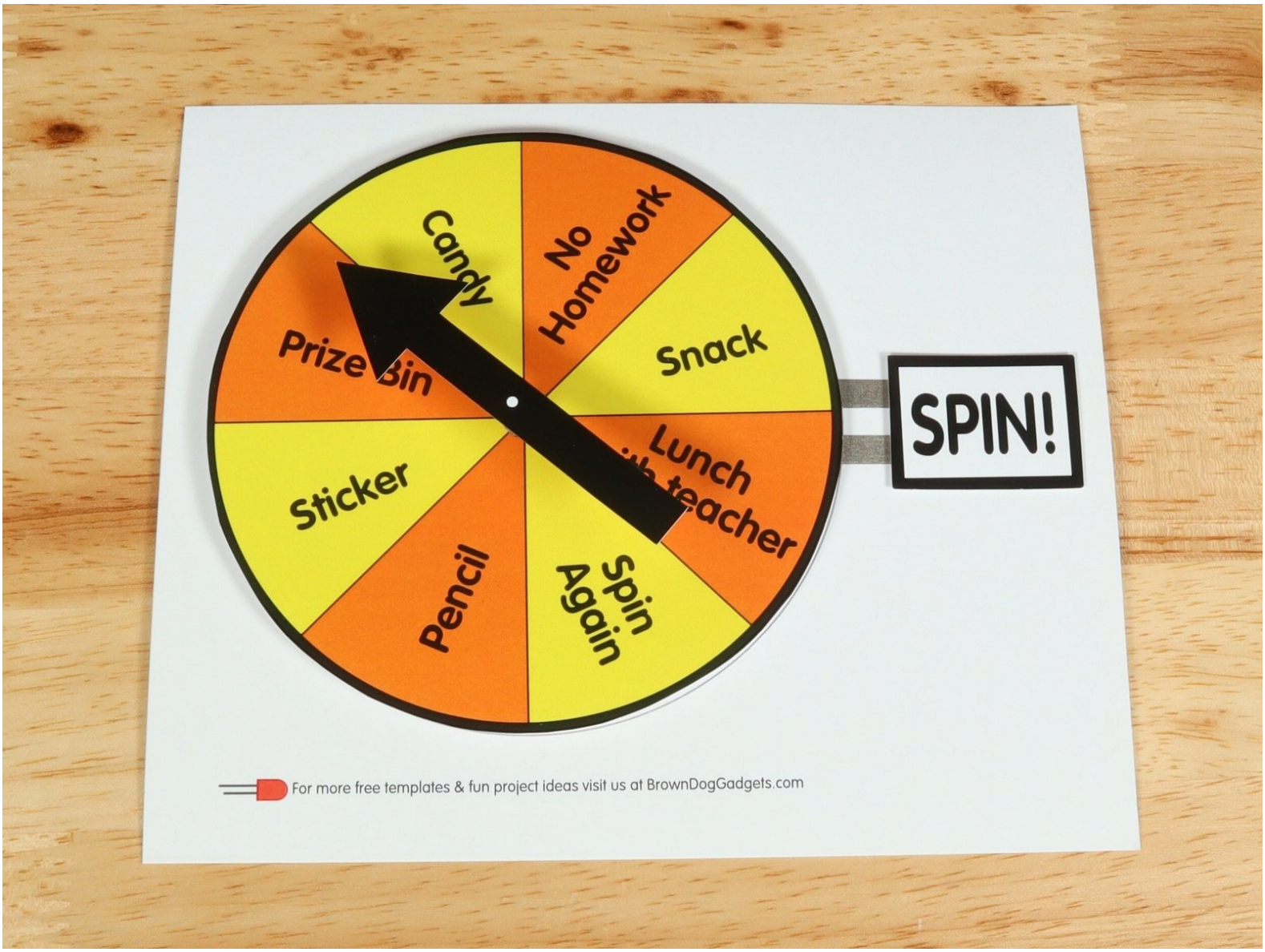
Prize Wheel

Create this Prize Wheel to use in the classroom.

Written By: Amanda Etim



INTRODUCTION

Create this Prize Wheel to use as an incentive in the classroom! This is a variation of the Game Spinner project.

This can be created with our **Paper Circuits Kit** and a barrel motor!

TOOLS:

- Scissors (1)
- Markers, Crayons, or Colored Pencils (1)

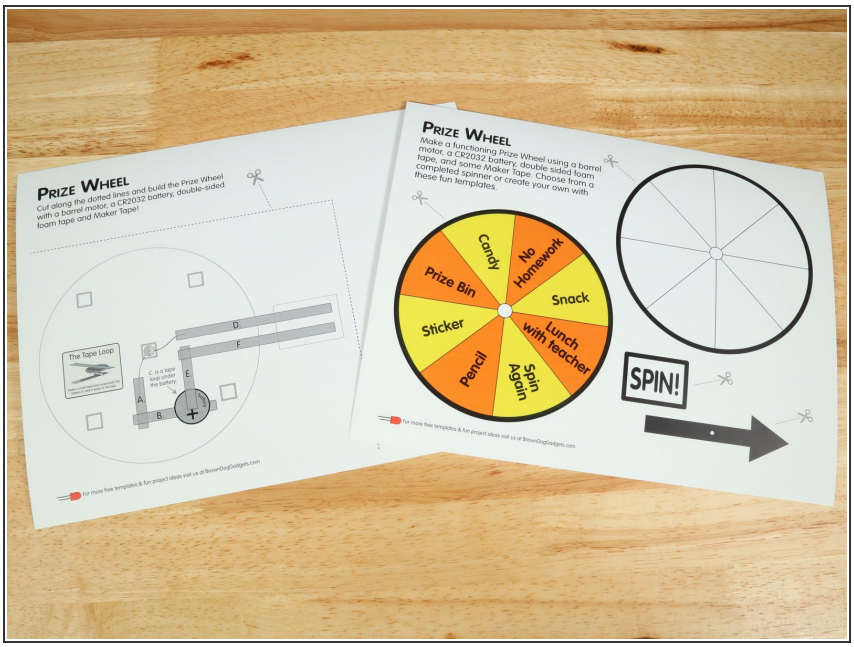
Optional

PARTS:

- Paper Circuits Kit (1)
- Vibrating Bristlebot Motor (1)
- Foam Mounting Tape (1)
- Binder Clip (1)

Optional

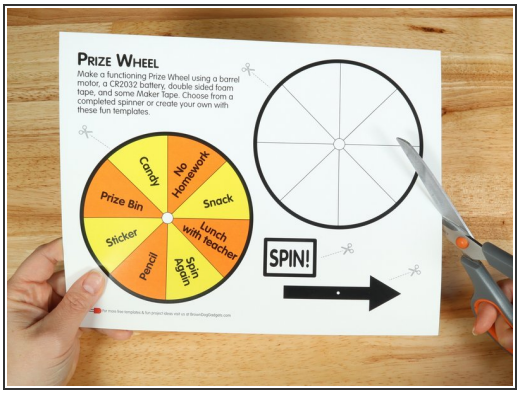
Step 1 — Print Your Template

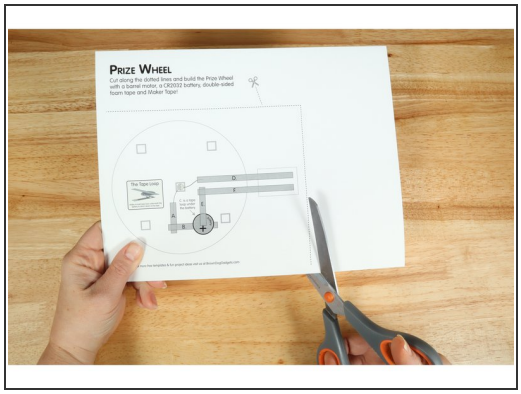


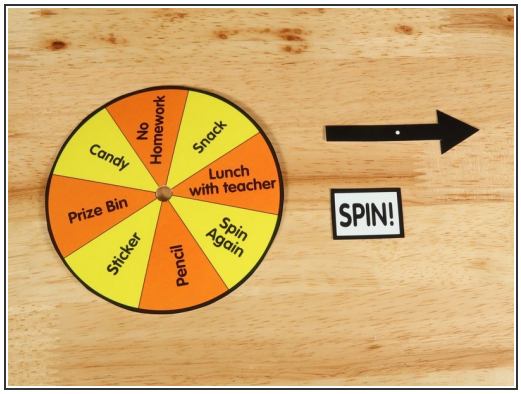
- Make sure to **print this template single-sided**. You will be making a project with two distinct layers with a small gap in between.

ⓘ We suggest printing on heavier cardstock to ensure the project stands up to the circuitry.

Step 2 — Color and Cut Template

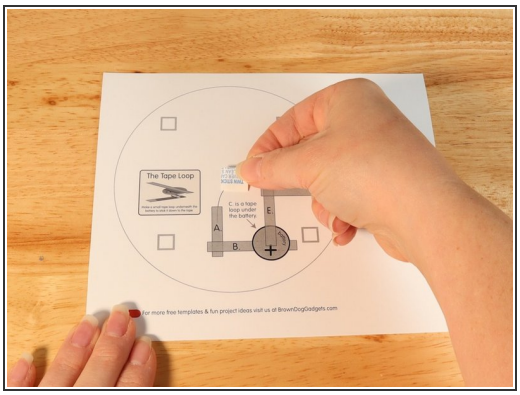
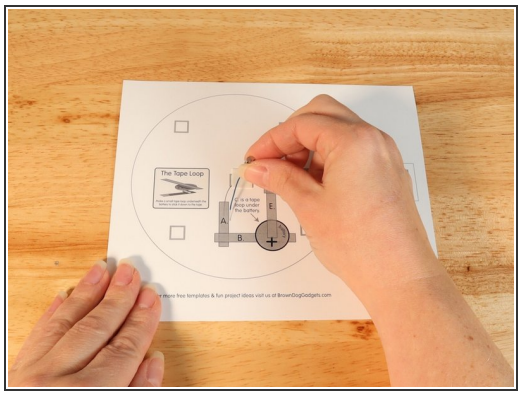
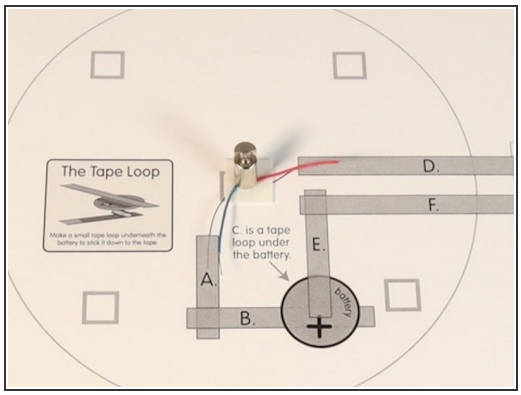






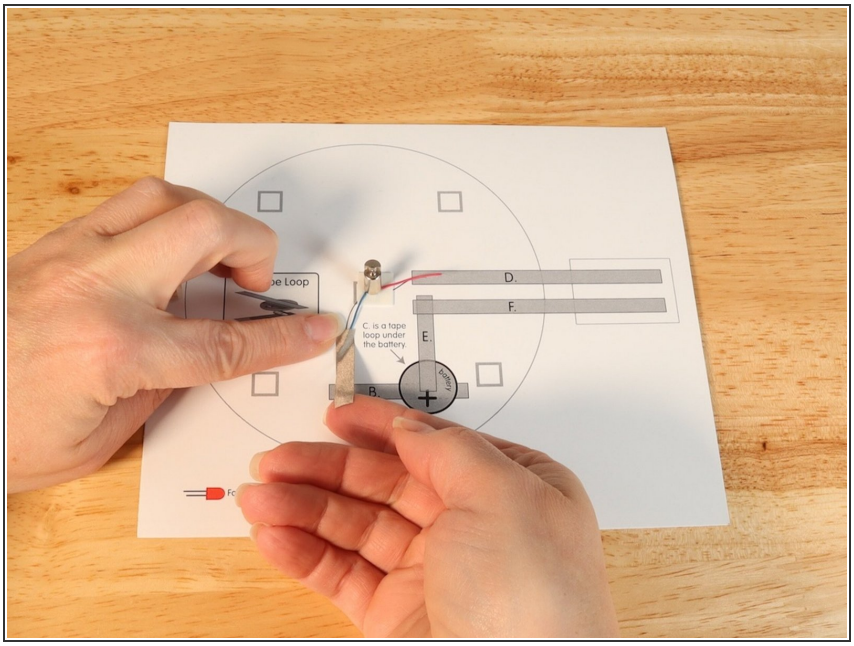
- There are two versions of the wheel. You can use the pre-made version or color and label your own.
- **Cut** out all the parts on the first page and the small hole in the middle of the wheel template.
  ⓘ We will be putting the motor through this hole in a later step.
- **Cut** out the large rectangle on the second page by cutting along the dotted line.

Step 3 — Add Motor

- **Add a piece of double-sided foam tape** to the center of the bottom layer.
- **Stick the motor to the double sided tape** making sure the back of the motor (with the wires) is stuck down to the tape and the part that spins faces upwards so it can move freely.

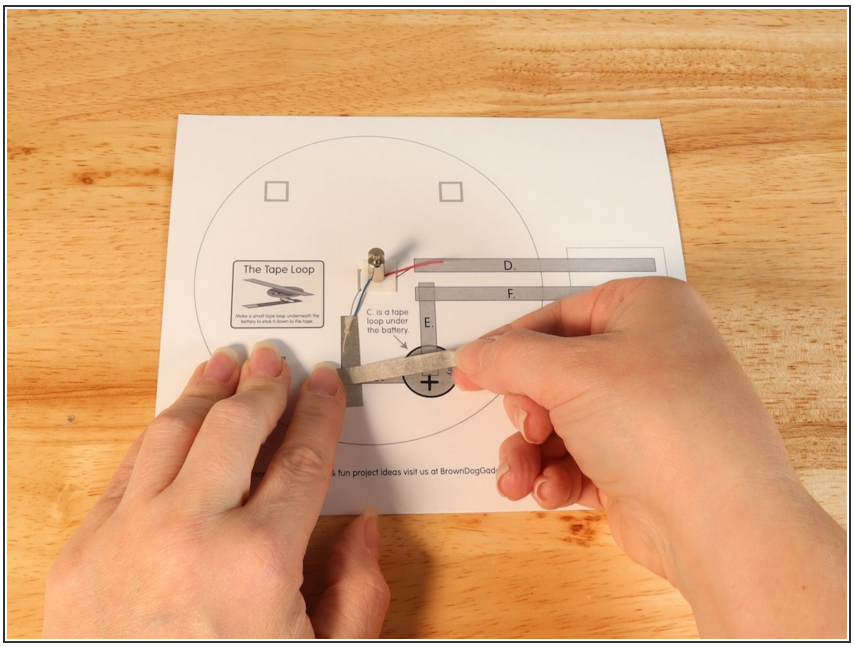
Step 4 — Add Tape Path A.



- Using Maker Tape **add Tape Path A.** pressing it down atop the blue wire.

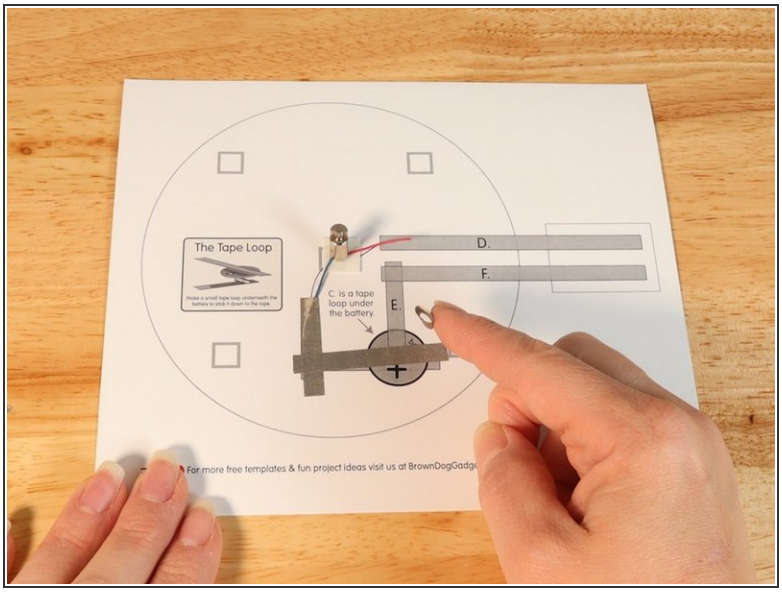
ⓘ If your wires are reversed it will just change the direction the motor rotates.

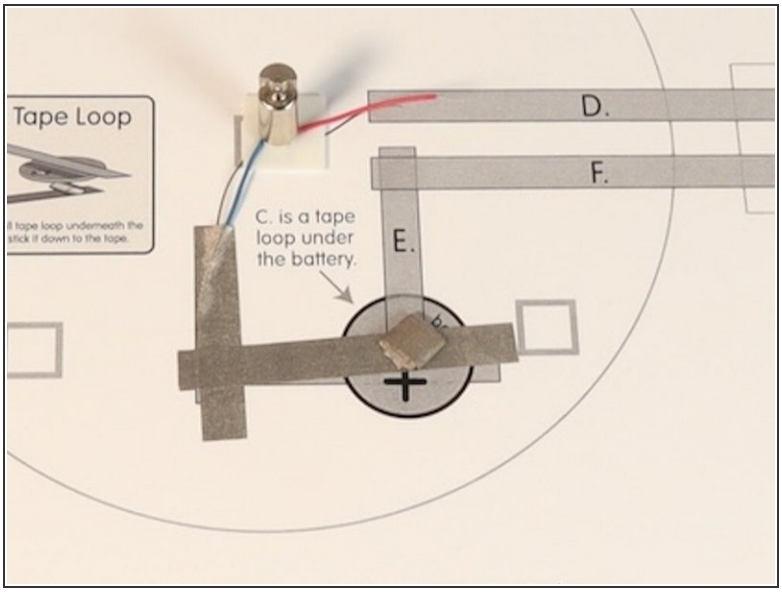
Step 5 — Add Tape Path B.



- Using Maker Tape **add Tape Path B**. This path should overlap with Tape Path A.

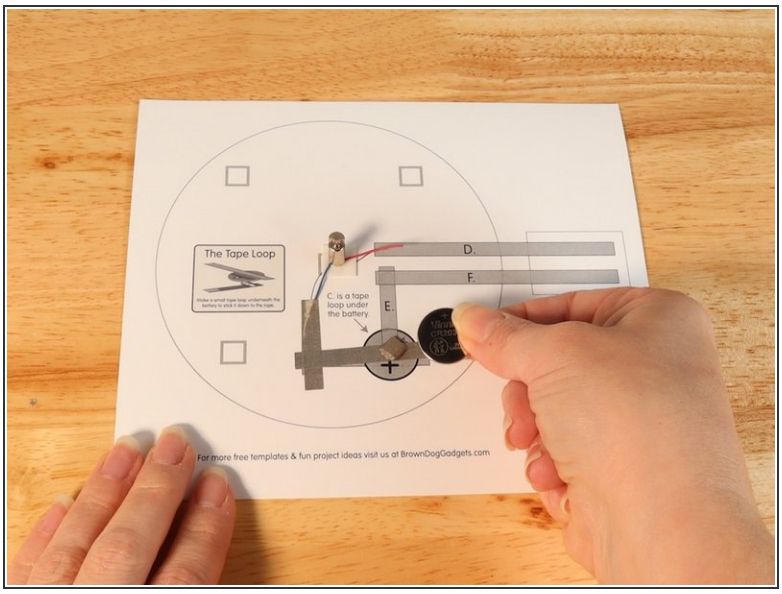
Step 6 — Add Tape Loop C.

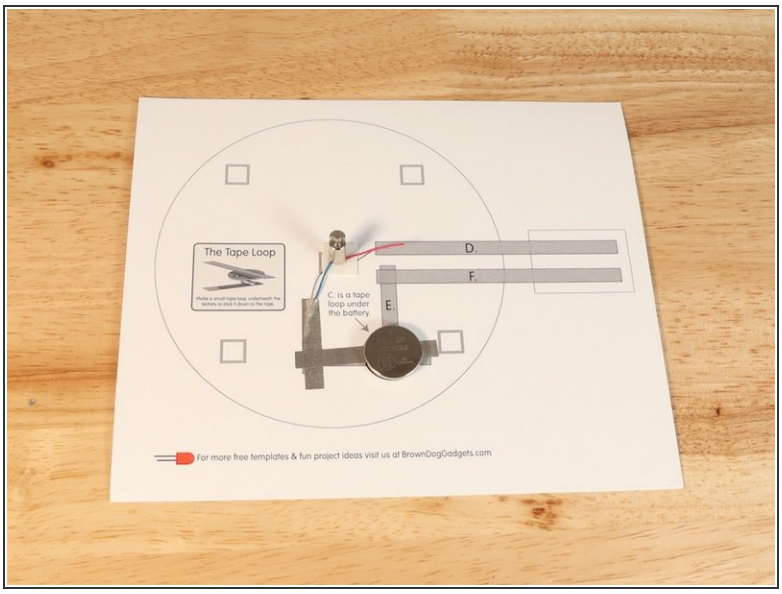




- Make a **loop of tape** (sticky side out) using a short piece of Maker Tape, and stick it atop the end of Path B.

Step 7 — Add Battery

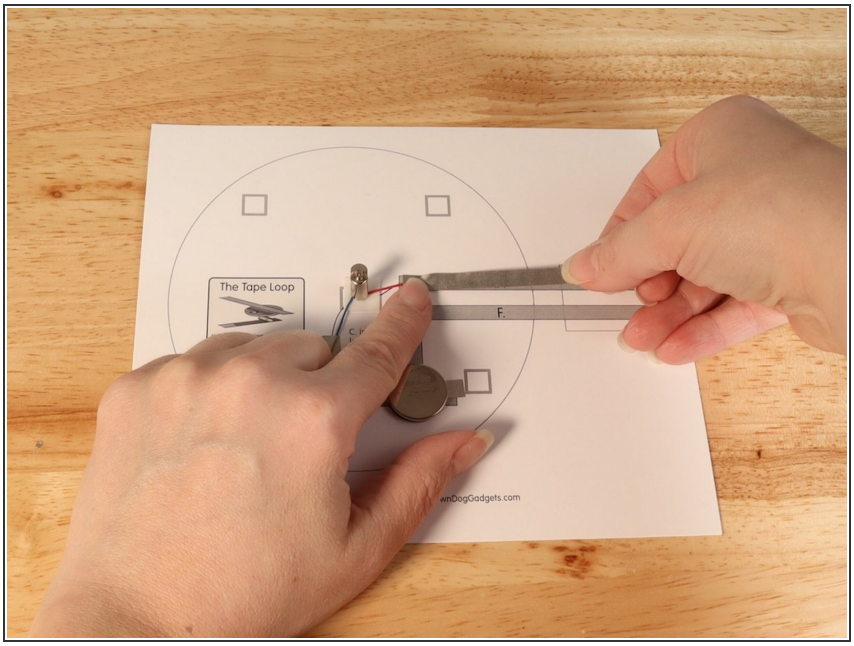




- Once your tape loop is in place you can add the **Battery** to it.

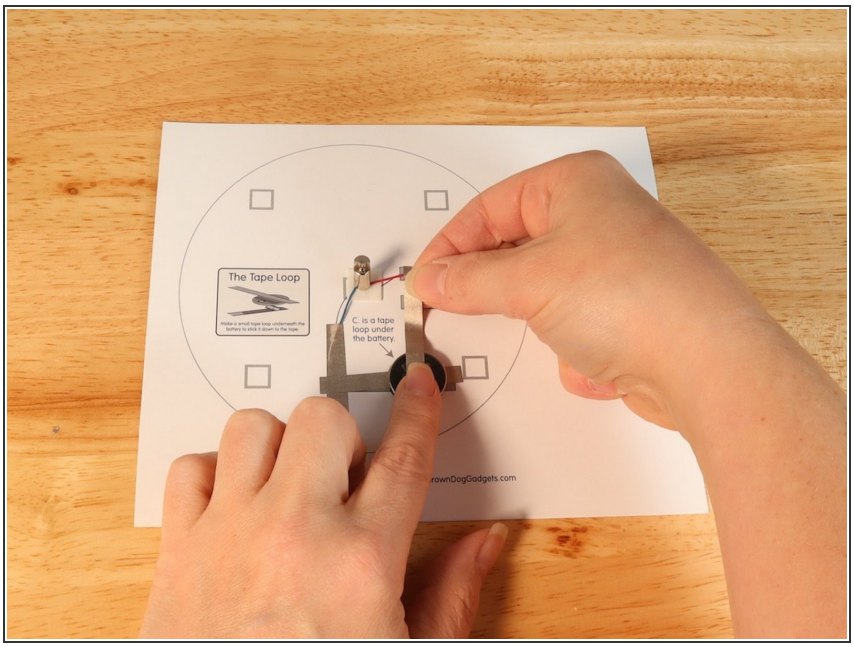
- Make sure the **Positive** side of the Battery is facing upwards, with the **Negative** side stuck down to the tape loop.

Step 8 — Add Tape Path D.



- Using Maker Tape **add Tape Path D**. pressing it down atop the red wire.

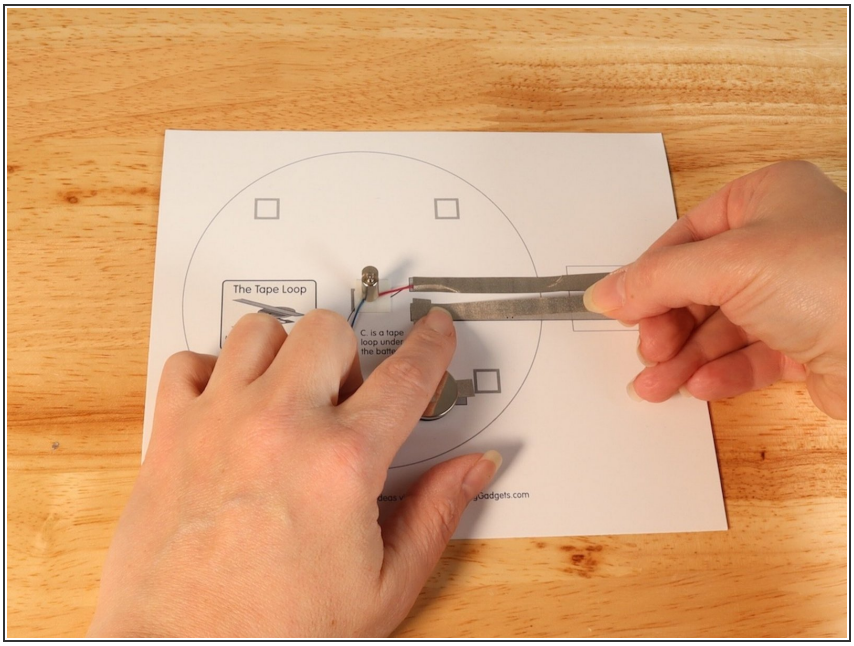
Step 9 — Add Tape Path E.



- Using Maker Tape **add Tape Path E.** to the top of the battery and onto the template.

⚠ Make sure Tape Path E. does NOT come in contact with Tape Path D.

Step 10 — Add Tape Path F.

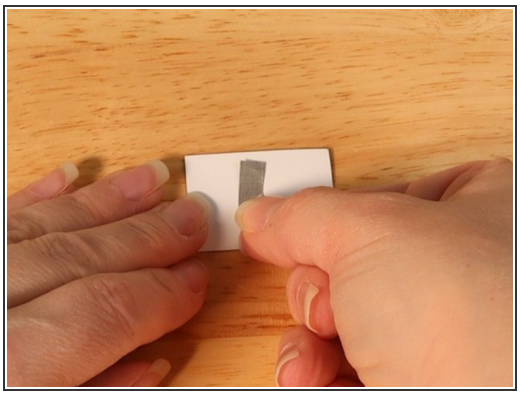
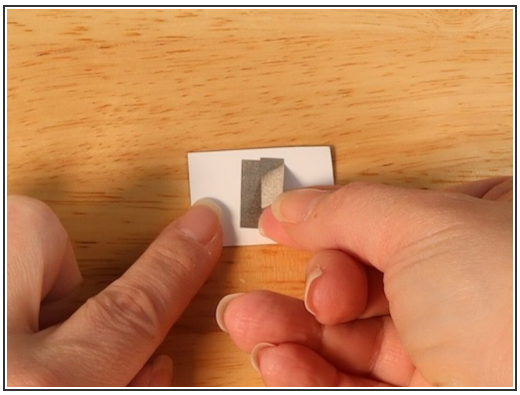


- Using Maker Tape **add Tape Path F.**

⚠ Make sure to maintain the gap between Tape Path D. and Tape Path F. This gap is needed to be able to control the circuit.

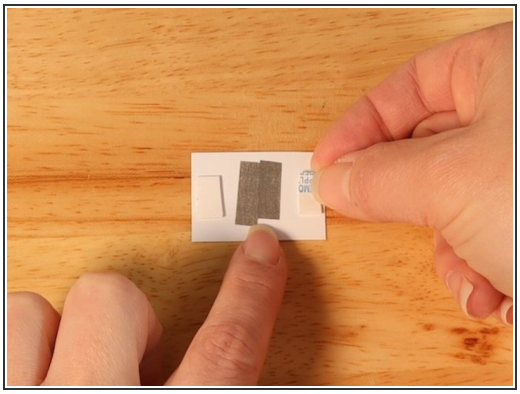
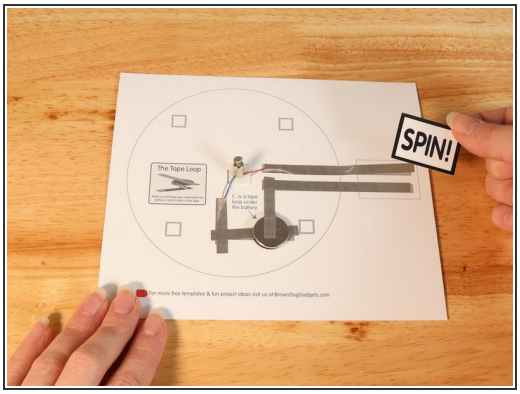
Step 11 — Create the Switch

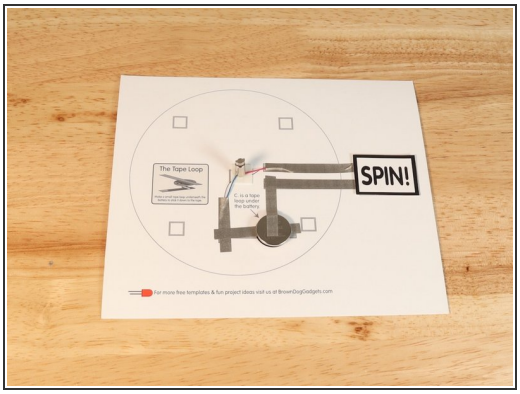


- On the back of the "SPIN!" piece, **add a couple pieces of Maker Tape** vertically in the center.
  - ⓘ These pieces of Maker Tape should be perpendicular to tape paths D. and F. to complete the circuit when pressed.

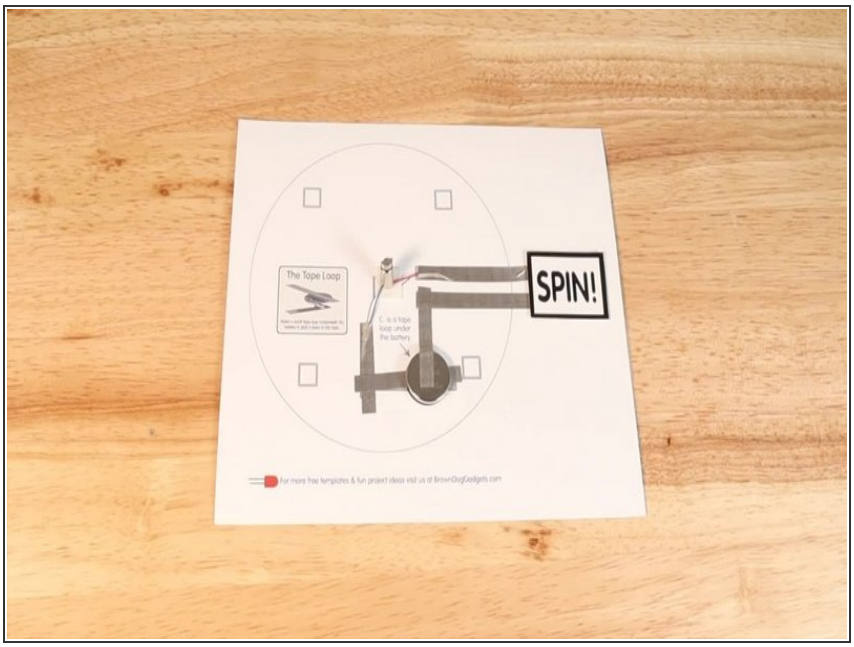
Step 12 — Add the Switch



- Add two pieces of double sided foam tape to each end of the "SPIN!" switch.
  - ⚠ These pieces of foam tape should not cover the Maker Tape added in step 11.
- **Attach the switch** to the template.

Step 13 — Test the Circuit

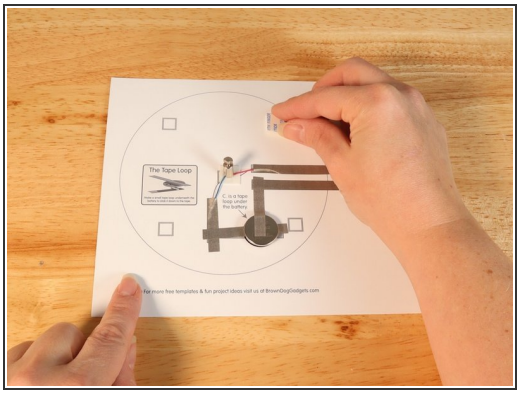


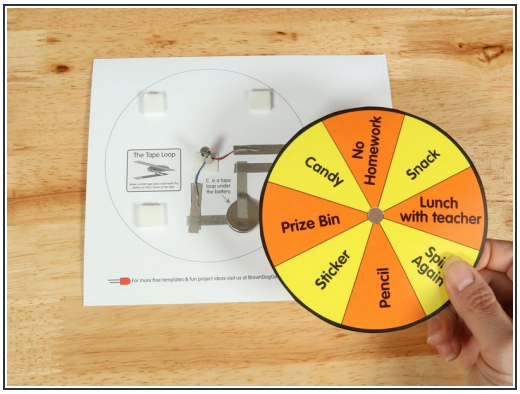
- At this point you should **test the circuit** to make sure it works. When you press down on the "SPIN!" switch the motor should spin.

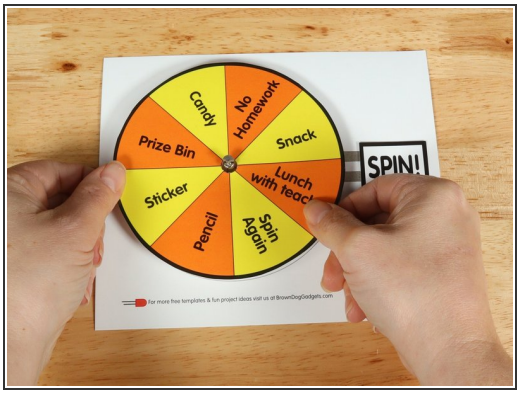
ⓘ It is easier to fix the circuit if it is not working before adding the top layer.

- If it does not spin...
  - Make sure that your switch is making contact.
  - Make sure your motor can spin freely and doesn't have anything impeding its movement.

Step 14 — Add Wheel Top





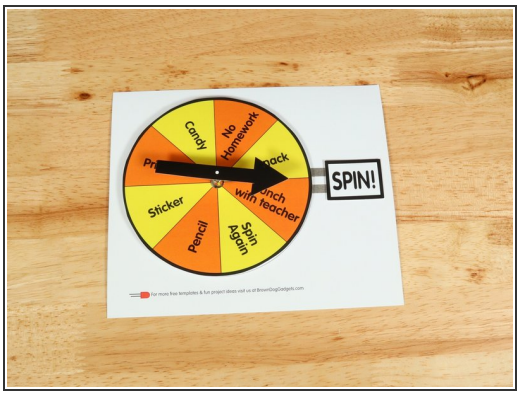


- **Add four small pieces of double-sided foam tape** to the squares around the outline of the template.
- **Place the wheel template of your choosing over the top** of the motor so the motor goes through the small hole you cut earlier.
- Press down on top of the template to adhere the top layer to the foam tape.

Step 15 — Add Spinning Arrow







- Add another square of **double-sided tape onto the shaft of the motor**, and then stick the arrow to it.

Step 16 — Test it Out!



- Press or hold the "SPIN!" switch to spin the arrow and win a prize!