

# Scribblebot

## What Do I Need?

AA battery  
Simple motor  
Craft stick  
Tape  
Plastic Cup  
Markers  
Paper



## What Do I Do?

1. First, you are going to create the motor system or the brains for the Scribblebot. Attach the motor and battery to the craft stick with tape.
2. To create the body, choose 4 markers and tape them onto the cup with the tips pointing down. You want your robot to stand upright by itself.
3. Now, tape the motor onto the body. Remove the caps of the markers and set the Scribblebot on paper.
4. Connect the wires of the motor to the battery using tape, so that the motor starts running. You need to off-set the balance of the cup by adding a clothespin to the end of the motor.
5. The Scribblebot should move around to create a unique pattern on the paper.



## Now Try This!

Once you have a Scribblebot that can draw, try changing variables to create different works of art. For example, move the location or orientation of the motor system or change the amount of markers. You could also try adding weight to different parts of your Scribblebot to change its movements.

## What's Going On?

An **electrical circuit** is created when you attach the wires of the motor to both ends of the battery. This closed path allows the current to continually flow, which keeps your motor running.

In order to make your robot scribble, you must investigate **unbalanced forces**. If the clothespin (propeller) is perfectly balanced, the robot won't move. You need to offset the forces to start the motion.