



# ELECTRICAL ENGINEERING | WIGGLEBOT

## Description

SKILL LEVEL: ADVANCED

**In this craft, you will be using principles of electrical engineering to make your very own wigglebot that draws pictures!** This activity will work great when done either in groups or as a class. Teacher or adult supervision may be required. Kids can also decorate their wigglebots using googly eyes and markers.

**How does it work?** The wigglebot is able to shake because its weight is not distributed evenly, making the wigglebot constantly off-balance. Adding the clothespin and popsicle sticks to the motor keeps it unbalanced and makes the wigglebot wobble even more, helping it create awesome art!



## Materials Needed

- Plastic solo cup
- Duct tape
- 3 popsicle sticks
- 3 markers
- 2 AAA batteries
- 1.5V AAA Battery holder case box
- 1.5-3V 10000-26000 RPM electric micromotor
- Clothespin



## Directions

1. Secure battery case to bottom of solo cup with duct tape; offset the case to one side
2. Attach the battery case wires to the motor and tape the motor next to the battery case
3. Stack three popsicle sticks on top of each other and tape together; tape the clothespin to the top
4. Tape the markers to the outside of the cup
5. Clip the clothespin to the motor shaft and add the batteries



[Video Instructions](#)

# Supply Links

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1.5 V AAA battery holder case box:

[https://www.amazon.com/gp/product/B07F3YKGPD/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s00?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B07F3YKGPD/ref=ppx_yo_dt_b_asin_title_o02_s00?ie=UTF8&psc=1)

1.5-3V electric micromotor:

[https://www.amazon.com/gp/product/B00QC2H9A4/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o04\\_s00?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B00QC2H9A4/ref=ppx_yo_dt_b_asin_title_o04_s00?ie=UTF8&psc=1)

# Troubleshooting

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## **Motor shaft won't spin?**

When connecting the wires to the motor, make sure that the metal part of the wire is touching the motor instead of the wire covering. Also, when taping the motor onto the cup, don't let the tape touch the motor shaft- this will stop it from spinning.

## **Clothespin and popsicle sticks won't spin?**

When attaching the clothespin to the rotor of the motor, make sure the popsicle sticks can spin freely without hitting the cup, a piece of tape, or the battery pack.

## **Wigglebot not wobbling correctly?**

Make sure that all three markers are the same length. The wigglebot should be able to stand on its marker legs without falling over.