Building an Art Bot

Description
The Art Bot is an activity that allows students to build a robot that can draw by itself. This activity teaches students how a basic electrical circuit is built. **Bonus:** Most of the supplies can be recycled from other materials.

### Supplies

- 9-volt Battery
- Battery Connector
- Plastic Cup
- Direct Current (DC) Motor with positive and negative wires connected
- 3 Tongue Compressors
- 14 Strips of Electrical Tape
- Pair of Scissors
- Card Stock Paper
- 3 Washable Markers (Dark works best)
- Wire Stripper
- Cork
- Hot Glue Gun & Sticks
- Googly eyes, fuzzy pipe cleaners or cotton balls
- 2 Sheets Card Stock Paper
- Decorations

### Activity Steps

1. Use electrical tape and **tape** the 3 tongue compressors to the cork.

2. Take the **cork** and gently place the cork on top of the direct current (DC) motor with positive and negative wires connected, using the prong on top of the motor to make a hole on the cork to connect the cork and motor together. Remove the cork and it will be placed back on top of the motor at a later step.

3. **Cut a hole** on the top of the cup for the wires of your DC motor to fit through.

4. Cut two 1/2-inch slits on cup’s side.

5. **Tape** the 9-volt battery to the inside of the cup with 2 strips of tape on the opposite side of the two slits on the cup.

6. Using the **wire stripper** on the DC motor and the battery connector, crimp each wire to remove the plastic covering, leaving only the copper wires.

7. In a triangular shape, **tape** one marker to each side of the cup.

8. **Twist** the DC motor wires and battery connector wires together.

9. Once wires are twisted, **tape** them together with electrical tape.

10. Feed the battery connector through the cup gently, with the DC motor sitting on top.

11. **Test your connection.**

12. Place hot glue on the cup or the motor to glue the motor to the top of the cup.

13. **Decorate** the Art Bot with googly eyes, pipe cleaners for arms and a cotton ball for the nose.

14. **Place** a sheet of card stock paper under the Art Bot.

15. **Connect** the battery connector to the battery, matching the positive and negative on the connector and battery. Then, **place** the Art Bot onto the card stock paper.

**OPTIONAL STEP:** Add more weight to the sides of the cup with magnets to steady its drawing, as well as make it draw in different directions.

**Enjoy watching your Art Bot draw by itself. Watch the Video Tutorial at 4-H.org/ArtBot**

To view related curriculum, visit Shop4-H.org/bots.