THE PLAY GROUND

Art Bots

CONTENT AREA

Content/Theme Week: Week 3/Coding & Tech

Grade Levels: All Ages

Time Needed: 1-2 hours

MATERIALS

Electronic toothbrush

Battery pack

2 AA batteries

Paper cup

3-4 skinny markers

Tape (scotch tape, duck tape, and/or washi tape)

Glue stick

Pipe cleaners

Googly eyes

Sequins

Colored popsicle sticks

Colored pom poms

Yarn

Scissors

Large paper (for testing)

PROCEDURE

1. Take apart your electric toothbrush. To do this, you may need adult supervision/help to cut it apart. When the bottom is popped off, inside you should see a small plastic piece, a spring, and a motor. Take out the plastic piece and spring, these are not necessarily needed. Save the motor! This is how your art bot will move.
    - Take the toothbrush out of the package.
    - Take off the bottom colored part to expose the inside of the toothbrush.
    - Take out the battery. Use scissors/pliers to pull out the plastic battery holder.
    - Once the motor is exposed, try to pull the motor out by the spring (the spring will not be used, so it is fine if it is damaged).
    - If needed, snap off the head of the toothbrush, it can be easier to hold to get the motor out and possibly push through the hole it creates in the top.

2 **The Challenge:** to create a robot that draws on its own using the materials provided.

3 Take your battery pack and put both AA batteries inside.

4 The motor (from the toothbrush) will be connected to the battery pack.

- To do this, the 2 wires from the battery pack will need to be connected to the 2 notches on the motor.
- The wires may need to be wrapped around the notches, or taped on to stay secure.
- Turn on the battery pack - the motor should start to spin. If it does not spin, the wires are not properly connected.

5 Now that the motor is working, it's time to start assembling your robot!

6 Take your paper cup and determine where you want to attach your motor and battery pack.

- Is the paper cup right side up or upside down?
- Is the motor on the top and the battery pack inside the cup?

7 Once the motor and battery pack have been attached, it's time to get your Art Bot working!

8 Let's remember, the point of this project is to create a robot that draws when it moves.

9 To make it draw, we'll need to attach our markers to the cup. This can be done in many different ways, it's up to you!

10 When you have attached your markers, test it out! Using a large piece of paper, turn your battery pack on and set the cup on the paper.

11 If it draws and works how you want it to, start to decorate!

12 If it doesn't draw or work how you want it to, feel free to make some changes (and keep testing along the way).