

Teacher's Guide

Bristlebots

Overview

Build a simple robot with the head of a toothbrush.

Setup

- For young students, cut the heads off toothbrushes in advance.
- To save time during the activity, cut small squares of double-sided foam tape in advance.

Activity

- 1 Pull the small bits of insulation off the ends of the battery wires.
- 2 Attach battery to toothbrush head with double-sided foam tape.
- 3 Peel paper backing off motor and stick to toothbrush head.
- 4 Twist together motor and battery wires.
- 5 Put your robot down and watch it go!
- 6 Untwist one pair of wires to turn the robot off when not in use.
- 7 *Optional:* decorate your Bristlebot by adding googly eyes, pipe cleaners, etc.

Troubleshooting

- **Robot falls over:** make sure the battery and motor are centered on the toothbrush head. Let the robot run continuously for 5-10 minutes, and it should begin to slow down as the battery drains.
- **Robot stops moving suddenly:** The motor's vibrations can cause the wires to come loose. Make sure they are still twisted together. Also make sure the exposed metal parts of the wires do not touch each other. This will create a short circuit and stop the motor.

