

Cost:

- Approximately \$5 -10 each

Difficulty:

- Easy, but the parts are small and can pose a possible choking hazard if swallowed.

Overview:

Artbots are an inexpensive vibrobots (vibrating robot) that can be made from components found laying around the home or easily purchased online. Constructing an Artbot takes a few seconds and you can make them in a variety of shapes, sizes, colours, and configurations.

Materials:

- Paper Cup
- Pager/Vibrating Motor
- 'Coin' Battery
- Markers
- Foam Tape or Glue
- 'Goggly' Eyes
- Pipe Cleaners

Resources:

- Robotshop.ca
 - <http://www.robotshop.com/ca/productinfo.aspx?pc=RB-Sbo-46&lang=en-US>
- Bristlebots.org
- Instructables.com
- <http://addison-electronique.com/>
- <http://www.wired.com/geekdad/>
- http://www.wired.com/geekdad/2012/05/ff_artbot/
- <http://tinkering.exploratorium.edu/scribbling-machines/>

Outcomes:

- ArtBots can be used within an introductory Design, Physics, Technology lessons-- they teach kids about electricity, circuits, safety, and troubleshooting.
- ArtBots are most interesting when they are used in the creation of art-- they can be dipped into paint and used to create abstract/non-representational images
- If you just want to have fun-- they can Race and even Wrestle!
- ArtBots easily be integrated into a student or teacher-lead lesson or activity.

Procedure:

- Tape at least three markers to your paper cups (make sure it can stand on its own)
- Tape the motor to a marker, or if you prefer to the center of the cup (try both).
- Tape the motor's wires to the battery
- Tape the battery to the top of the cup
- Repeat steps 2-4 as needed
- Remove the markers' caps and place the cup onto a canvas or clean piece of paper

- Let the art happen
 - Try multiple Artbots on a single artwork

Further Activities or Questioning:

- Students will try to have you build or 'fix' their ArtBots if/when they fail. The most important part about introducing this lesson is to empower your students to really observe their robots. Then using directed questioning help them to solve their own design-problems.
- Have students join their ArtBots together. How does this change their art?
- *"Engage students in a discussion of their procedure and techniques, to explore difficulties encountered, as well as ingenious solutions."* -- from <http://teachers.egfi-k12.org/activity-do-it-yourself-bristlebot/>