



MaKey MaKey: Musical Markers

Create sounds whilst drawing with Magic Markers.

Project Type: Creative, Engineering, Game

Group/Individual: Individual or pairs

Lesson Plan Audience: Maker Mentor

Time: <1 hour

Hard Skills: Understanding the Makey Makey, drawing, simple circuitry, and interactive art.

Soft Skills: Creative thinking, design, collaboration

Ideal # of Participants: Can be used with large groups, it can get loud depending on the speaker setup.

Age Group: age 6+

Difficulties/Tips:

This project involves electronics and water. Be sure to use extra alligator clips to keep the MaKey MaKey and Laptop a safe distance from the spray bottle and wet surfaces. I'd suggest creating a "water-free" zone and taping the MaKey MaKey down to the table.

The end cap of a Magic Marker tends to be pretty hard to remove with pliers or scissors. An alternate method is to get a cordless drill and drill a hole instead of prying off the cap. It makes the project more accessible. Use a clamp to hold the markers.

On the software end of things you can use anything really. I prefer Soundplant(<http://soundplant.org/>) over scratch based instruments or other programs as you have more control over the sound effects and how they work.

Materials:

Magic Markers	Pliers and Wire Cutters
Wire and Alligator Clips	Paper
MaKey MaKey	Spray Bottle for Water
Laptop	Soundplant (software)
Plastic Table Cover or large Tupperware tub top	Cordless drill/bit and Clamp (optional)

Download Soundplant mac app here: <http://soundplant.org/>

Also use the MaKey MaKey Quick Start as a reference for more instruments:

<http://makeymakey.com/howto.php#software>

Steps:

1. Set-up plastic table cover and fill spray bottle with water.
2. Pull out the Makey Makey. Open Soundplant on laptop. (Download it if you already haven't)
Explain to participants what it is and how the Makey Makey works.
Explain how you will all be drawing and making noise, creating new feedback, etc.
3. Pop off the endcap of a Magic Marker OR Drill through the cap to expose the absorbent ink core.
4. Insert a wire into the core of the Magic Marker from the open cap OR through the hole.
5. Either close the cap on the wire OR use hot glue to "pot"(seal) the wire in place so moisture stays in.
6. Put a sheet of paper on the table and spray with water.
7. Connect one alligator clip to the Space bar on the Makey Makey and connect it to the marker.
8. Connect the other alligator clip to the Earth on the Makey Makey and connect it to the paper.
9. Boot up Soundplant or your digital instrument du jour.
10. Set a note or sound to the Space key on the computer.
11. Begin drawing on paper! If you don't hear any sound draw dots, check your volume cable connections.
12. Continue to make and connect more markers.
13. Play with the effects on Soundplant!



A Musical Markers Set-up



Drilled cap marker being potted

Sources/Inspiration: <http://bit.ly/musicalmarkers>