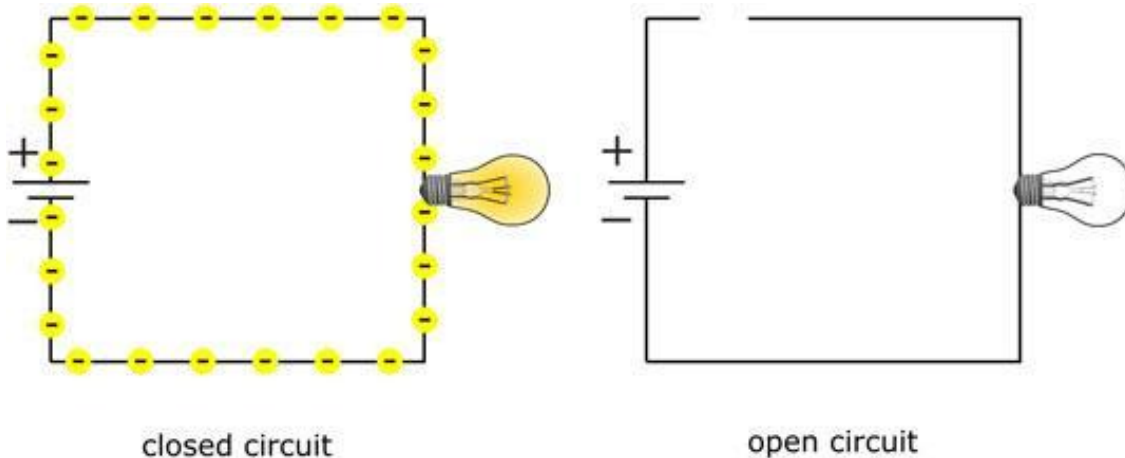


Makey Makey

TIME	TASK	DESCRIPTION	NEEDS
5 min	Introduction	The teacher will review the lesson and introduce the directions.	- have handout ready
5 min	What is a Circuit	Have the students share what they think a circuit is	- have handout ready with materials for demonstration
5 min	Reading Circuit	Have the students read this out loud. Be sure to all the students know what an Open Circuit, Closed Circuit, and a logic board	- have handout ready
10 min	What is a Makey Makey	Introduce the idea of a Makey Makey. It is a simple circuit board that allows you to control the computer	- have handout ready with materials for demonstration
20 min	Building Our Makey Makey Instrument	Follow the directions and build a Makey Makey	- have handout ready
15 min	Building Our Makey Makey Game	Follow the directions and build a Makey Makey	- have handout ready with materials for demonstration
10 min	Video Recording	The students will record a video explaining how a Makey Makey works and will include words like Open Circuit, Closed Circuit, and Logic Board	
5 min	Clean Up	Be sure the cables are folded neatly and put back into the box perfectly.	

What is a Closed/ Open Circuit?

You need a closed path, or *closed circuit*, to get electric current to flow. If there's a break anywhere in the path where electricity travels, you have an **open circuit**, and the current stops flowing — and the metal atoms in the wire quickly settle down to a peaceful, electrically neutral existence.



A closed circuit allows current to flow, but an open circuit leaves electrons stranded.

Picture a gallon of water flowing through an open pipe. The water will flow for a short time but then stop when all the water exits the pipe. If you pump water through a closed pipe system, the water will continue to flow as long as you keep forcing it to move.

Open circuits are often created by design. For instance, a simple light switch opens and closes the circuit that connects a light to a power source. When you build a circuit, it's a good idea to disconnect the battery or other power source when the circuit is not in use. Technically, that's creating an open circuit.

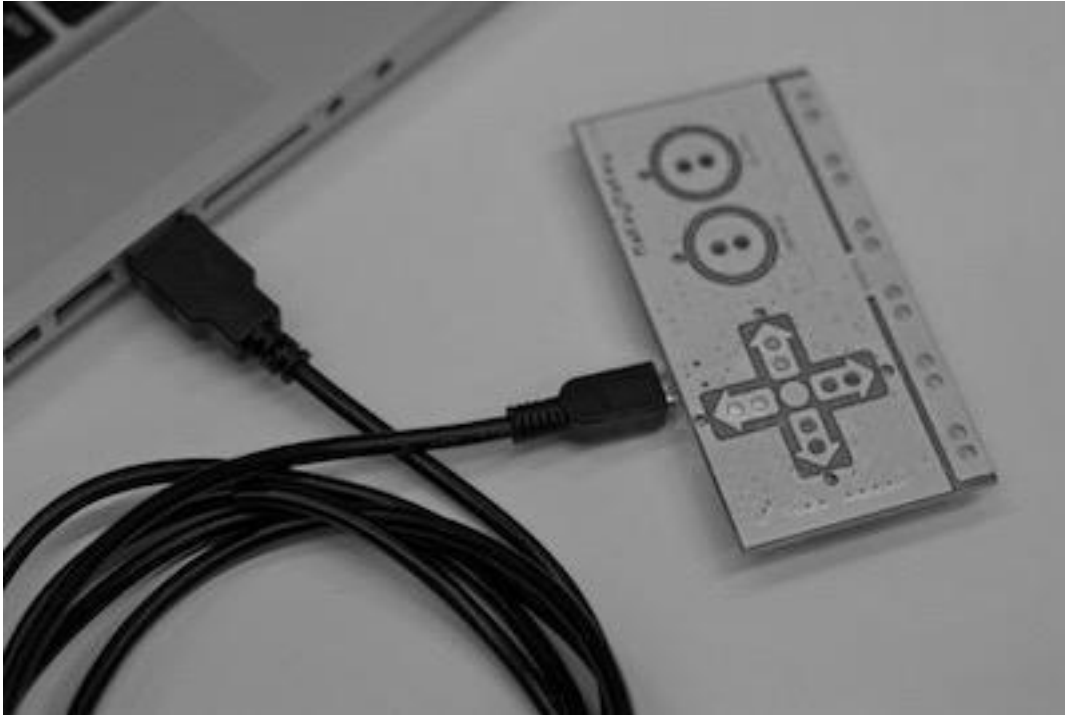
Computer use **logic boards** to send messages to parts of the computer. The

Building a Makey Makey Instrument

Setup

1) Plug in USB

Small side of USB cable plugs into Makey Makey, big side plugs into computer.



2) Close Popup Window

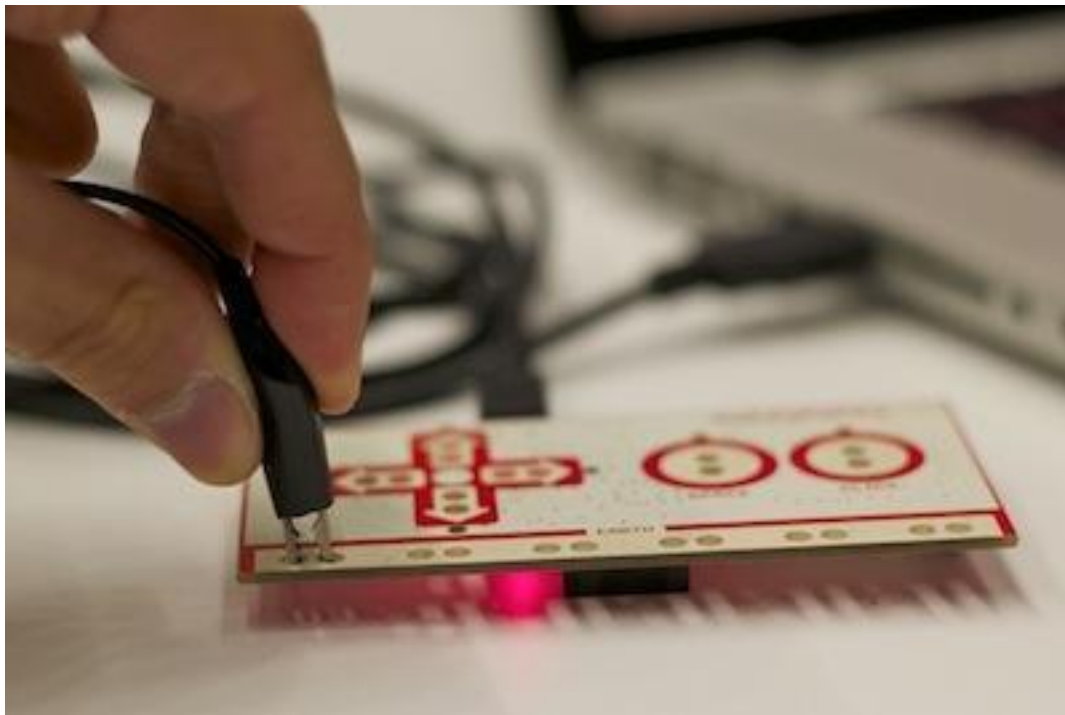
Your computer may ask you to install drivers or do other setup. You can click cancel or close the window.

3) Connect to Earth

Connect one end of an alligator clip to "Earth" on the bottom of the front side of Makey Makey.

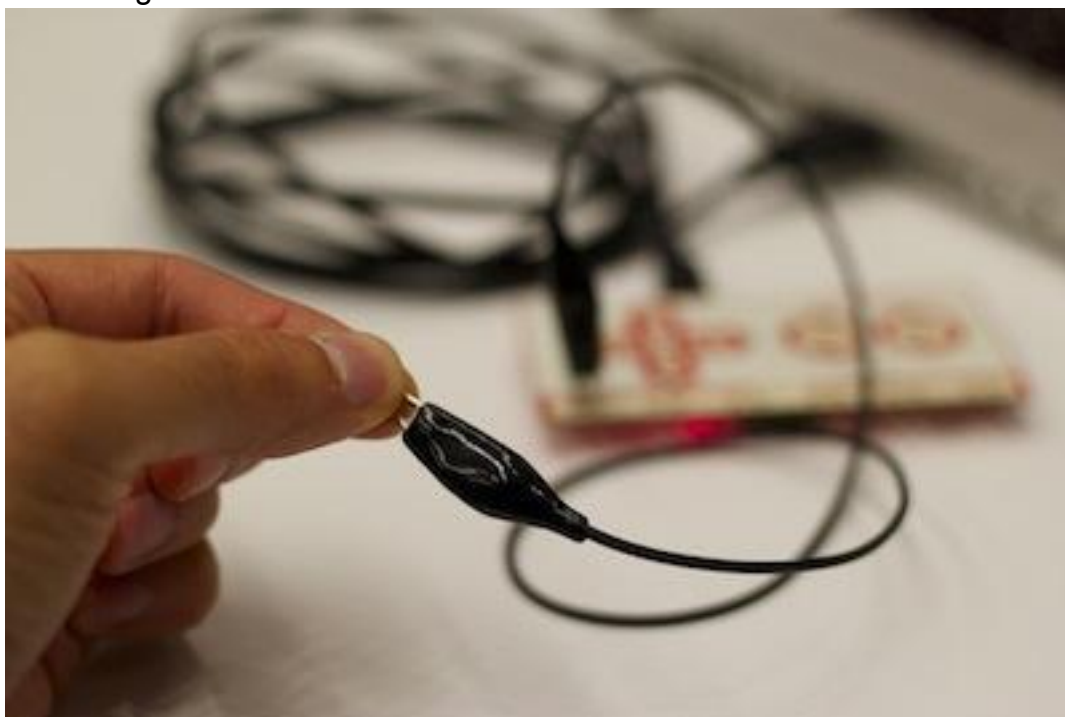
4) Connect to Earth

Connect one end of an alligator clip to "Earth" on the bottom of the front side of Makey Makey.



4) Connect to Yourself

Hold the metal part of the other end of the alligator clip between your fingers. You are now "grounded."



5) Connect to "Space" and Try It

While you're still grounded, touch the round "Space" pad on the Makey Makey. You should see a green light on the Makey Makey, and your computer will think the space bar was pressed. If you click in the text area below, you can make the cursor move. You can also complete the circuit by connecting another alligator clip to "Space."

5) Play some Makey Makey drums!

Click below to play some drum sounds using the arrow keys and space on your Makey Makey.

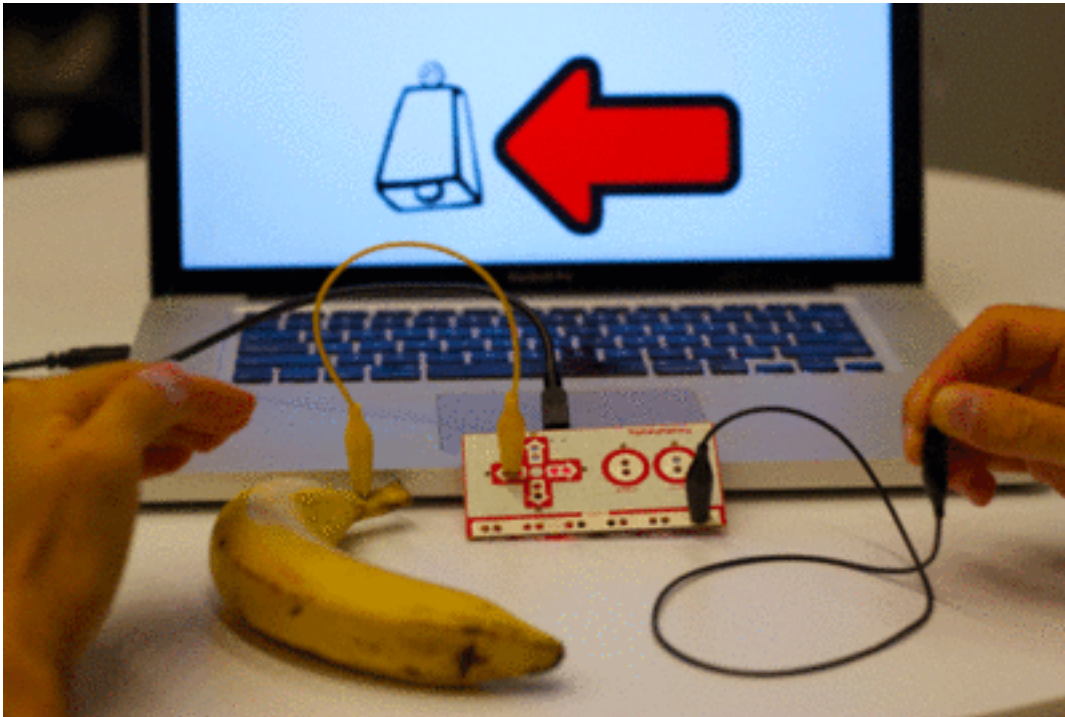
6) Connect Stuff

Go to: <http://www.makeymakey.com/apps>

Pick a instrument to play and a game to play for your demonstration

Now you can try making your own drums out of anything. How about a banana cowbell, a watermelon bass drum, or a crash cymbal sound when you high-five your friend?





Try Out Different Materials

Make anything into a key! You can make a connection through anything that's even a little bit conductive. Here are some inventions that combine conductive and non-conductive parts.

Conductive Materials

Here are a few things to try:

- Most fruits and vegetables work great.
- Lots of other foods work too. We've tried marshmallows, gummy candies, macaroni and cheese, and lots of other things.
- Plants can work too. Try some leaves or flowers, but nothing too dry.
- Play-Doh, Model Magic and other clays work very well as long as they stay moist.
- People are conductive! Connect one person to ground, and another to an input, and you can make a high-five.
- Graphite from a pencil can work. Make thick, dark lines, and be sure to draw on a smooth surface.
- Foil and other metal objects will work. Try out coins, magnets, nuts and bolts, forks and knives.

Video Recording

Directions: In the space below, you will write an explanation of how the Makey Makey works. Be sure show your viewer how the Makey Makey works. In our experiment use words like Circuit, Open Circuit, and Closed Circuit.
