LEAP

Science is Fun!
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Activity Kit

Inventing with a MaKey MaKey Microcontroller

Materials

- MaKey MaKey microcontroller with:
  - Pink Anti-Static bag
  - Small clear plastic case
- 1 6ft. USB cable
- 7 Alligator Clip Cables
- 6 Connector Wires

BOOK
- How Things Work: Electrical Gadgets

Requires a computer with internet access

Recommended for grades 3 & Up

What to know about this kit…

Would you like to control your computer by touching a banana? With a MakeyMakey you can!

Requires a computer with internet access

Makey Makey comes from the combination of "Make" and "Key" (as in a computer keyboard. You will be making a computer key. It's hard to explain a Makey Makey, so the best thing to do is go to their website, www.makeymakey.com, where you can see the Makey Makey in action. Watch the video clips, read the info, then move on to connecting this Makey Makey to your computer and inventing all sorts of unusual ways to control the computer.

The printed pages that follow include print-outs of the introductory webpage and summarize the connection information, but the best place to go for all of this is the website.

Step 1: Go to www.makeymakey.com to see what a Makey Makey can do, get excited, and start dreaming up your own projects.

Step 2: Go to www.makeymakey.com/howto for illustrated, step-by-step information that will teach you the basic functions of a Makey Makey.

The printed information that follows gives you some of the basic information about connecting the Makey Makey to the computer. The website contains many fun activities and suggestions for unusual projects. You can also seach for "Makey Makey" on Youtube for even more ideas.

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A Bit of Technical Information

The MakeyMakey is a microcontroller that allows you to send the computer a message by touching something other than the keyboard. You plug the MakeyMakey into your computer and connect the enclosed alligator clips to objects that can conduct electricity. By the way, your body conducts electricity and one alligator clip has to attach the "Earth" section of the MakeyMakey to your body in order to complete the circuit!

The MakeyMakey has two sides. One side is mostly white, with 4 arrows on the left, and two circles identified as "space" and "click" on it. Using just this side of the Makey Makey allows you to control 6 keyboard functions: 4 directional arrows, the spacebar, and the computer mouse left click. By connecting one end of an alligator clip to the "space" circle and the other end to a banana (or anything else you choose) you will be able to make the computer believe that you've pressed the spacebar every time you touch the banana. Go to Flabbyphysics.com for a fun game using this function. You can make your own game controller by connecting to the arrow keys.

The short wires with bare ends fit into the black rectangles on the back of the kit. They allow you to control even more computer keys.

Arduino

If you enjoy electrical hobbies, you might hear of a term called "Arduino." Arduino's are microcontrollers that are gaining popularity because they are pre-built but use open-source software and hardware so they can be easily adapted to do many different functions. The Makey Makey is one example of an adapted Arduino device. Because of the adaptions a Makey Makey isn't as flexible as a basic Arduino but it serves as a great introduction to microcontrollers.

Real World Applications

Microcontrollers aren't just about playing games. Can you imagine any situations where you might need to interact with a computer but you couldn't use a keyboard? Many handicapped people don't have the dexterity to type. Creating alternative "keys" can open the world of computers to them.