



SUMMER CAMP GUIDE

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www.makeymakey.com

MAKEY MAKEY SUMMER CAMP GUIDE

SUGGESTED CAMP MATERIALS

This guide is designed for campers using recycled materials and Makey Makey for maximum fun!

We recommend one Makey Makey invention kit for up to two campers working together.

- [The STEM Pack](#) is the perfect solution for camp groups since as it includes 12 Makey Makey Classic boards, 147 alligator clips, 12 Makey Makey-optimized conductive 6B pencils, and enough accessories to serve up to 24 campers simultaneously if campers are working in pairs.
- Camp facilitators should have at least two extra Makey Makey for demonstration purposes.
- Camp facilitators will want to have clean recyclables for repurposing. We suggest cardboard pieces of various sizes, cardboard tubes, and plastic bottles.
- Office supplies make great conductors. Be sure to have metal paperclips, metal thumbtacks, metal binder clips, and brass fasteners on hand for creating inventions.
- Be sure to have conductive tape with conductive adhesive. We suggest one roll of tape per 5 campers.

DEVICE COMPATIBILITY

Makey Makey works on Windows, Mac, Chromebook and on many flavors of Linux (Ubuntu, etc.).

If your computer supports a USB keyboard or mouse, it should work with Makey Makey.

iPad Compatibility: The new iPad OS supports arrow keys and mouse or trackpad movement. As of April 13th 2020, iPads running iOS 13.4 work with Makey Makey v.1.4 and higher with the official Apple Lightning to USB Camera Adapter. Note: Most iOS apps are not coded to work with key presses, but browser-based programs like Scratch and our piano app work with Makey Makey and an iPad adapter. More [info on this here](#).

WHAT'S IN THIS GUIDE?

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BECOMING FAMILIAR WITH MAKEY MAKEY

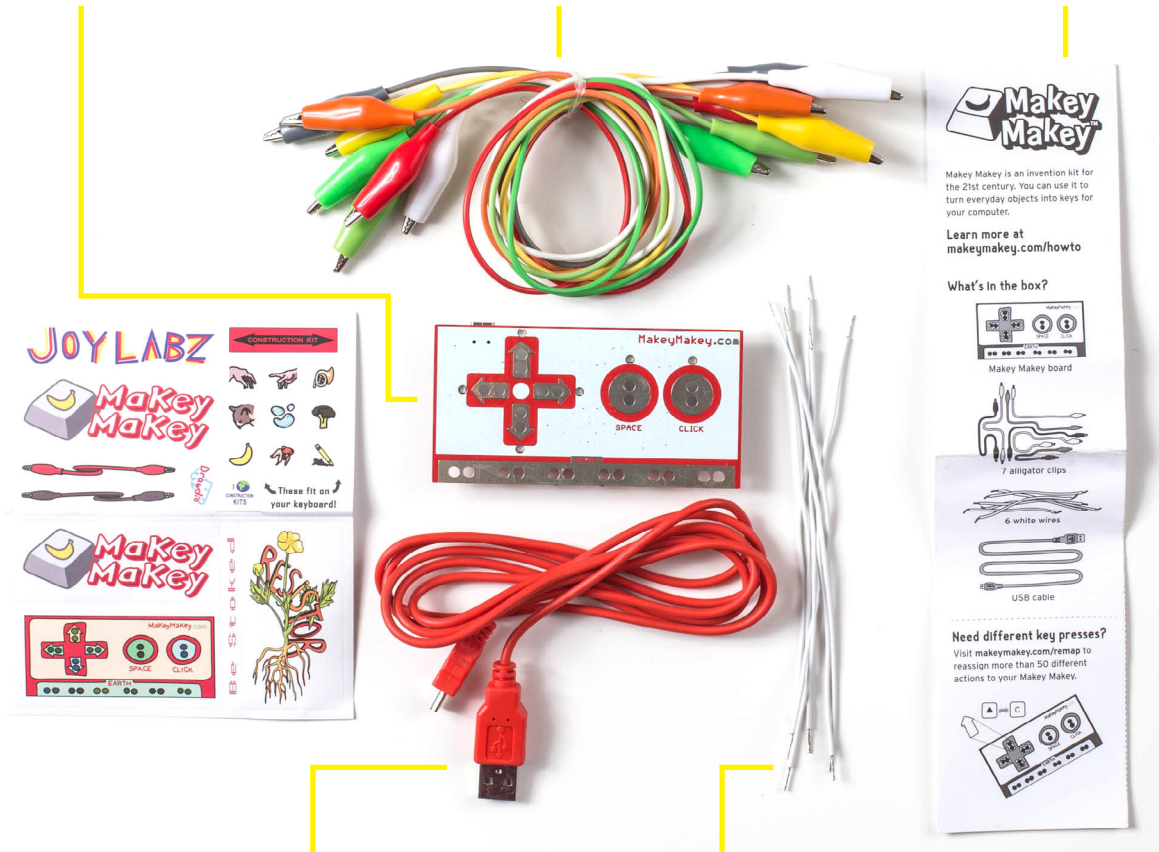
Makey Makey is designed for quick connections between a computer and a variety of objects. Learners can experiment with various configurations to create a complete circuit.

The Makey Makey kit (see fig. 1) includes the Makey Makey board, a USB cable, seven alligator clips, six connector wires, and an instruction sheet.

MAKEY MAKEY BOARD

7 ALLIGATOR CLIPS

INSTRUCTIONS

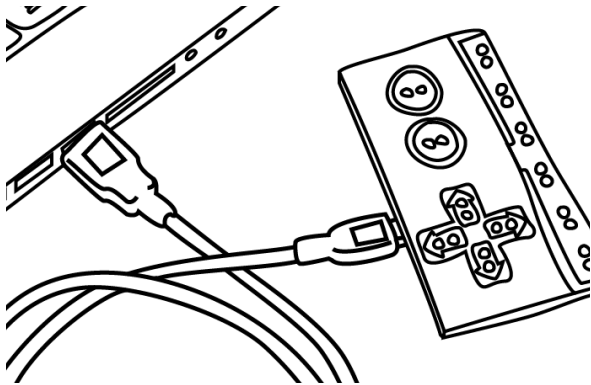


USB CABLE

6 CONNECTOR WIRES

Figure 1. Makey Makey Kit

HOW MAKEY MAKEY WORKS

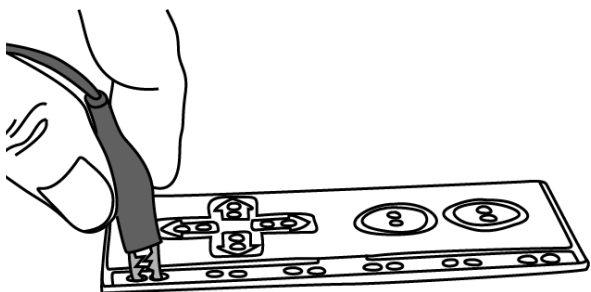


1. Plug in USB

The smaller side of USB cable plugs into Makey Makey, and the larger side plugs into the computer.

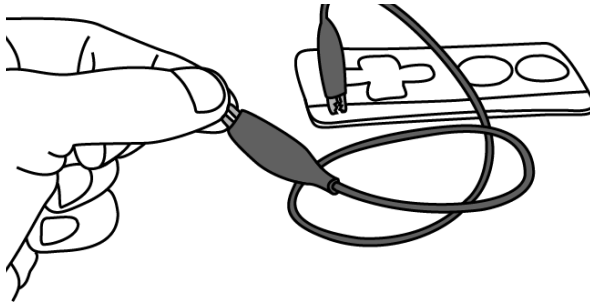
2. Close Pop-Up Window

The computer may ask to install drivers or complete another setup. 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.

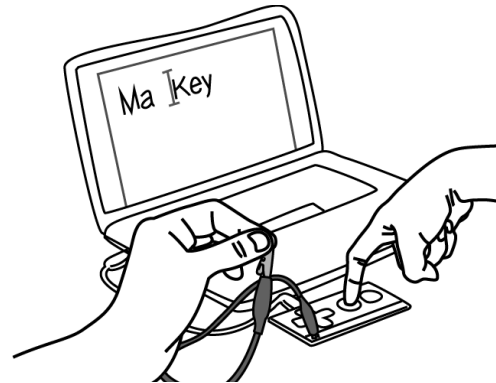


4. **Connect to Yourself**

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 are still grounded, touch the round **Space** pad on the Makey Makey. A green light should appear on the Makey Makey, and the computer will "think" the spacebar was pressed. Also, complete the circuit by connecting another alligator clip to **Space**.



6. **Experiment, Innovate, and Invent**

Experiment by turning various items, objects, or substances into a computer key. A connection can be made through anything that is even slightly conductive of an electrical current, so be innovative. Create inventions that combine conductive and non-conductive parts to solve real-world challenges.

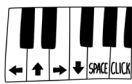
PLUG-AND-PLAY APPS FOR MAKEY MAKEY

The best thing about Makey Makey is that it can control any application, web page, or Scratch project that works with key presses. When first starting out with Makey Makey, ask campers to test conductive items on multiple apps. This video will walk first time Makey Makey users through this experience. [MakeyMakey.com/HandsOn](https://makeymakey.com/HandsOn)

You might also ask camper to create drawings to connect to apps. This video will walk campers through the process of connecting drawings to Makey Makey and different apps. [MakeyMakey.com/MusicalDrawing](https://makeymakey.com/MusicalDrawing)

Apps for Plug and Play

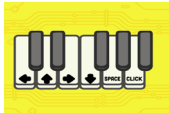
Here are some of our favorite apps (makeymakey.com/apps):



Makey Makey Piano: This is a piano designed for Makey Makey. Play a melody with the arrow keys and space bar (and click, too).



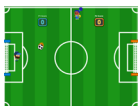
MK-1: This is a sampling synth made by Eric Rosenbaum for Makey Makey. Record your own sound, use preset scales, and set the keys to play just the notes you want. (Watch the last few minutes of this live webisode to see more about using the MK-1 synthesizer.)



Adjustable Piano: This is a piano you can play using the arrow keys and WASDFG. It is adjustable so you can change instruments, scale, and the amount of keys!



Makey Makey Sampler: This web app allows you to play music and sounds like a DJ or producer. You can even record your own sounds. Making it an ideal app to start creating with Makey Makey before you start coding your own projects.



Makey Makey Soccer: This game app allows you to play soccer with two players! Player one is controlled with the arrow keys and Player two is controlled with WASD.

SUMMER CAMP TOPICS: INTRODUCTION TO CIRCUITS AND EXPLORING MAKEY MAKEY

Objectives: Introduction to Circuits

- Learn how to craft a simple circuit
- Learn how Makey Makey works by completing a circuit
- Learn how humans can connect to make a key press on a computer
- Make observations about other materials that can complete a circuit

Objectives: Exploring Makey Makey

- Make a simple sketch of Makey Makey
- Use hands to trigger piano notes
- Build a human circuit
- Play and explore with Makey Makey

INTRODUCTORY AND BEGINNER MAKEY MAKEY ACTIVITIES

If your campers are new to Makey Makey, this is the perfect place to start! Have campers build paper circuits to explore how circuits work, then test items for conductivity so campers can design the ultimate DIY game controller!

Paper Circuit Templates and Activities

Campers will learn how a simple circuit works and create their first circuit and light an LED! The foundation of inventing with Makey Makey is built on completing a circuit! After crafting paper circuits, have campers learn how to make a human piano!

- [Craft a Simple Circuit](#) (30 min- 1 hr)
- [Lighting an LED with Makey Makey](#) (30 min- 1 hr)
- [Exploratory Circuit Stations](#) (1 hr)

Hands-On Makey Makey Exploration

Learn how Makey Makey works and get campers inventing on the fly! Campers will use their hands to trigger Makey Makey inputs on our piano app, play a human piano and explore playable drawings with Makey Makey.

- [Hands-On a Makey Makey Lab](#) (30 min)
- [Make Interactive Drawings with Plug and Play Apps](#) (1 hr)

Design a Game Controller

Learn how to make a game controller out of everyday stuff and play games using Makey Makey!

- [Design a Game Controller for Plug and Play](#) (1-2 hrs)

“What is Conductive?” Science Lab

What materials can campers use with Makey Makey besides bananas? In this lab, campers will explore what it means for an item to be conductive by setting up a simple experiment!

- [“What is Conductive?” Lab](#) (30 min)

SUMMER CAMP TOPICS:

MUSICAL INSTRUMENT CHALLENGES

Objectives: Musical Instrument Challenge

- Tinker with Bricolage and the Science of Materials
- Learn how to craft circuits to build a DIY instrument
- Craft an instrument out of recyclables and office supplies that will trigger notes on a Makey Makey app
- Learn how to make an oversized piano

PLUG-AND-PLAY MUSICAL INSTRUMENT CHALLENGES

Once campers are familiar with how Makey Makey works, have them design and create their own musical instruments out of recyclables and everyday stuff!

Super Easy Floor Piano

Create a Super Easy Floor Piano with HVAC tape that campers can play with their feet!

- [Super Easy Floor Piano](#) (30 min)
- Need something more complex? Have teams build a [Full Scale Portable Piano](#) and write musical masterpieces other campers can play with their feet. (1 hr)

Cardboard Guitars

Grab some hairspray, cardboard, and quarters to build cardboard guitars and play hair-raising metal!

- [Cardboard Guitar Guide](#) (1 hr)

Musical Instrument Challenge

Gather recyclable materials and challenge campers to design and build an instrument they can play with the Makey Makey piano or bongo app. Want a little more fun? Record audio samples on our new sampler app, and campers can design and create their own custom instruments to go with their custom sounds!

- [Musical Instrument Challenge](#) (1-2 hrs)
(Check out [these examples](#) from rockstar teacher Dori Friedman.)
 - [Piano App](#)
 - [Bongo App](#)
 - [Sampler App](#)
 - Coding Option: Code Music with Scratch (Check out this [Invent an Instrument Studio!](#))

SUMMER CAMP TOPICS:

GAME DESIGN CHALLENGES

Objectives: Game Design Challenges

- Learn how to create a pressure-sensitive switch
- Learn the basics of block-based programming with Scratch or MakeCode Arcade
- Learn how to remap Makey Makey for specialized inputs
- Craft a tilt sensor out of recyclables
- Be challenged to design a physically active computer game

GAME DESIGN CHALLENGES

Get your campers coding with block-based programming languages like Scratch or MakeCode Arcade. Then have them design unique game controllers out of crafting materials or office supplies!

One-Button Games

Create cardboard stomping pads and challenge campers to design a one-button game in Scratch or Make Code Arcade.

- [Stomp Pads Guide](#) (1 hr)
- [Getting Started with Scratch Guide](#) (1-2 hrs)
- Makey Makey and [MakeCode Arcade](#) (1-2 hrs)

DIY Controllers

Save up toilet paper rolls and recyclables to challenge campers to create controllers for our plug and play games. Then challenge them to code their own games in MakeCode Arcade or Scratch.

- [PlayDoh Controller and Scrappy Joystick](#) for Soccer App (45 min)
- [Glove Controller](#) for Soccer App (30 min)
- [Hula Hoop Controller for Dungeon Rescue](#) (45 min)
- [Recyclable Tilt Sensor Design Guide](#) for Scratch (1 hr)
- [Heavy Duty Washer Joystick](#) for Makey Makey apps or MakeCode Arcade

MakeCode Arcade Games

Use Makey Makey and MakeCode Arcade for maximum fun!

- [MakeCode Arcade: Kayak Simulator](#) (30 min)
- [MakeCode Arcade: Dig Dug Simulator](#) (1 hr)

STEM in the Gym Design Challenge

Once campers have some experience with Scratch programming, challenge them to invent a game that will help make their fellow campers get active!

- [Guide to STEM in the Gym Challenge](#) (2-3 hrs)
- [Inspiration from Eric Turrill](#)
- Uncomfortable coaching coding? Use our new [Scoreboard](#) or [Counter App](#)!

SUMMER CAMP TOPICS:

FUN CURRICULUM CONNECTIONS

Objectives:

- Learn how to add conductive touchpoints to posters
- Combine circuit sensors to create a fraction generator
- Tinker with literacy and circuits
- Create physical timing gates with office supplies
- Learn to code timers in Scratch

FUN CURRICULUM CONNECTIONS

Sometimes learning can be fun! These projects are some of our favorite projects that cover a mixture of curriculum ideas!

Talking Posters

Have campers research a topic they are interested in and create talking posters with our new poster app, or simple Scratch coding.

- [Interactive Poster Guide with Scratch](#) (1-2 hrs)
- [Interactive Poster Guide with Plug and Play App](#) (45 min)

Fraction Generator

Play with fractions by building a fraction generator with measuring cups and copper tape. Use Orbeez water beads instead of water for easy clean up!

- [Fraction Generator Guide](#) (1 hr)
- Uncomfortable coaching coding? Use our new [Poster App!](#)

Interactive Word Wall

Have teams create an interactive word wall to learn new concepts or even to learn about one another.

- [Make an Interactive Word Wall](#) (1 hr)
- Use our new [Poster App!](#)

Poetry

Campers love silly poems. Draw playable circuits and program with Scratch or record audio with our [new Sampler App!](#)

- [Poetry Generator](#) (1 hr)
- [Black Out Poetry](#) (1 hr)

Pixel Art Fingerpaint

Combine conductive touch points on a coordinate plane and code pixel art finger paint in Scratch!

- [Guide for Pixel Art Fingerpaint](#) (1 hr)

Timing Sensors for Race Tracks

Create sensors on Hot Wheels tracks to learn about physics and coding timers with this Distance, Rate, and Time project.

- [Guide for Distance, Rate, and Time](#) (1-2 hrs)
- Uncomfortable coaching coding? Use our new [Timer App!](#)

CONNECT WITH US!

Our team is constantly updating and sharing new ideas on our how-to page and hosting webinars with educators and counselors just like you! Sign up for our newsletter to learn more ways to go beyond the banana!

- **How-To Page:** <https://makeymakey.com/pages/how-to>
- **Resources for Beginner and Intermediate Inventors:** <https://bit.ly/MakeyAtHomeProjects>
- **Information about Webinars and Teacher Projects:** <https://makeymakey.com/blogs/blog>
- **Sign Up for Our Newsletter:** <http://bit.ly/makeysignup>
- **Join Our Facebook Educator Group:** <https://www.facebook.com/groups/makeymakeyeducators/>

EMAIL



Education orders: education@joylabz.com



Interested in carrying Makey Makey in your store?

Retail orders: sales@joylabz.com



Have a question about an event? A project you want to bring to life?

General inquiries: info@joylabz.com



Having issues with your board? Have a tricky technical question?

Tech support: support@joylabz.com



Have a question about ordering, or about an existing order?

Orders and shipping: support@joylabz.com

PHONE

You can reach us Monday - Friday, 9:00 - 5:00 (US Pacific Time) at: +1-831-460-6242

If you don't get an answer right away, shoot us an email.

THE INTERNET

We're on social media! We love to see you there and the things you invent. Tag us and send us your campers' creations on:



Facebook.com/makeymakeykit



Twitter.com/makeymakey



Instagram.com/makeymakey



Youtube.com/c/makeymakey