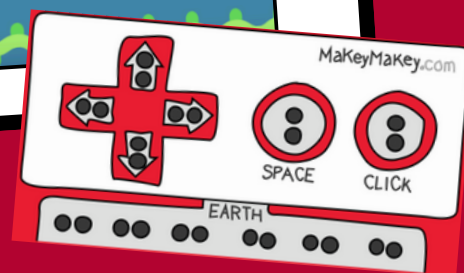
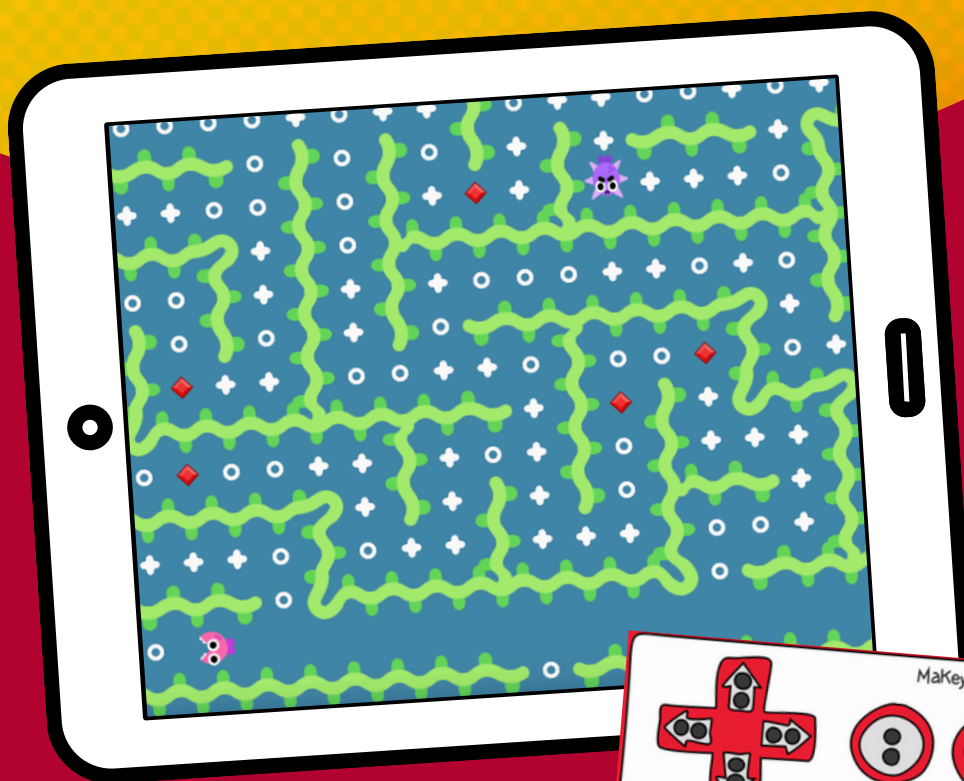




FISH CHOMP

GAME INSTRUCTIONS

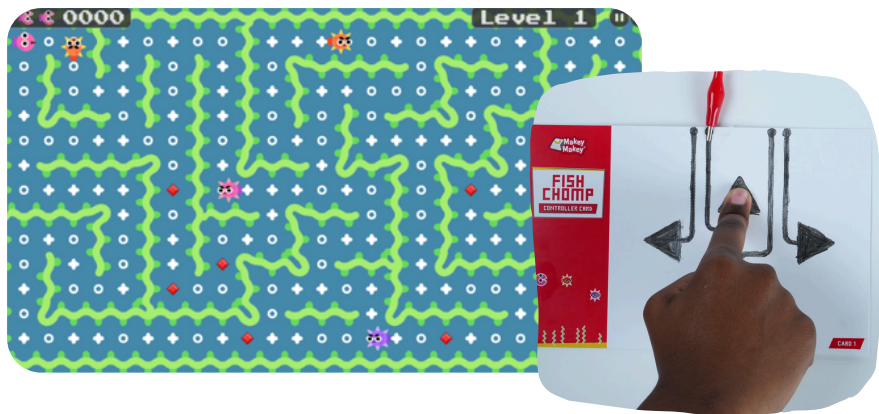
version 1.0



makeymakey.com

INTRODUCTION

Welcome to an exciting adventure where classic gaming meets creativity! If you've ever enjoyed guiding a well known, maze-running hero with a craving for dots, bouncing fruit, and an aversion to pesky ghosts, then you're in for a treat. In this project, we're diving into the world of interactive fun by combining the challenge of maze-running gameplay with the hands-on innovation of building your own game controller. Have you ever imagined drawings that actually functioned as game controllers? What about using them to actually play a game? Well, today is the day that becomes reality!



In this guide, we'll walk you through creating your first DIY Party Pack controller using your Makey Makey. You'll start by coloring special controller cards with conductive pencils, then connect them to the Makey Makey to build your controller. Once everything works, it will be "Game On" using it with our Fish Chomp game. This project is not only a fun introduction to electrical circuits and game design, but also a fantastic way to unleash your creativity. By the end, you'll not only have a functional controller but also the skills to experiment and extend your setup for more gaming fun with others. So, roll up your sleeves and get ready to turn your drawings into interactive game controls!

1 TOOLS + MATERIALS

To get started with your first controller build using Makey Makey you will need the following materials from the kit and a few things from around your home!

FROM THE KIT...



Drawing Controller Cards - Yes, you read that right- you will be drawing to create a game controller!



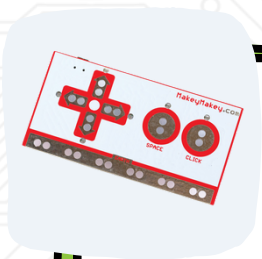
Makey Makey Conductive Pencils - These pencils are designed to be conductive so you can draw circuits (and stick figures).



Alligator Clips - These "chompy" colorful wires are how you hook things up to your Makey Makey.



Velcro Wrist Band - For connecting you and other players to the Makey Makey!



Makey Makey - It wouldn't be a Makey Makey Project without a Makey Makey! Don't Forget the USB Cable.



Makey MAX Backpack - This add-on board clips to the back of the Makey Makey so you can add more input keys!

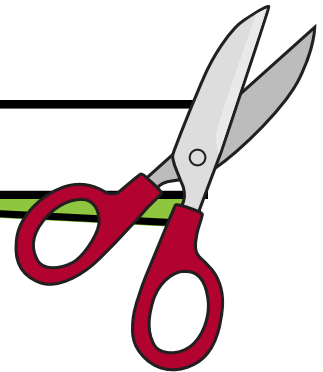
FROM YOUR HOME...

Go Find It!



Computer – Makey Makey works with any laptop or computer with a USB Port (Windows, Mac, Chromebook).

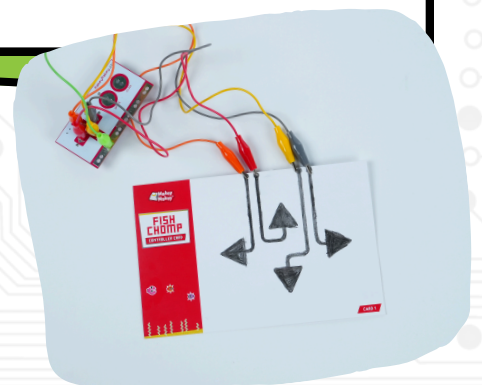
Scissors – You will need to cut some paper!



2 CREATE YOUR CONTROLLER

The game is called Fish Chomp. Chompy is a fish that collects dots while trying to avoid other mean fish that are trying to eat him! The game controls are a simple arrangement of direction keys (UP, DOWN, LEFT, RIGHT) for a single player.

You will be creating your own controller, and one of the best ways to prototype and ideate electrical circuits is to draw them. One of the magical aspects of Makey Makey is that your drawn prototype can actually work. Pencil graphite is conductive!!!



DRAWING CIRCUITS



Grab the Fish Chomp Controller Card 1 and a Makey Makey Conductive Pencil. Notice that the coloring pages have dotted outlines to help guide where you are to color.

Starting with the UP arrow, color (boldly) inside of the lines starting with the arrow and moving out to the edge of the paper. The Makey Makey pencil is really soft and can get really dark.



Your goal as you draw is to put down a solid, bold line of graphite as shown. You shouldn't see any white paper through your line at all.

When you get to the edge of the sheet, be sure to take care to get the graphite right up to the edge and fully fill the "bubble". This area is where the drawing will connect to your Makey Makey with Alligator clips, so there needs to be a lot of graphite there.

WIRING THE DRAWING TO MAKEY MAKEY

With your drawing complete it is now time to hook the drawing up to Makey Makey and put it to work!





Grab one of your alligator clips (color doesn't matter) and clip it to your drawing at the "bubble" as shown.

Now, clip the other end of your alligator clip to the UP arrow on your Makey Makey.

GROUNDING YOURSELF TO EARTH

With your drawing connected to the Makey Makey, we now need to complete the circuit and you are going to be an important part of it!

Grab one of the velcro wrist bands and put it around your wrist. We will tighten it in a bit. Next, grab another alligator clip (color doesn't matter) and clip one end to your wristband, but this time push the rubber sheath of the clip back. Now, tighten the wristband, being sure that the metal part of the alligator clip is firmly in contact with your skin.



Finally, attach the other end of the alligator clip to the EARTH bar as shown.

TESTING YOUR DRAWN CIRCUIT

Now, plug your Makey Makey into your computer via USB cable. Your Makey Makey should light up and the LEDs on the front of the board should blink in a fun pattern.

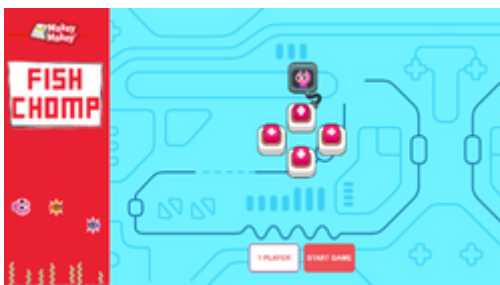
While connected to EARTH via your wristband press the drawn UP arrow with your finger. The LED on your Makey Makey next to the UP arrow connection should light up as shown. Depending on what you have open on your computer it should register an up arrow key press.



Testing Your Makey Makey with an App

Sometimes it is hard to tell if your Makey Makey is working and whether or not you have everything hooked up correctly. The green LEDs are a great way to tell if things are working on the Makey Makey, but sometimes you need a little more feedback than that.

This controller is designed to be used with our game called "Fish Chomp". Navigate to the Fish Chomp game (makeymakey.com/fishchomp)!



The game will load into full screen mode and you will be presented with a Start menu that gives you the option to select 1 player or 2 players as well as an image of the controls for the game. If you press any of the keys shown on the Makey Makey while you are connected to EARTH the fish (Chompy) should turn to face that direction. Test your drawn UP arrow by pressing the drawn arrow. Chompy should face up on the screen!

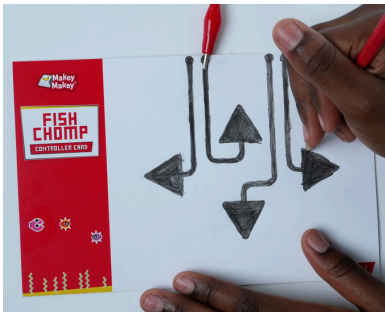
If Your Controller Doesn't Work...

Prototypes rarely work right out of the gate and drawn circuits are no exception. Here are a few things to double check if your drawn circuit is not working properly.

1. **Double check your alligator clip connections!** Is it connected to the "bubble" firmly and in contact with the graphite drawing? Did you connect to the correct arrow on the Makey Makey to the matching drawn arrow? Are you connected to EARTH?
2. **Tighten your EARTH wristband!** Sometimes the band is too loose and the clip isn't in contact with your skin. Try tightening the band, or even just holding the clip in your hand to test it.
3. **Darken your line!** The circuit failure could be in your drawing. Try darkening and/or widening your lines a bit with a Makey Makey pencil.

DRAWING A FULL CONTROLLER

So, you have drawn a single UP key for your controller, let's expand that to a full set of controls using DOWN, LEFT, and RIGHT!

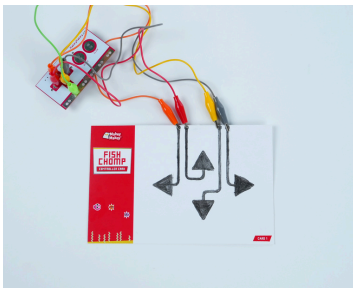


Using your Makey Makey Conductive Pencil color in the other arrow outlines just like the first one you completed. One thing to note here is that graphite from pencil smudges and smears easily. As you are coloring, try not to drag your hand across your drawings. We recommend working from the middle of your drawing out to the edges!

WIRING YOUR FULL CONTROLLER



With the fully drawn controller complete it is now time to wire it all together.



You will need 3 more alligator clip wires. Clip each one to the bubble of the three freshly drawn arrow keys, and the other ends to the matching Makey Makey arrow connections as shown. With that, you have a fully drawn controller. Time to go play a game with it!

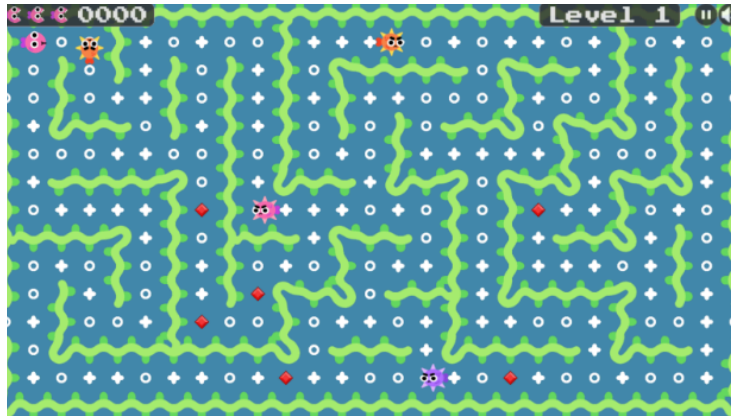
3 PLAYING YOUR GAME

It's now time to play the game! Grab your drawn controller and let's see who can chomp the hardest!

PLAYING WITH YOUR CONTROLLER

If Fish Chomp isn't already open on your computer, navigate there now! (makeymakey.com/fishchomp).

The game is already mapped to the controls of your Makey Makey. 1-Player mode uses the arrow keys on the front of the Makey Makey, so you are all set for 1-Player mode. Using your mouse, click on "Start". You can now use your drawn controller to play Fish Chomp! Collect those dots, avoid the mean fish, and WIN! WIN! WIN!



4 EXTENDING THE GAME

A single player game is no fun when you are hanging out **with** friends... don't be that person; play with your friends!

2 PLAYER

Adding a friend to the game is easy! We have a 2-Player option in the game, and all you have to do is add a second controller. The great news is that they also get to draw their own controller!

Draw Another Controller

We have included a number of drawable controller templates for you to use. Have a friend grab one and teach them about conductive pencils and help them draw their own controller!

There are a number of design options and if you don't like any of ours, feel free to grab a blank sheet of paper and design your own keys!!



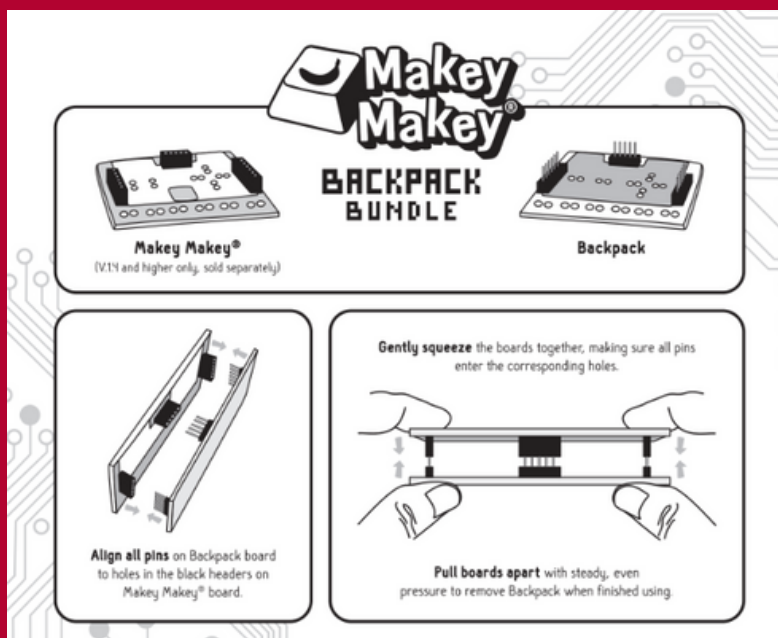
Adding Makey MAX

To wire a second player controller you will need more alligator clips and more spots to clip to! This means you need to add the Makey MAX backpack to your Makey Makey!

Makey MAX is a circuit board that is designed to make the extra inputs on the back of the Makey Makey easier to clip to. Those extra inputs are the W, A, S, D, F, and G keys, and full mouse control.



We have added an instruction card to the Makey MAX package for you to follow, but we also give you step-by-step instructions here!...

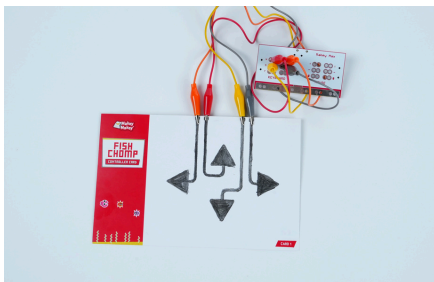


1. Align all of the pins on the backpack to the black headers on the back of the Makey Makey.
2. Press the backpack and Makey Makey together!
3. Double check that all of the pins are plugged into Makey Makey and not bent or misaligned!

Wiring Player 2

With the Makey MAX Backpack attached to your Makey Makey it is now a matter of hooking up all of the wires to the correct inputs on the backpack!

Grab another wristband and hook it up to EARTH the same way you did for yourself and attach one end to the EARTH connections on the Makey MAX Backpack. The other end should be connected to a second wristband connected to whomever is going to be the 2nd player.



Now, connect player 2's controller UP, DOWN, LEFT, RIGHT arrows to W,S,A,D keys (in that order) on the Makey Max Backpack.

PLAYING 2 PLAYER

Playing 2 players is similar to 1 player, but just add a 2nd fish player and a different set of keys to control it!

Start the game as before, but use the mouse to click on the Player option and it will change to "2 Players". Now, both players can test their controller with their own fish, Player 1 is Chompy and Player 2 can name their fish whatever they like! Click "Start" and go get 'em!



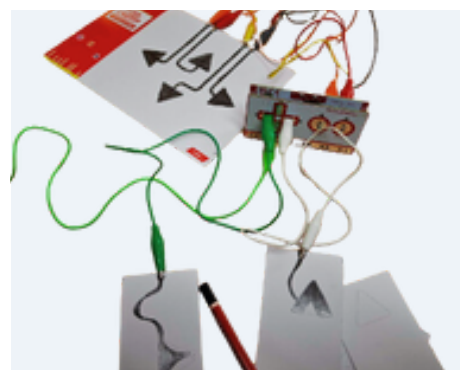
COLLABORATIVE/TEAM PLAY

Does this game really have a limit of 2 players? What if we were to widen our horizon and think of the word "player" as "team"? How would that change the game?



You can do that! How? By turning your controllers into what we call a “collaborative controller”! Imagine this... The game is still 2 fish, but instead of one person having full control of the fish, each person would have control of only part of the controller... a team of 4 with each person controlling a single direction button!

You have controller sheets that have dotted lines and a pair of scissors icons that separates different controls! If you cut along those lines you can assign each one of them to different members of your team. So, you might have one person controlling up and down and another left and right! We provided you with 8 wristbands, so you can have up to 8 people playing in a collaborative controller format!



5 LEVEL-UP YOUR PROJECT

This is just your first project with Makey Makey in this kit and our goal is for you to use this as a starting point. We want you to take what you learned with this project and use it, hack it and make it your own!

Hacking Your Controller

Your controller is literally just a drawing, and you own the pencils! You can draw as many controllers as you want, and you are limited only by the size of the piece of paper at your disposal! Here are a few ideas we came up with:

1. **Foot Controller** – Why just use your fingers to use your drawable controller? Take your shoes and socks off and use your feet! You may need a larger piece of paper and a bit more time! Trace your feet onto the paper and create a line to the edge of the paper to clip to!
2. **Box Controller** – Who said your drawn controller needs to be flat? Use an empty box and draw your controller on different sides of the box and hook it up to Makey Makey. Remember: You still need some way to connect to EARTH!!!
3. **Mix It Up** – Take a moment and try out some of the other controllers and games in this kit. Once you have experienced the different materials and techniques in making controllers, come back and combine them for an ultimate controller!

House Rules for the Game

No game night is complete without playing a game with “house rules”. If the idea of House Rules is new to you, that is OK, but you have probably used them without even knowing you were!

House rules are the way a group of people agree to modify the original rules of the game. If you have gone over to a friend's house and they say “We play this game, but we play it this way” those are house rules. Their family plays that game with a twist!

We love house rules, it is one of the easiest ways to invent a completely new game by taking a game and making it better with your own rules; your own twist on it. Then go share it, and play with your friends to see if you did in fact improve it.

Here are a few house rules we came up with for Chompy and drawable circuits...

1. **Golf Mode** – In two player mode – The winner is the fish with the least number of points, but survives the longest!
2. **Aerobics Mode** – Place your controller inputs far apart so you have to play by moving around to get to each one!
3. **Pat Your Captain on the Back!** – In this mode the captain of the team is the only one connected to EARTH and you have to high five them while pressing the controls!

