

Group Whack-A-Potato hack

This article provides ideas for a group Makey Makey education/hacking session based around the [Whack-A-Potato](#) game.

Target age range

Toddlers to adults!

Goals

- To have fun!
- To gain experience and confidence wiring up Makey Makey to computers and various vegetables
- To download, install and run a game from the internet
- To create a personalised, customised game using photos of or provided by participants
- To gain experience of basic image editing (to remove background and resize)
- To experiment with different objects as game controllers
- [Advanced] To gain programming experience by inspecting and modifying the game source code

Duration

1 hour. Longer with the advanced activities (modifying source code).

Equipment & Materials

Per group:

- 1 computer (Windows or Mac)
- 1 Makey Makey board with 4 crocodile clip cables
- 3 potatoes (or other vegetables)
- 1 banana, lemon, carrot or other easy to hold conductive object to make the ground connection
- Selection of other robust fruit/vegetables for further experimentation
- Digital camera for taking photos of participants to customise game. Mobile phone cameras are fine. One camera could be shared between all groups.

Encourage participants to bring along a USB stick so they can take their custom game home with them!

Difficulty

Easy if you stick to just downloading, running and customising the game.

Moderate to advanced if you get into installing the Loom Game Engine and modifying the game source code.

Steps

The main guide for downloading, installing and running Whack-A-Potato is [here](#). Give your participants a link to this

1. To get started, show the group the [Whack-A-Potato demo video](#). This should get them stoked, and keen to build their own version.
2. Install the game: Download, install and run the basic Whack-A-Potato game. This will have the default moles, and can be played with the



Follow

Follow "bluntbody"

Get every new post delivered to your Inbox.

Powered by WordPress.com

keyboard.

3. Set up the Makey Makey: Wire up the Makey Makey to the vegetables, and plug the Makey Makey into the computer. Open a text editor and test the potato connections and wiring. Hold the connection to ground in one hand, and whack the potatoes with the other hand. They should type the letters A, S, D when whacked from left to right.
4. Play the game with potatoes!
5. Customise the game: Get some images that you want to use for moles. These could be of participants, family members, friends, celebrities. The pictures can be taken with a digital camera, existing photos from a phone, or downloaded from the web. Remove the background from the images and resize them by following the instructions in the main Whack-A-Potato guide. Copy the new images into the specified folder within the game.
6. Play the customised game! See who can get the highest score.
7. Ensure that participants take home their customised game! Either copy it onto a USB stick or zip it up and email it.

Basic extension activities

For people who complete the basic activities quickly, they can try one or more of the following.

- Experiment with different objects as game controllers. Try other types of vegetables. Can you use other vegetables to whack the potatoes? What about other non-vegetable controllers? Kitchen pots and pans, perhaps?
- Try multi-player co-op mode! Two (or more) people can all hold the ground connection. Or each other. Then they can all play the game together by whacking the potatoes with their free hands.

Advanced extension activities

These activities will take at least 30 mins.

Install the Loom Game development tools. Download the Whack-A-Potato source code. Hack the code the change the game!

- Download the [Loom Game Engine](#). You just need to sign up for the free “Starter” license.
- Download the Whack-A-Potato [source code](#). Click on the “Download ZIP” button on the right-hand side, then unzip the downloaded file.
- All the source code is in the single file src/WhackAMole.ls. The source code is in LoomScript, which is very similar to ActionScript (as used by Adobe Flash). It is relatively easy to understand for anyone with previous programming experience.
- To build and run the game from the source code, from within the top-level WhackAPotato directory simply type:
> loom run
- Try playing with some of the constants defined at the start of the file:

```
// Duration of a single game.
protected const GAME_TIME_SECS = 30;

// Number of points for a hit.
protected const HIT_POINTS = 100;

// Number of points subtracted for a miss.
protected const MISS_POINTS = 5;

// Amount of time that a mole initially remains up for (seconds).
// This reduces as moles are whacked during the game.
// Reduce this value to make the game harder!
protected const INITIAL_MOLE_UP_TIME = 2.5;

// Amount of time between timer ticks (seconds).
// This reduces as moles are whacked during the game.
// On each timer tick a decision is made whether to
// pop up each of the moles.
protected const INITIAL_TIMER_PERIOD = 1.0;
```

Feedback

If you have any feedback or further suggestions then please do post them below!

Share this:



Like this:



Leave a Reply

Enter your comment here...

[Return to top of page](#)

[Blog at WordPress.com.](#) · Customized Minimum Theme.

BLUNTBODY

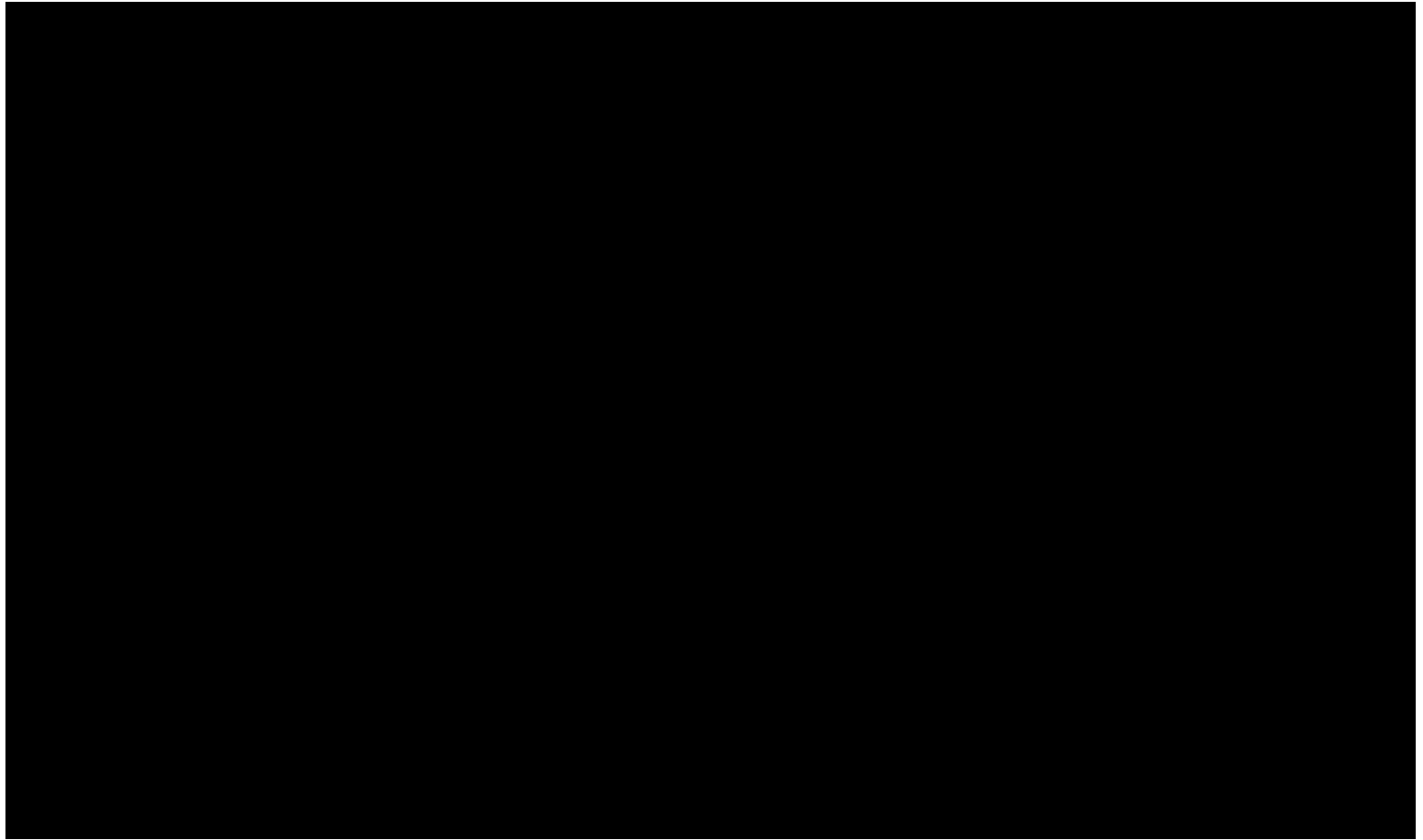
the simplest and most reliable approach

[WHACK-A-POTATO](#) [SPACE DEATH](#) [OCULUS RIFT](#) [SPACE](#) [ABOUT](#)

Whack-A-Potato

Whack-A-Mole reinvented, with small children and potatoes...

Demo



Video soundtrack by the bleeping fabulous [Chipzel](#).

Background

This is what happens if you buy a [MaKey MaKey](#) interface board for your kids, can't find any suitable games, and want an excuse to hack something together with the [Loom game engine](#). The game is a modified version of one of the Loom demos (added keyboard support and some new gameplay).

Installation

The game is free to download:

- [OSX install package](#).
- [Windows zip file](#).

What you need in order to play...

[Follow](#)

Follow "bluntbody"

Get every new post delivered to your Inbox.

Powered by [WordPress.com](#)

- Apple Mac running OSX or a Windows PC
- MaKey MaKey (if you want to play with vegetables – you can also play using the keyboard)
- Vegetables or fruit of your choice (or anything else vaguely conductive...)

Program install:

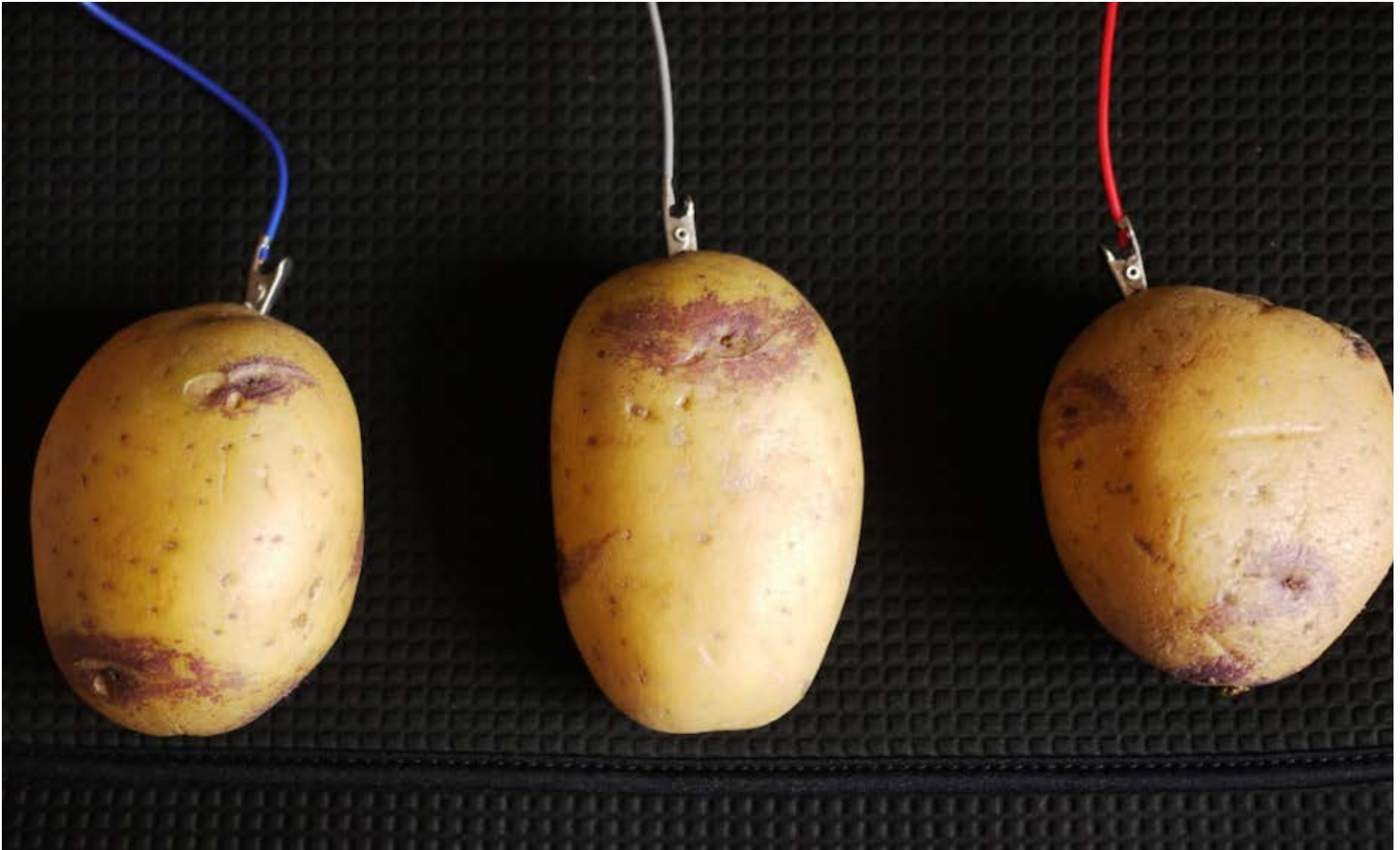
- OSX: Download the package, run it and follow the instructions. If all goes well, you will get a WhackAPotato icon in your Applications folder.
- Windows: Download the zip file. Unzip it. Run WhackAPotato.exe.

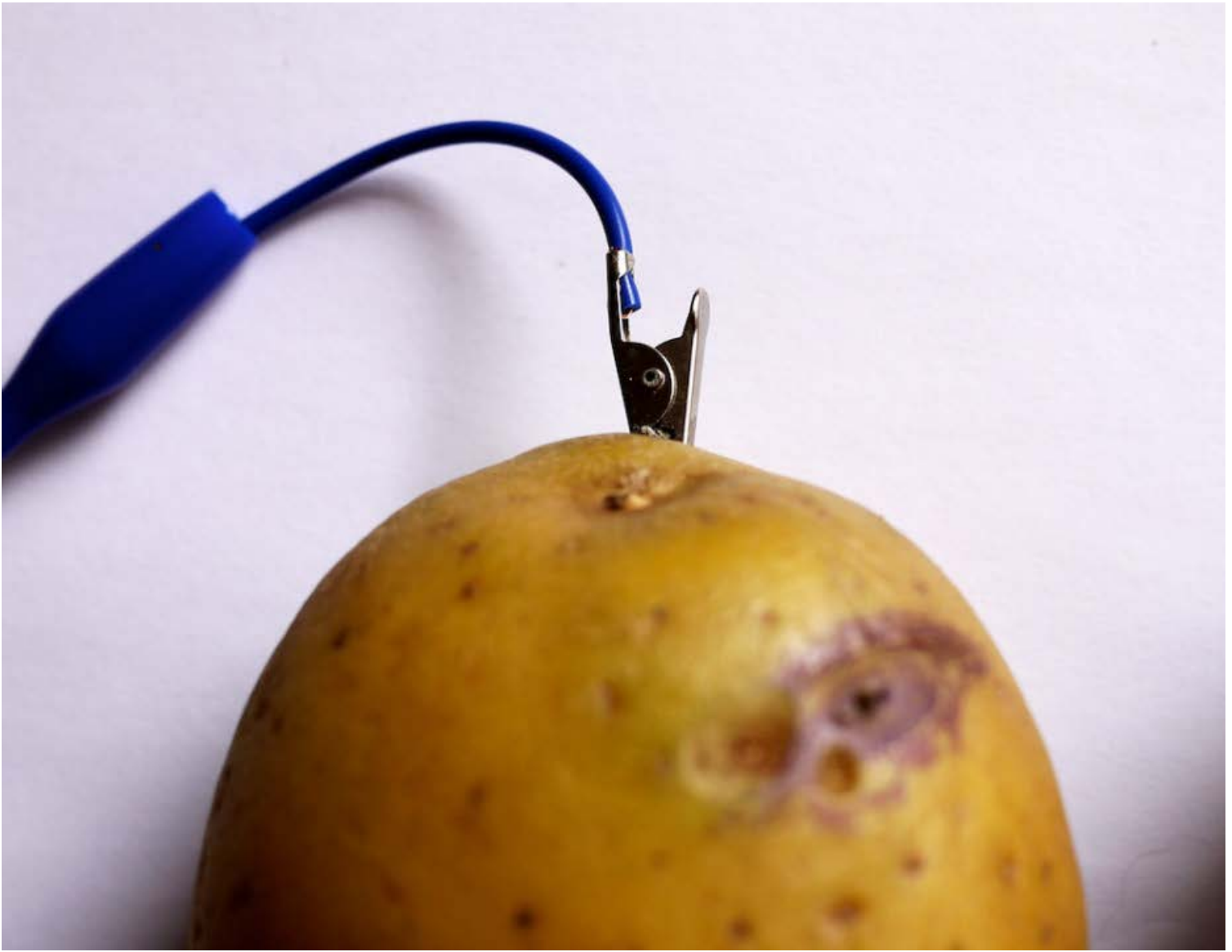
Software troubleshooting

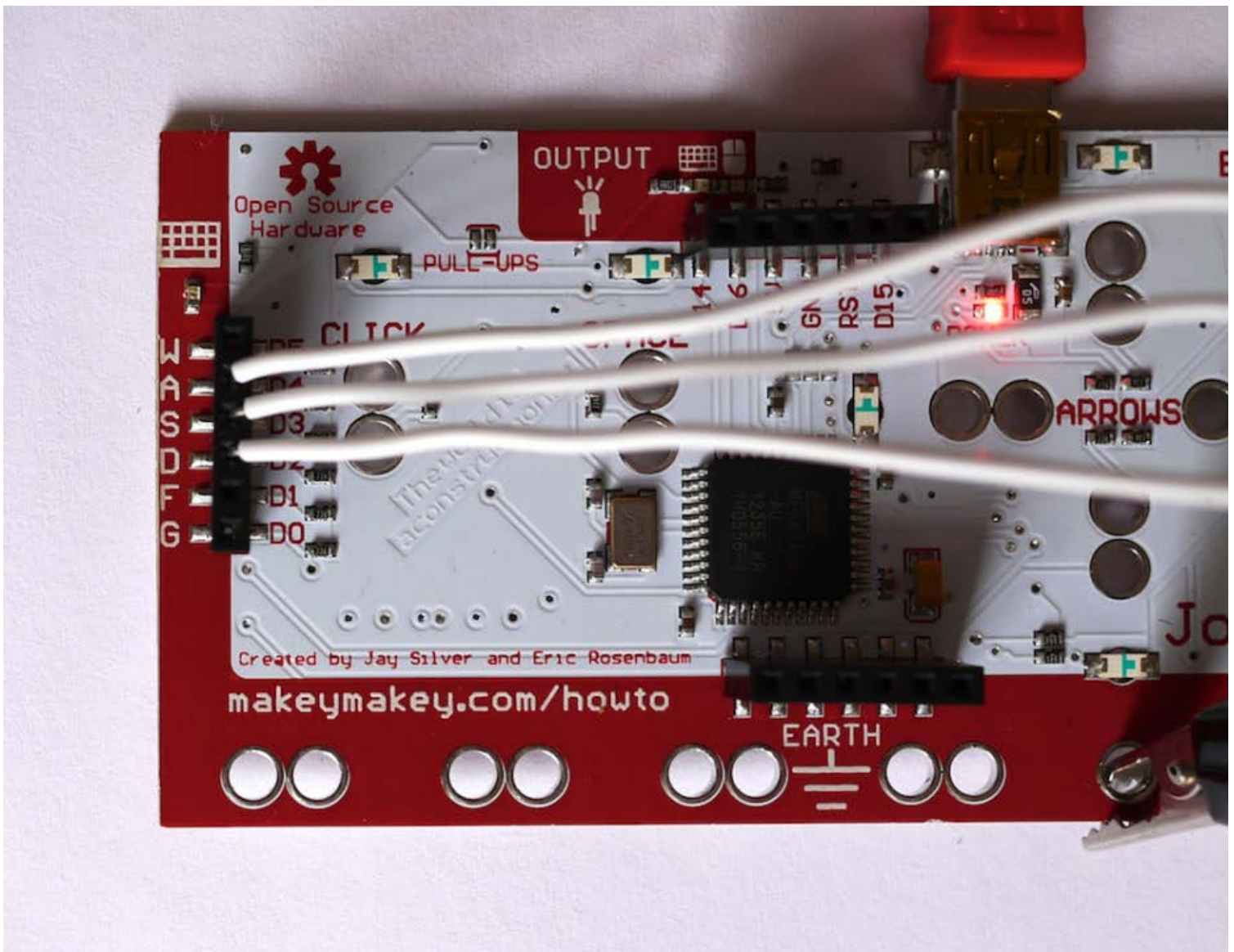
If you have problems running the program on Windows then it may be because you have an old display driver. Check with your graphics adaptor manufacturer to see if there is a newer display driver available.

Hardware setup

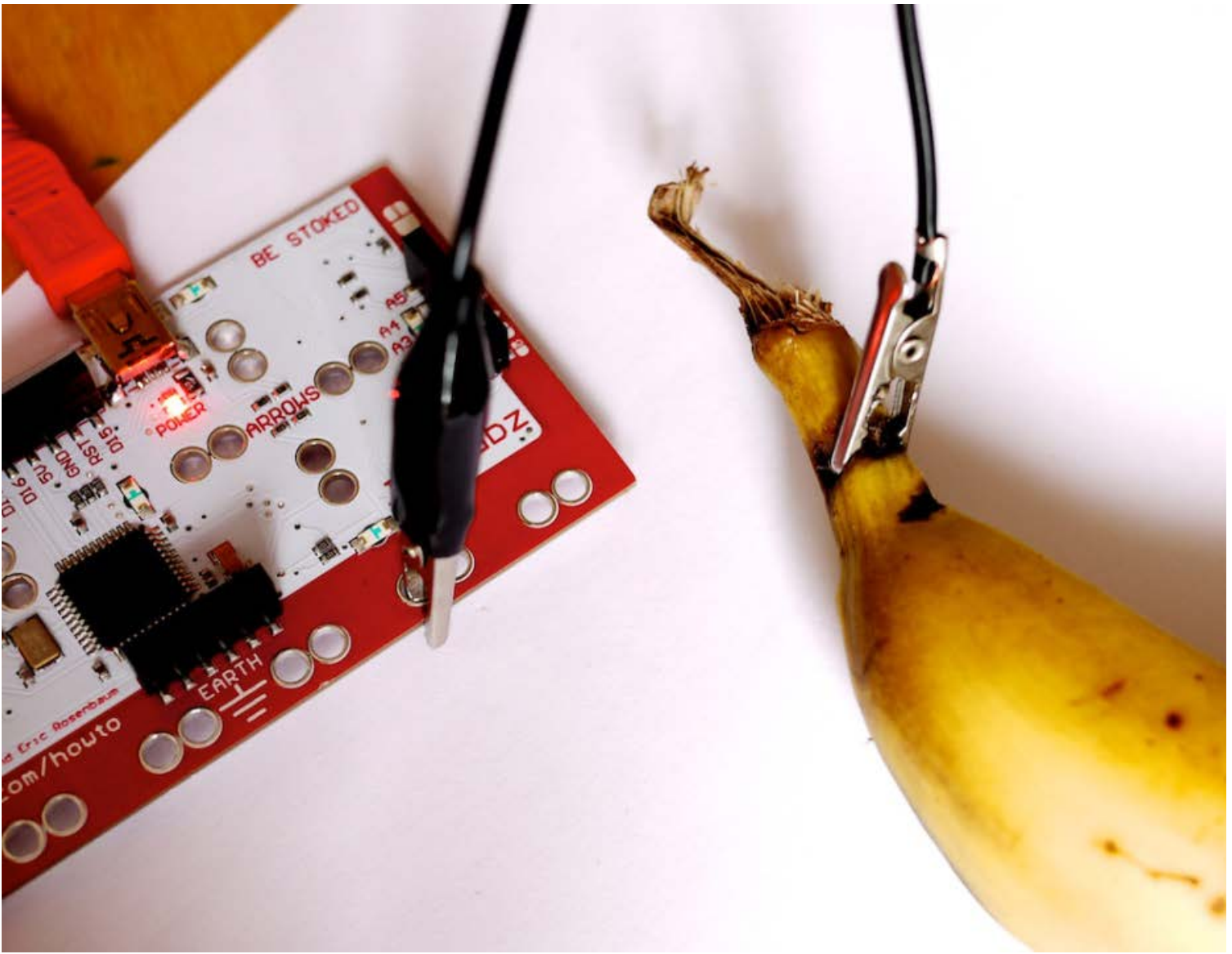
- Connect 3 potatoes with wires to the A, S, D terminals on the edge of MaKey MaKey. You can easily make the connections with the standard crocodile clips, but 1/4" audio jacks (e.g. guitar/instrument cables) are particularly satisfying to plug into potatoes!







- Connect another object (banana, lemon etc...) to one of the EARTH terminals at the bottom of the MaKey MaKey. You need to hold this while playing the game to complete the circuit when whacking the potatoes.



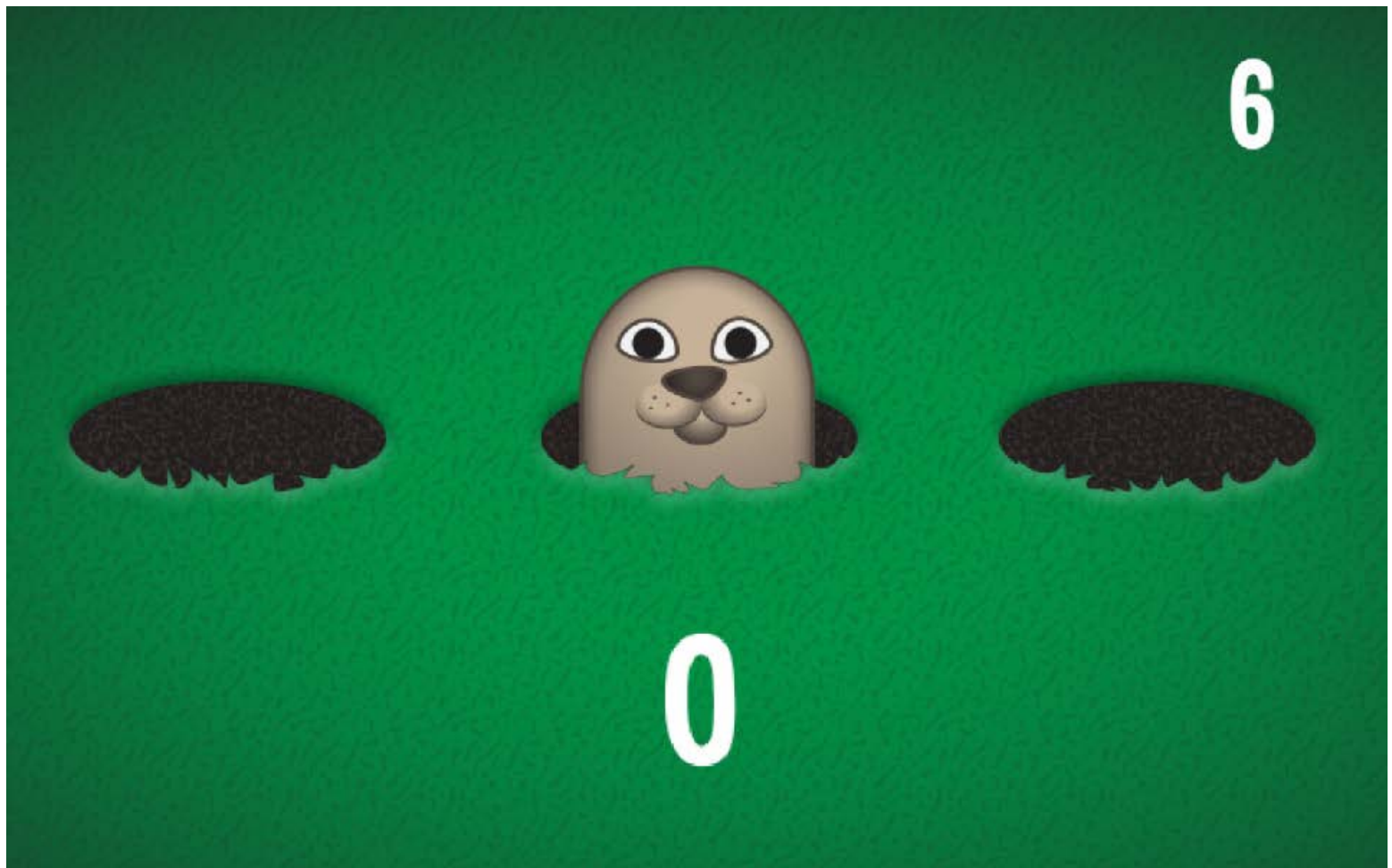
- Plug in the MaKey MaKey to a USB port on the computer.
- Test the potato controllers by opening a text editor or terminal window, holding the EARTH connection (banana) in one hand and hitting the potatoes with the other hand. The potatoes should display "A", "S", "D" when hit from left to right.

Keys

- SPACE: Start game
- A, S, D (potatoes!): Whack moles
- F: Toggle fullscreen mode
- ESC: Quit

Customising with your own pictures

By default the game comes with moles to whack.



You can replace the mole bitmaps with your own pictures (of children, grown-ups, pets, vegetables...) without any code changes.

1. Create the bitmaps.

- The bitmaps need to be “png” format with dimensions of about 178×200.
- If your bitmaps are a different format (e.g. jpg) or size, then load them in an image editor (e.g. OSX Preview or Windows Paint) and save them as PNG using File/Export.
- Edit the bitmaps to make the background transparent. A really useful tool for removing image backgrounds is [Clipping Magic](#). It currently only works with Chrome and Firefox. Alternatively, you can erase background areas in OSX Preview by selecting areas and clearing them with the backspace key. The Smart Lasso is helpful in selecting background areas.

2. Copy the bitmaps into the application:

- OSX:
 - Open the Finder and go to the Applications folder
 - Right-click on WhackAPotato and select “Show Package Contents”
 - Navigate to Contents/Resources/assets/sprites
- Windows:
 - Navigate to the assets\sprites directory
- Replace mole_1.png, mole_2.png, mole_3.png with your own bitmaps (the filenames must stay the same). Do not replace mole.png – this is just a copy of the original bitmaps in case you want to revert to moles.

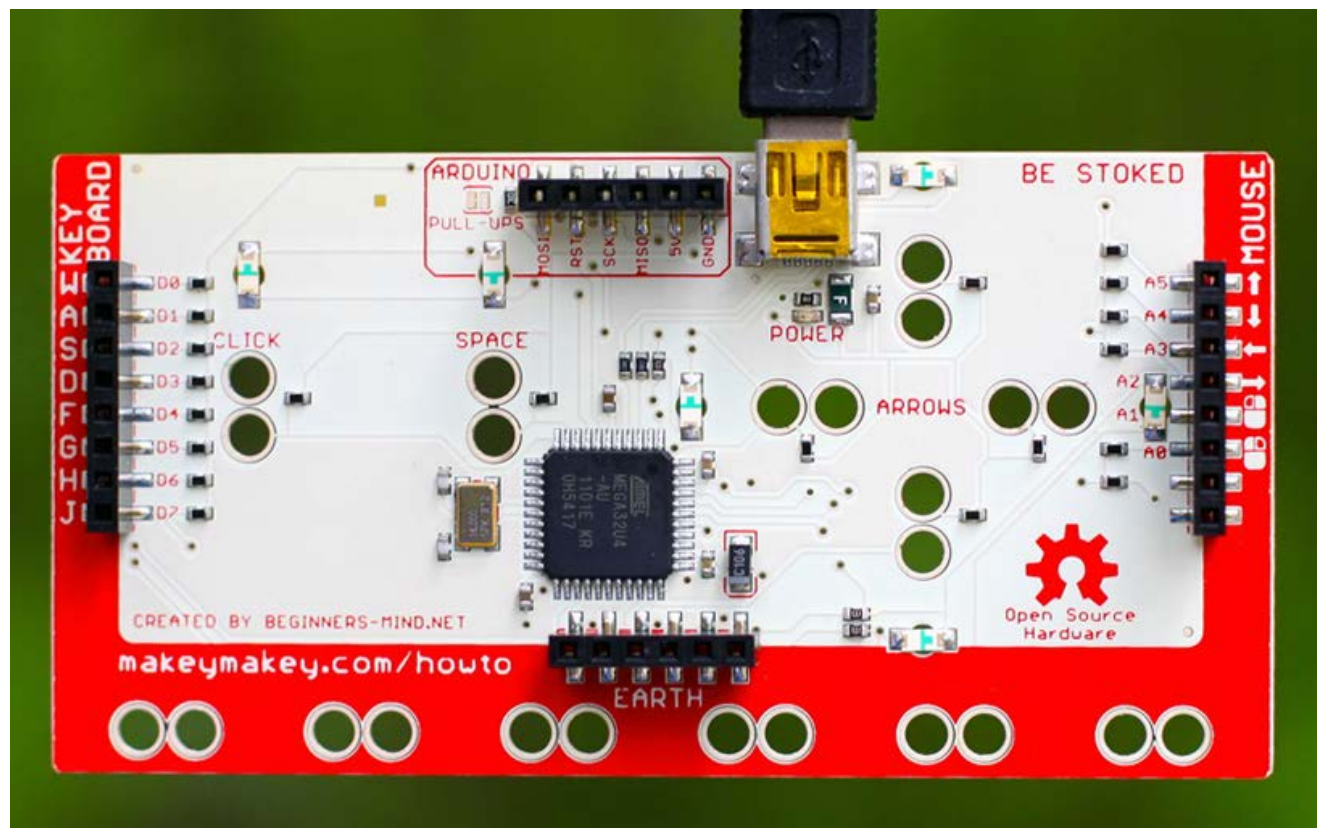
Source code

The code is open source. If you want to hack around with it, download from [github](#).

MaKey MaKey

[MaKey MaKey](#) is a small board that allows you to interface everyday objects to your computer. The board looks like a keyboard to the computer, and when you touch an object it looks to the computer as if a particular key has been pressed on the keyboard. Which key is pressed is determined by where you connect the wires to the board.

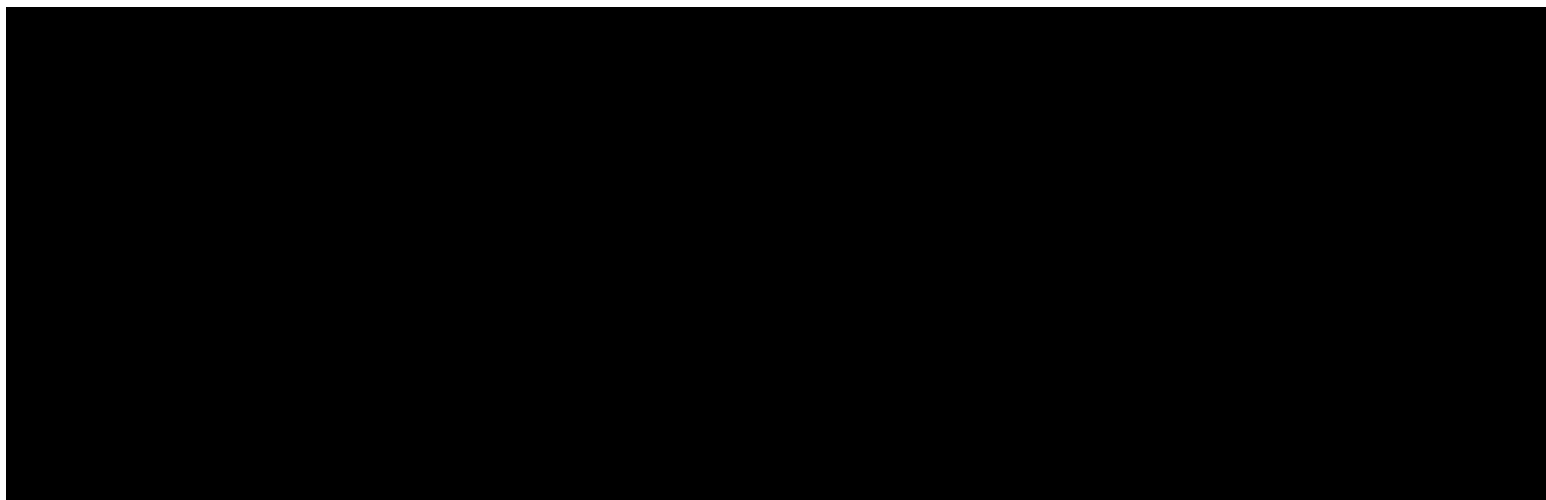
You can control many existing games and apps with no changes to the apps. For example, if you find [Super Hexagon](#) too easy when playing with the keyboard, for an extra challenge you can hook up potatoes as the left/right keys.



Loom game engine

The [Loom game engine](#) is a new 2D game engine aimed at development of casual mobile games.

It uses an ActionScript based language for scripting, and has an impressive mechanism for dynamically reloading assets while the game is running, reducing development time. Check out the cool demo video:





Group Makey Makey sessions

I have put together a page with [ideas on how to use Whack-A-Potato for a group Makey Makey education session](#).

Further inspiration

Whack-A-Potato is not just for kids – grown-ups love it too!

Read how [Debbie Ding produced a customised Whack-A-Carrot game](#) in 45 mins.

All out of potatoes? Don't be afraid to try with other vegetables or fruit!

“ *I used carrots was because I only had carrots left in the house after having boiled all my potatoes to make mash earlier in the day.*



Share this:



Like this:



Comments



Nate Beck - Loom Chief Paper Pusher & Co-Founder says:

June 26, 2013 at 09:07

Whaaaaaaat!!! That is seriously cool! We're giving you a forum title for that!

I've been tempted to make Whack-A-Mole easier so that my little kid could play it, seems like you had the same idea... then turned it to 11!!

Awesome stuff!

[Reply](#)



Ben Garney - Loom Chief Engineer & Co-Founder says:

June 26, 2013 at 09:14

That is probably one of the strangest and coolest things I've ever seen built on tech I've worked on. Awesome work! 😊

[Reply](#)



Josh Engebretson - Loom Loomscript Guru & Co-Founder says:

June 26, 2013 at 09:18

Thank you for creating and sharing Whack-A-Potato. I absolutely love this kind of stuff and even better it uses Loom!

The video is GREAT!

Happy Loom coder is happy!,

[Reply](#)

Trackbacks

adafruit industries says:

June 17, 2013 at 05:01

John Batty shared this wild MaKey-MaKey Monday treat with us — and I have been looking forward all weekend to sharing what is potentially the most energetic “whack-a-to-tato”(sic) performance in a software demo put together by humans [...]

<http://www.adafruit.com/blog/2013/06/17/open-source-customizable-whack-a-potato-game-for-your-makeymakey-makeymakeymonday/>

[Reply](#)

Community Corner: Are you ready to be a part of “Future Crew”? « **adafruit industries blog** says:

June 22, 2013 at 02:10

[...] John Batty shared this wild MaKey-MaKey Monday treat with us — “what is potentially the most energetic “whack-a-to-tato”(sic) performance in a software demo put together by humans. Batty designed this great game app and shared his code, so that you, too, can create a customized “whack-a-mole” style game, populate it with your friends (enemies? vegetables?), and unleash the boundless energy of clever children upon it.” (read more) [...]

[Reply](#)



MAKE | Whack-A-Potato says:

July 10, 2013 at 19:52

[...] It only takes a few minutes to turn children, friends (or enemies!) into moles... More details here... [...]

[Reply](#)

How to Learn Loom SDK | Gamedevtuts+ says:

October 6, 2013 at 19:30

[...] is an open source game made with Loom and MaKey MaKey. You can find more info about the project at its official website, or go straight for the source [...]

[Reply](#)

Leave a Reply

Enter your comment here...