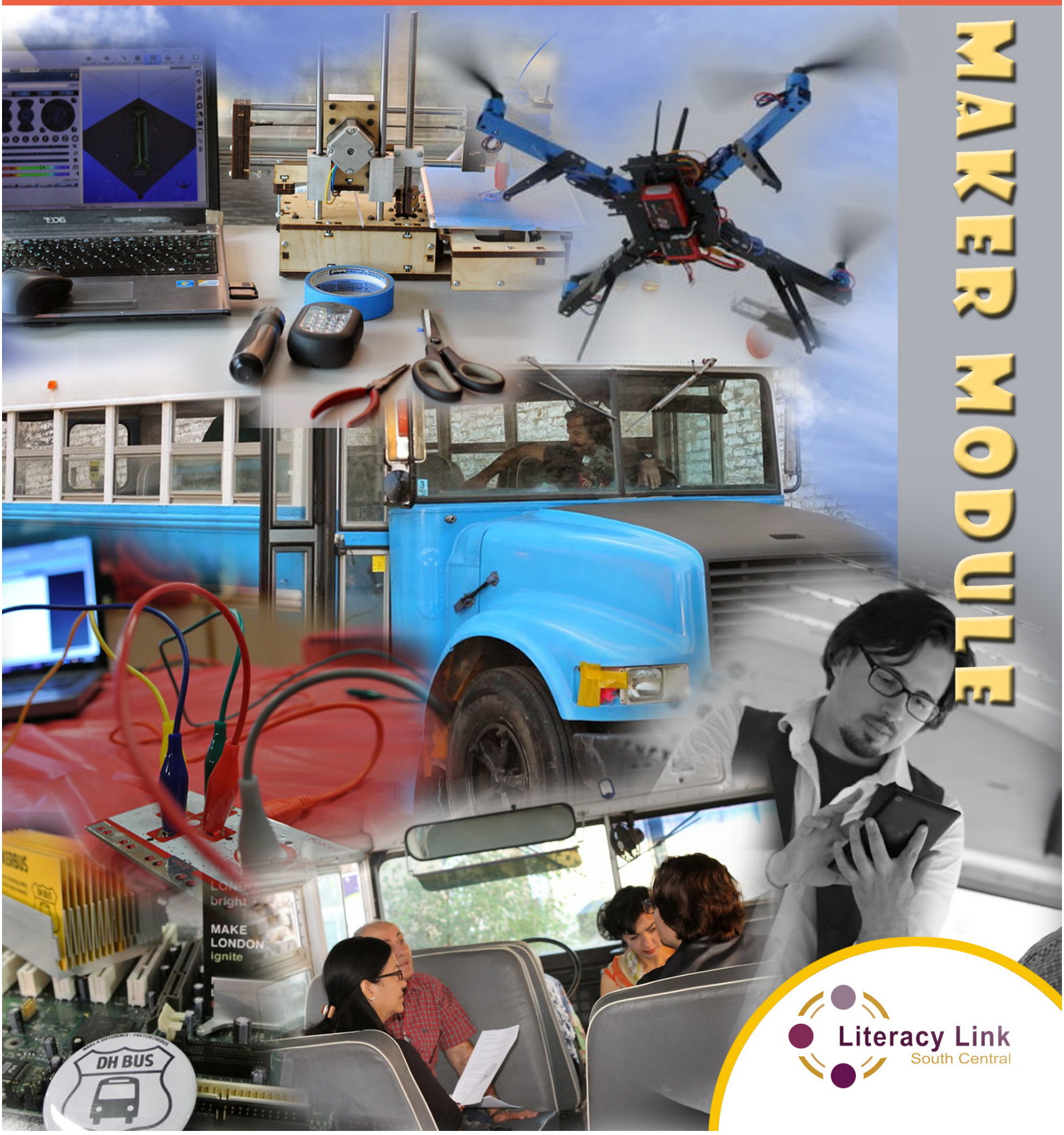
MAKERBUS

MAKEY MAKEY

MAKER MODULE



Literacy Link
South Central

Acknowledgements

These Maker Modules were prepared for the Literacy Link South Central project "Using Technology to Facilitate Connections between Literacy and the Broader Community" (2014).

Maker Modules available in this series include:

Augmented Reality	Leap Motion	QR Codes
Bluetooth	Macrophotography	Tiny Scan
Dropbox	MaKey MaKey	Word Lens
Evernote	Portable Podcasting	The World of 3D

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Introduction

To successfully complete this MakerBus Module, you will need:

1. **Notes to the Literacy Practitioners**
2. **MaKey MaKey Pre Visit Activity**
    - estimated time is 15 minutes
3. **MaKey MaKey MakerBus Module**
    - estimated time is 15 minutes
4. **MaKey MaKey Post Visit Activity**
    - estimated time is 15 minutes

5. **Evaluation Forms (optional)**
    - learners' feedback is submitted immediately following the visit
    - practitioners' feedback to be submitted following completion of any Post Visit Activities
6. **Equipment List:**
    - The MaKey MaKey kit
    - Combination of both conductive and non-conductive items, ex. fruit, vegetables, play dough, aluminum foil, water, cup, plastic container, paper clips, styrofoam cup or plate, a pen, a pencil, etc.
    - A laptop (it serves as your power source)
    - Speakers, if not built into the laptop
    - MaKey MaKey software
        - piano sofware: http://makeymakey.com/piano/
        - drum software: http://www.artcopycode.com/connect/music/
        - tetris software: http://www.freetetris.org/game.php/

Notes to the MakerBus Facilitator: Encourage learners to play once they understand the basics.

All instructional materials are available on the Literacy Link South Central (LLSC) website, should you need additional copies. Please visit: http://www.llsc.on.ca/.

Notes to the Literacy Practitioners

Learning Objectives:

1. Understanding the components of the MaKey MaKey
2. Hooking the MaKey MaKey up to a computer and conductive materials.
3. Using the Makey Makey

Notes to Practitioners:

While optional, it is important to use the Pre Visit Activity for this module so students will know what to expect from the MaKey MaKey and hopefully get them excited to learn more. It is estimated to take about 15 minutes. Competencies for the Pre Visit Activity include: A1.2; A3 and B2.1.

While on the bus, learners will help assemble the MaKey MaKey and then learn about conductivity through play.

Competencies for the time on the MakerBus include: A3; B2.1 and D1.

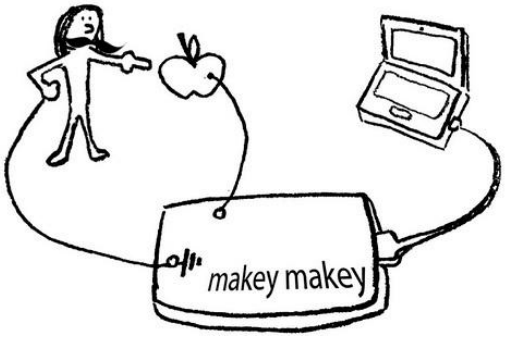
The optional Post Visit Activity gives students a chance to share what they learned, what worked and what didn't work, and think about not only *what* they learned but *how* they learned it. It is expected to take 15 minutes. Competencies for the Post Visit Activity include: B2.1; D1 and F.

MaKey MaKey Pre Visit Activity

Learner Handout

What is a MaKey MaKey?

A MaKey MaKey is a small circuit board that turns everyday objects (like bananas) into touchpads. That's where the name comes from, Make-Key, Make-Key. It works by creating electrical circuits.



How does a MaKey MaKey work?

In this picture a MaKey MaKey is being used to connect an apple to a computer. A small amount of electricity flows from the computer to the apple. To complete the circuit, the person in the picture needs to hold a ground wire. This ground wire works as a return path for the electricity.

For a circuit to work, electricity needs to flow in a circular path, from a power source (when we're using a MaKey MaKey, our computer is the power source), to an object (in the picture, the apple is the object), and then back to the power source (it travels through you back to the laptop).

Watch a video to introduce you to the Makey Makey
https://www.youtube.com/watch?v=rfQqh7iCcOU

What surprised you about what you saw?

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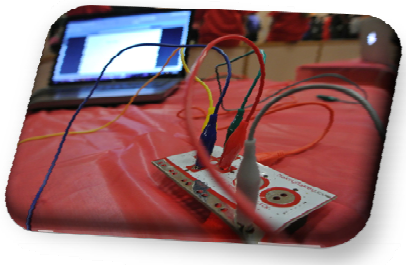
MaKey MaKey MakerBus Module

Tired of the same old way of doing things? Want to change things up from ho hum to WOW? Do you just want to do something fun for a change? The MaKey MaKey is "An Invention Kit for Everyone" and that includes you! It's learning fun!

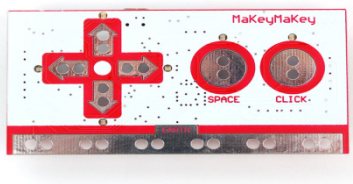
You will:

1. learn about the various components of the MaKey MaKey
2. learn how to hook it up to make it work
3. "play" with the Makey Makey

As you saw in the video, the MaKey MaKey allows you to turn everyday objects into touchpads, which can be used to do things you would normally do using your keyboard and mouse.



Part 1: The components of the Makey Makey



This piece is the MaKey MaKey circuit board. You will use wires to connect objects to the holes in the board, each of which has a different purpose.

1. The up, down, left, and right arrows work just like the arrow keys on your computer.
2. The SPACE circle acts the same as the space bar on your keyboard.
3. The CLICK works the same as left clicking a mouse.
4. The grey bar labeled "earth" is where you will need to connect your ground cable in order to make a complete circuit.

This collection of colourful wires has alligator clips at both ends. One end will be connected to holes in the MaKey MaKey and the other will be connected to an assortment of objects that will become your "keys".

This is a USB cable that will allow you to connect the MaKey MaKey from the USB port of the computer to the circuit board. No software is needed.

Tips and Tricks: Clip onto the harder items (like a cup or pen), but push the alligator clips into softer ones (like the bananas on the video that you watched in the Pre Visit).

Part 2: How to hook up the MaKey MaKey

1. Plug the USB cable into the USB port of the computer
2. Plug the other end into the circuit board
3. Clip one cable to use as ground onto the lower left corner of the board
4. Select some items that you think will work and hook them up using the provided cables with alligator clips
5. Clip the other end onto the circuit board
6. Hold the ground wire, and then touch the objects that have been connected

What happened? Discuss.

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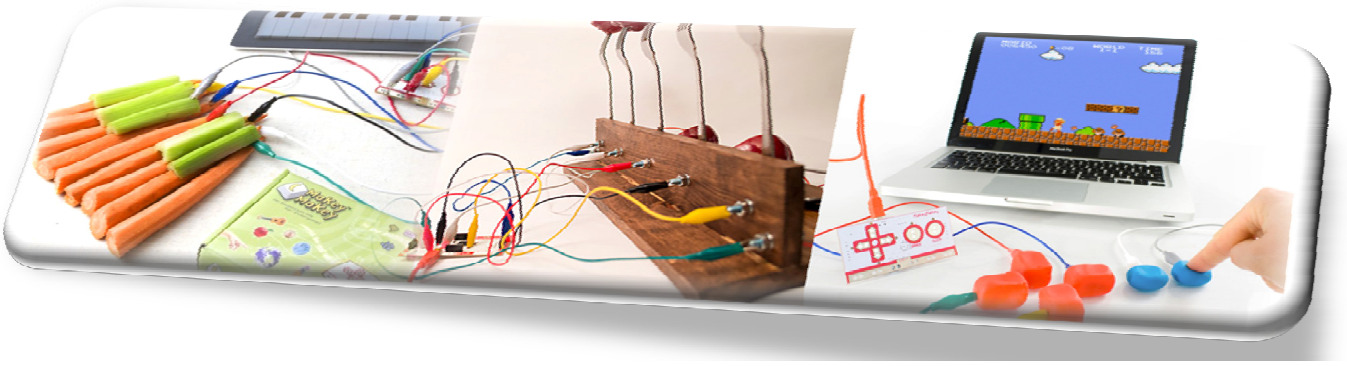
Part 3: Play!

Try out a variety of objects. Learn about conductivity through "play."

Congratulations! You have just learned about conductivity, circuits and how to connect the MaKey MaKey to a computer.



MaKey MaKey Post Visit Activity

Learner Handout

1. What did you learn about electricity and conductivity?

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2. Can you think of 3 other things that you think would conduct electricity?

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3. Can you think of 3 other things that are not likely to conduct electricity?

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4. Was there something interesting or surprising that you learned? Y ☐ N ☐

5. If so, what was it?

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4. What did you learn about your own willingness to experiment?

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5. If you had a MaKey MaKey, what would you do with it?

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6. Discuss your answers with a partner.

With a MaKey MaKey anything that conducts electricity can be turned into a touchpad for your computer. If you want to learn more about what kinds of objects would work with the MaKey MaKey, why don't you explore www.makeymakey.com for ideas?