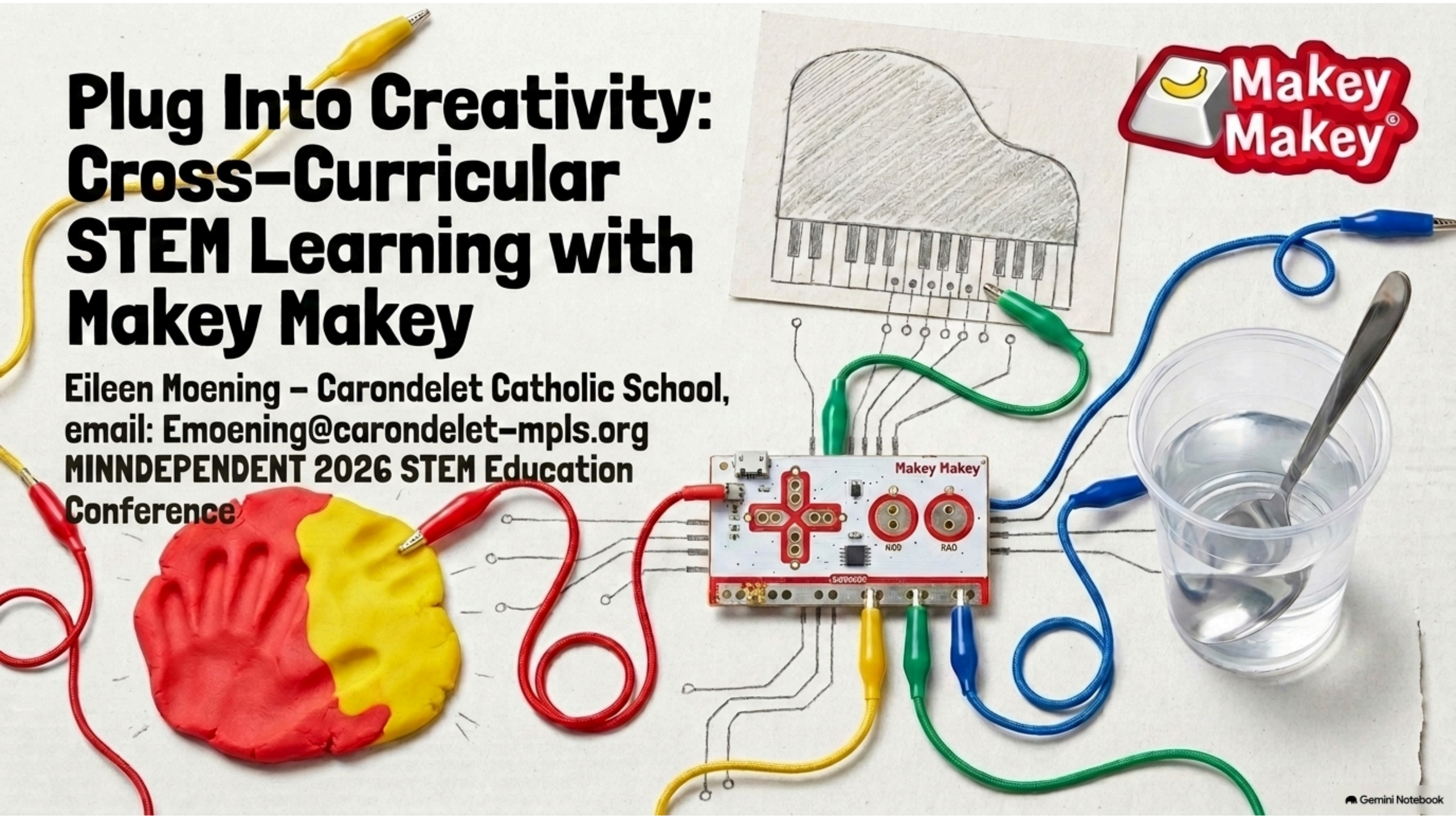


Plug Into Creativity: Cross-Curricular STEM Learning with Makey Makey

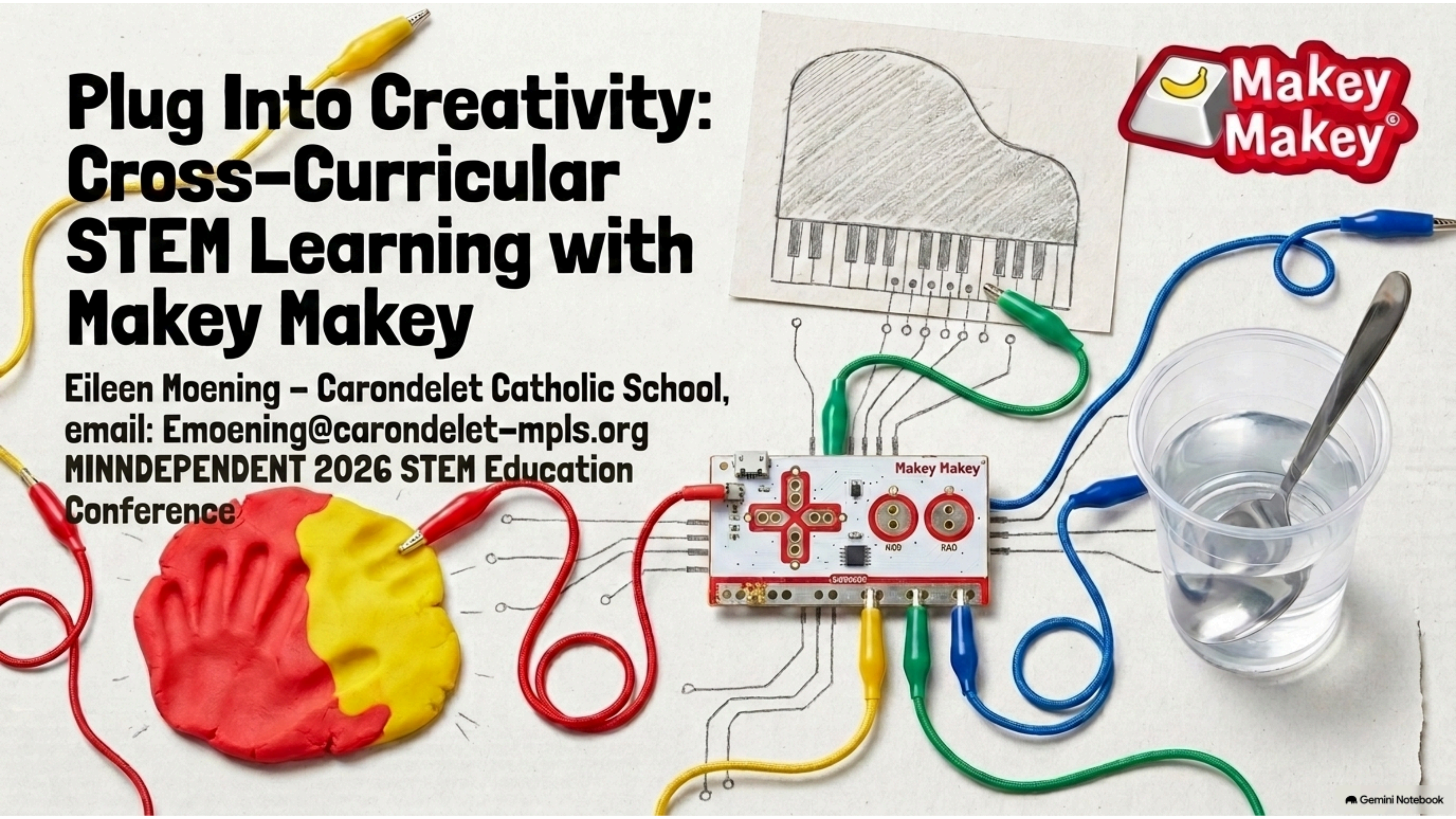
Eileen Moening – Carondelet Catholic School,
email: Emoening@carondelet-mpls.org
MINNDEPENDENT 2026 STEM Education
Conference



Gemini Notebook

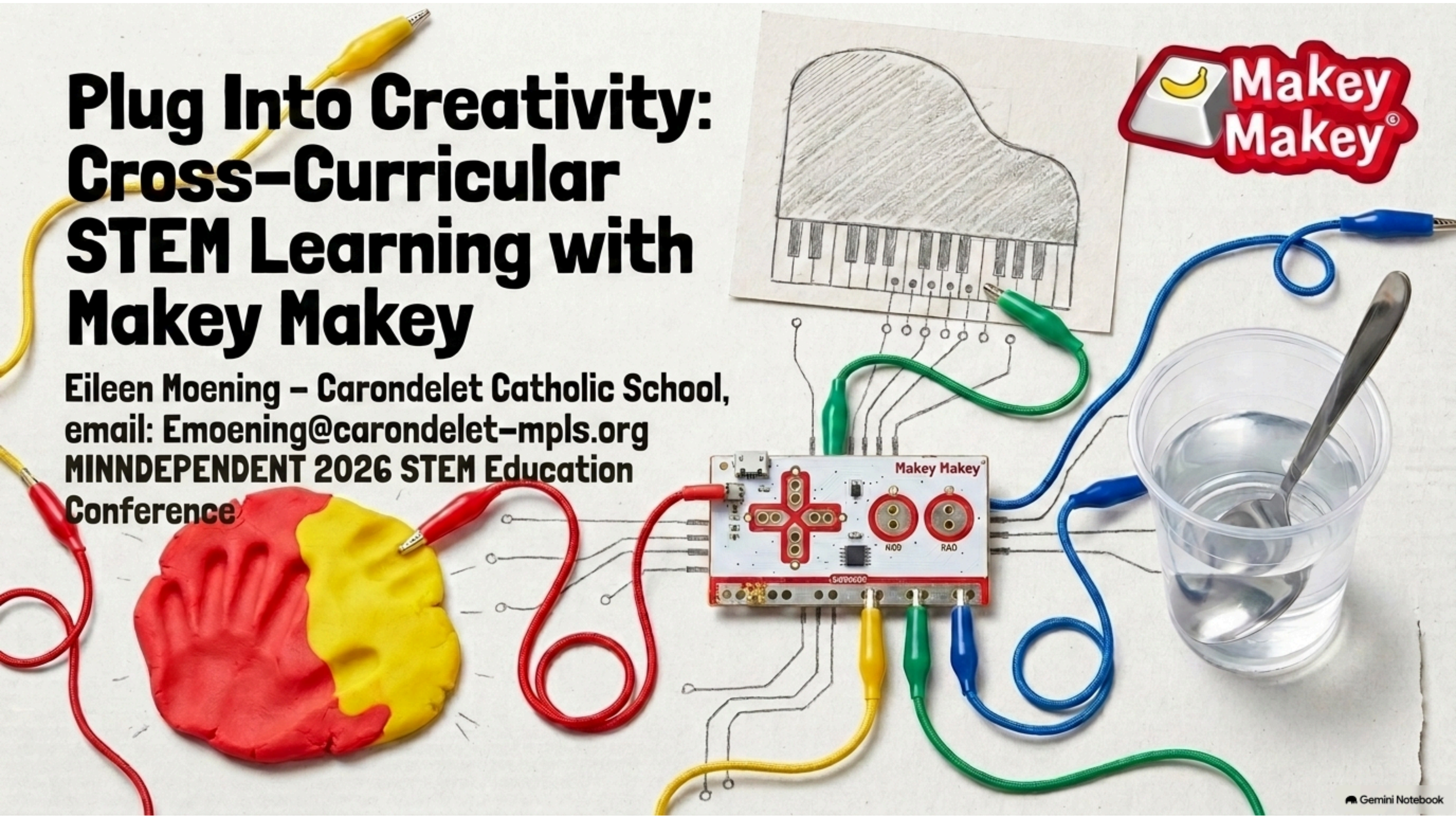
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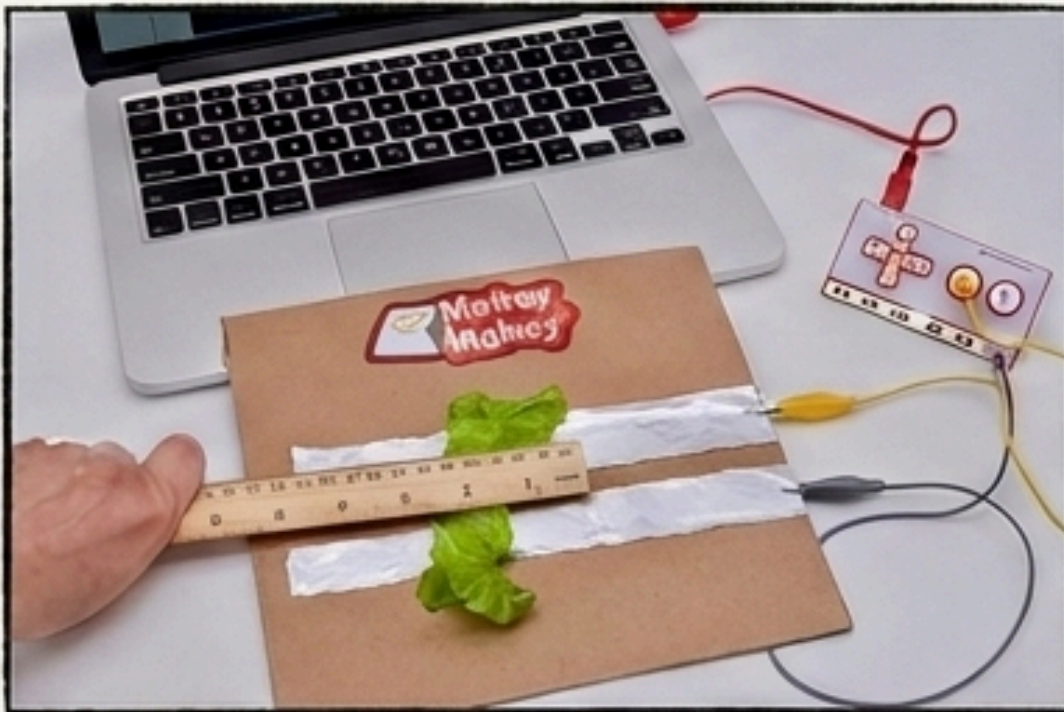
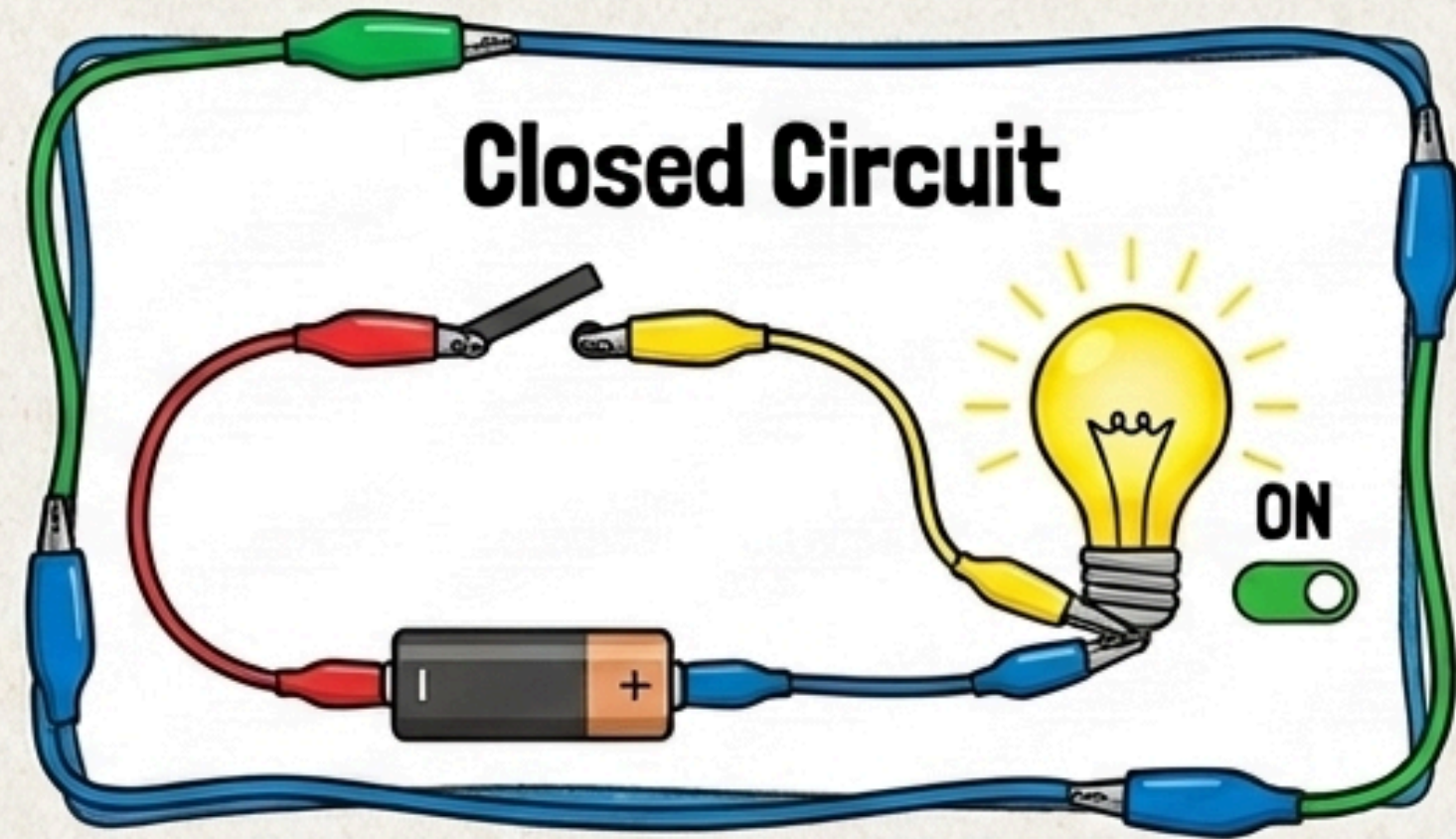
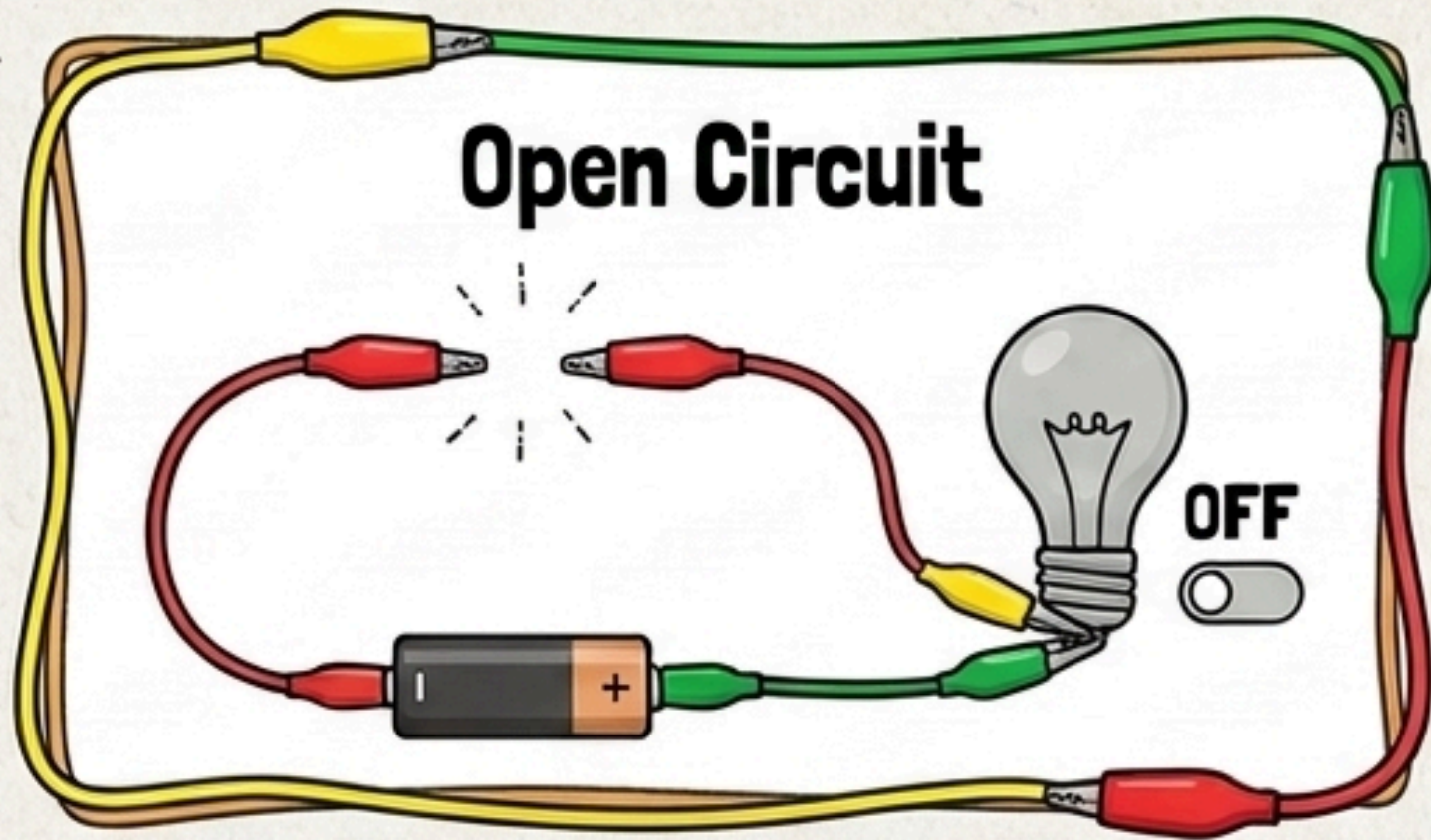


The image is a collage illustrating the use of a Makey Makey board for cross-curricular STEM learning. The central focus is a white Makey Makey board with red and green components, labeled 'Makey Makey' and '5090600'. It is connected to several objects via alligator clips and colored wires (red, yellow, green, blue). To the top left is a drawing of a piano keyboard on a piece of paper. To the top right is a red logo for 'Makey Makey' featuring a yellow banana. To the bottom left is a red and yellow handprint made of clay. To the bottom right is a clear plastic cup filled with water, with a metal spoon inside. A yellow cable is also visible on the left side. The background is a light gray surface.

Gemini Notebook



The Science of the Spark: An electrical circuit is a path through which an electrical current flows. A closed circuit allows flow; an open circuit stops it.



To use Makey Makey Students need to know what is conductive

Test your knowledge!

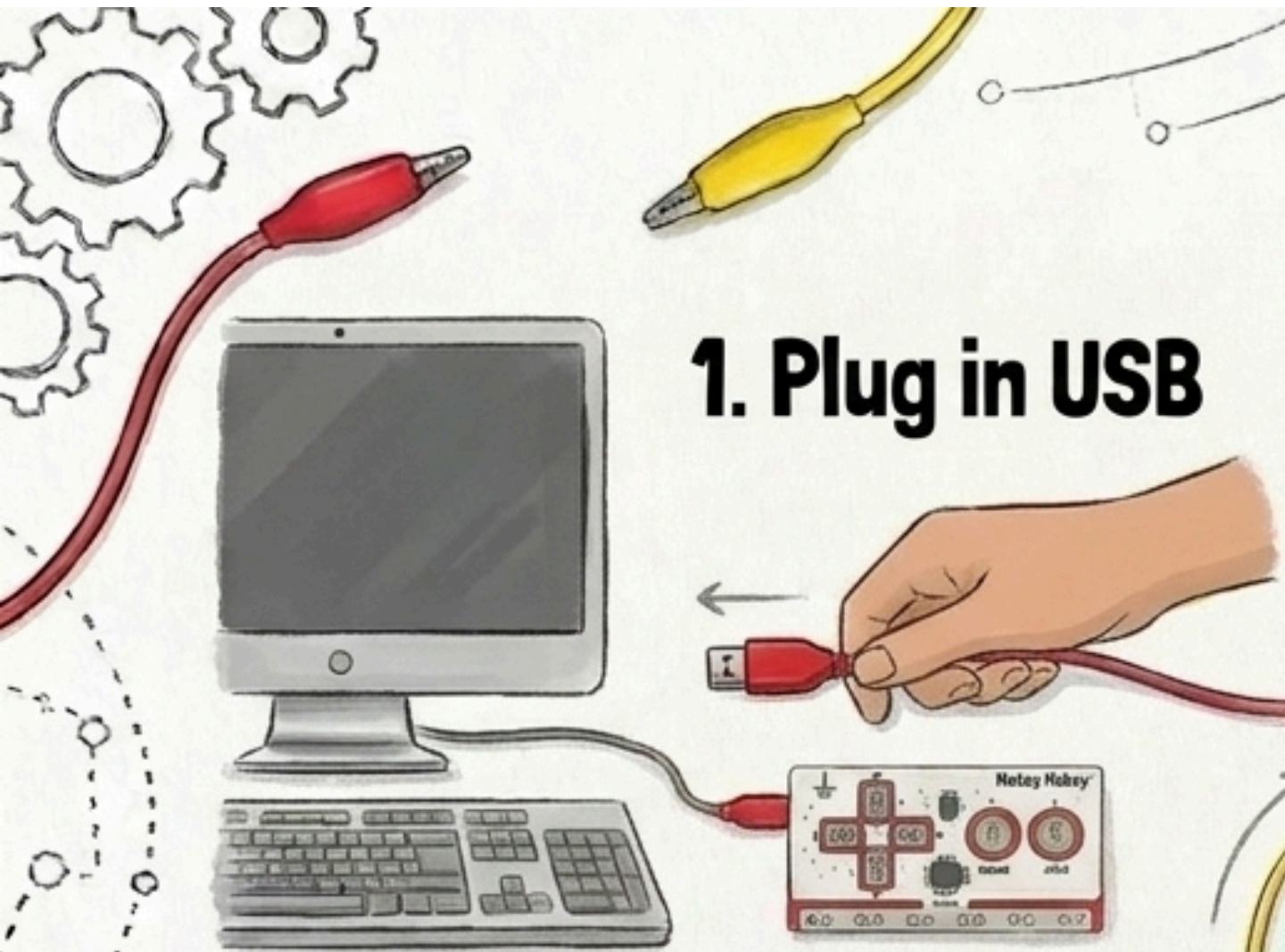


**Makey Makey Makes it easy
with a game!**

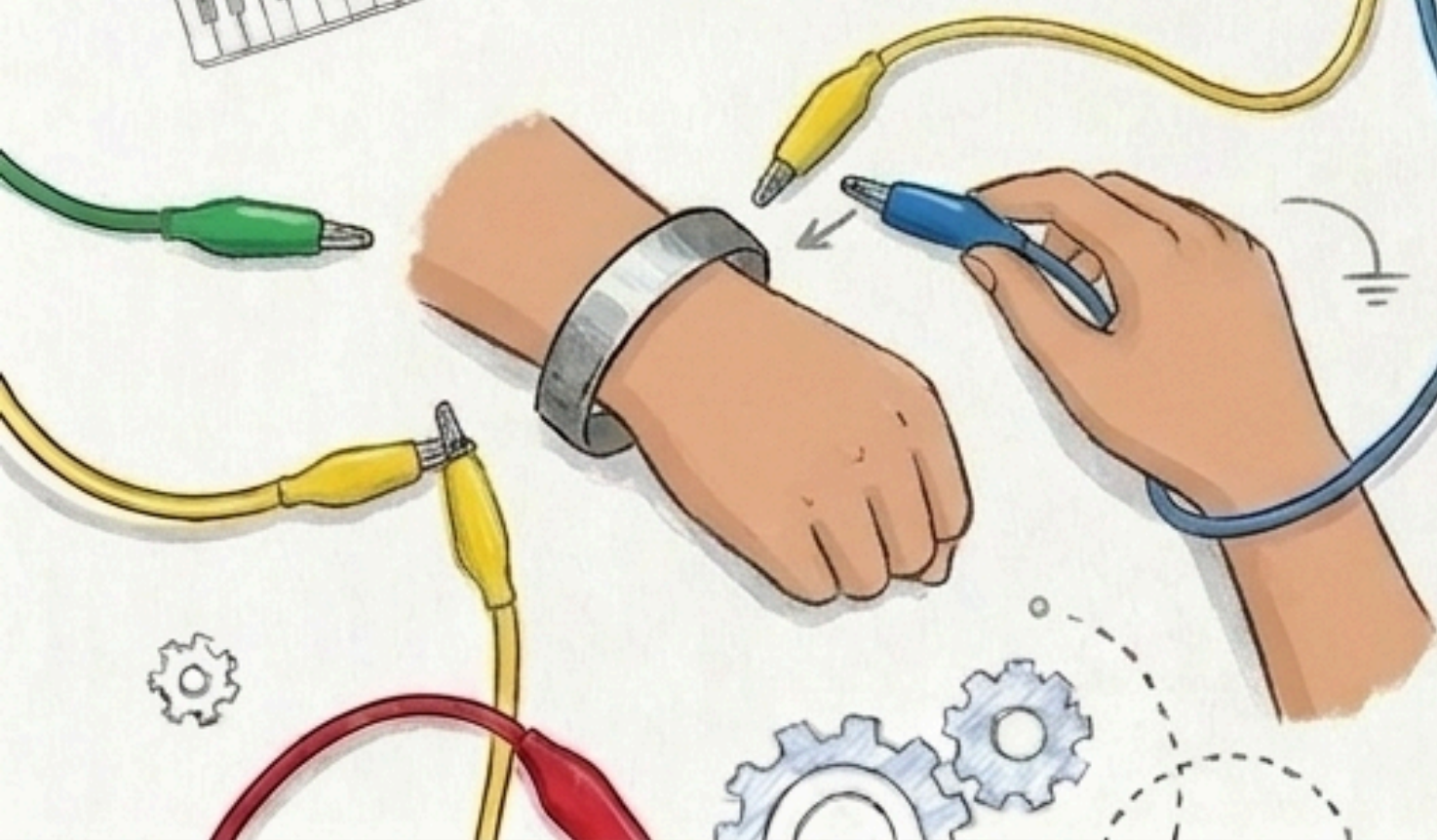
**Scan code to
begin**

Try It!

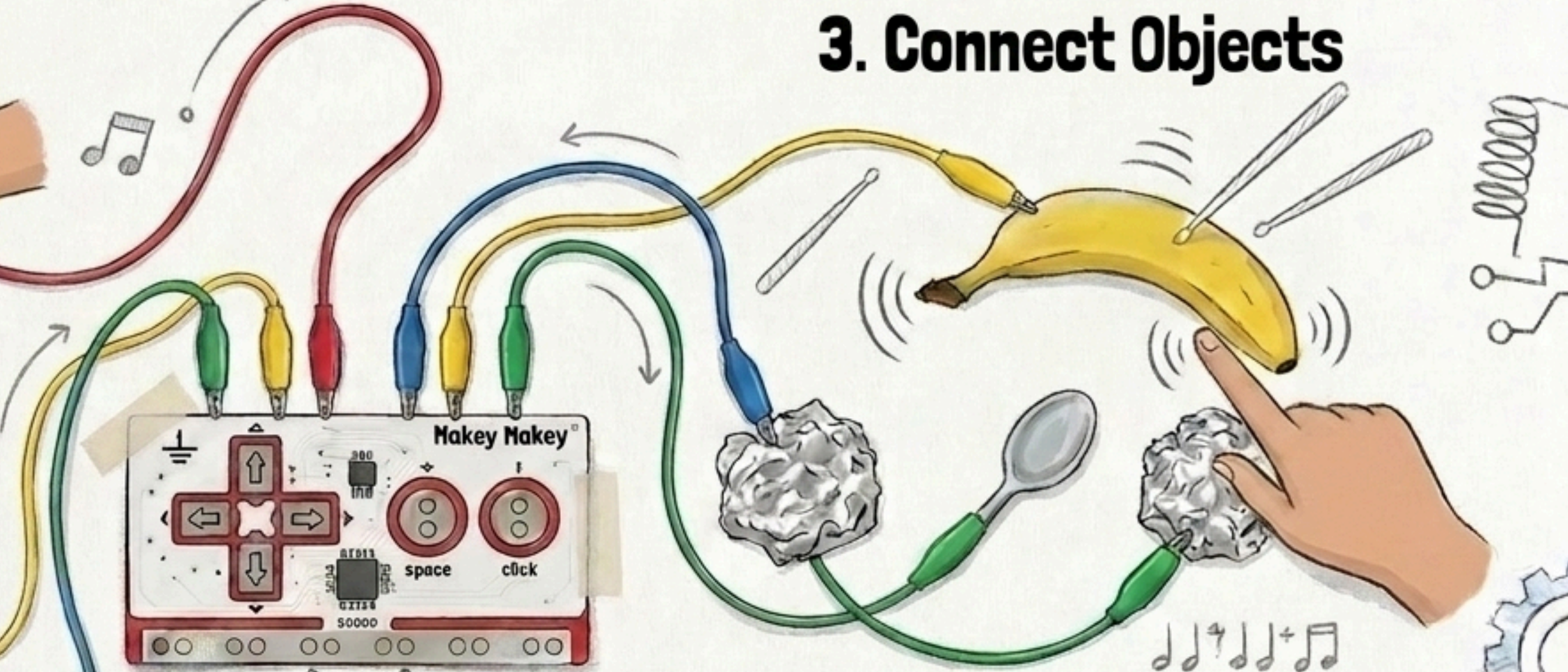
1. Plug in USB



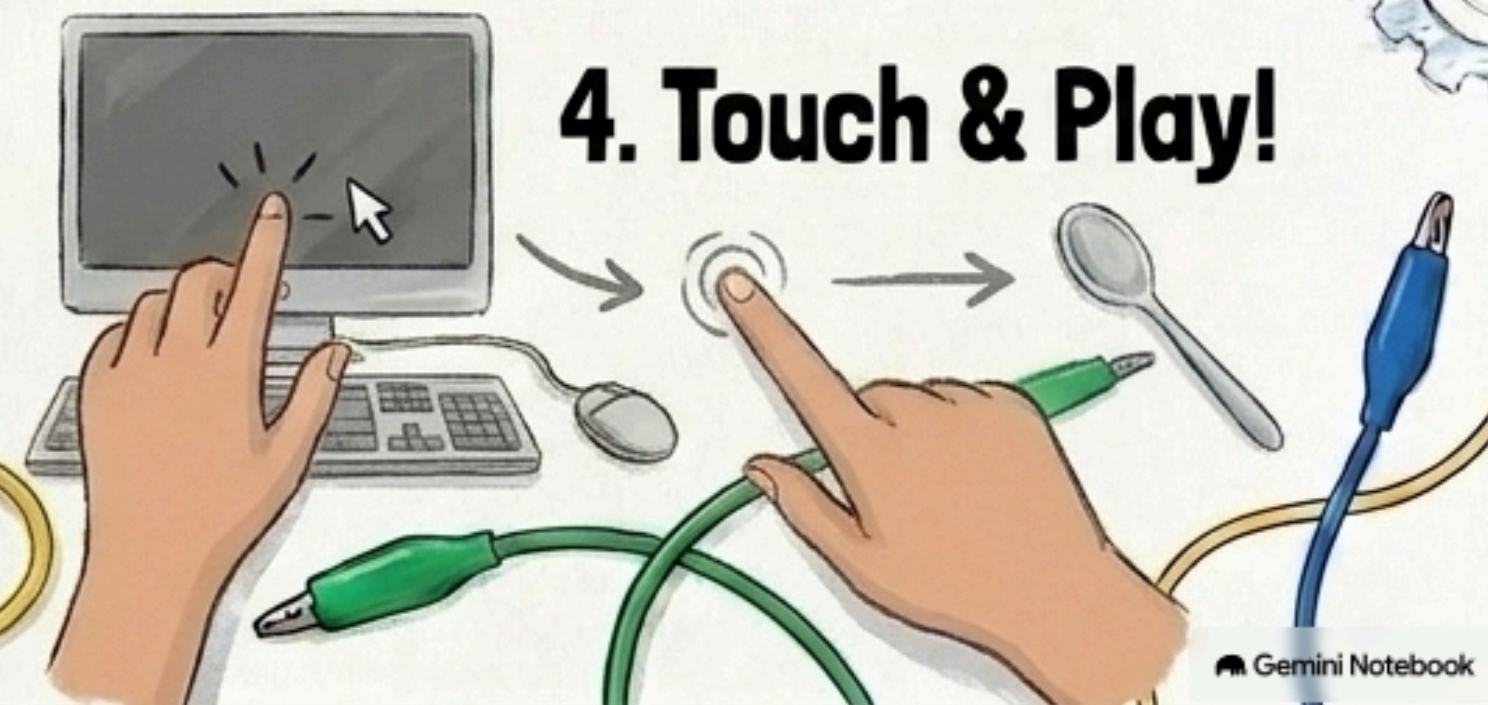
2. Connect to Earth



3. Connect Objects

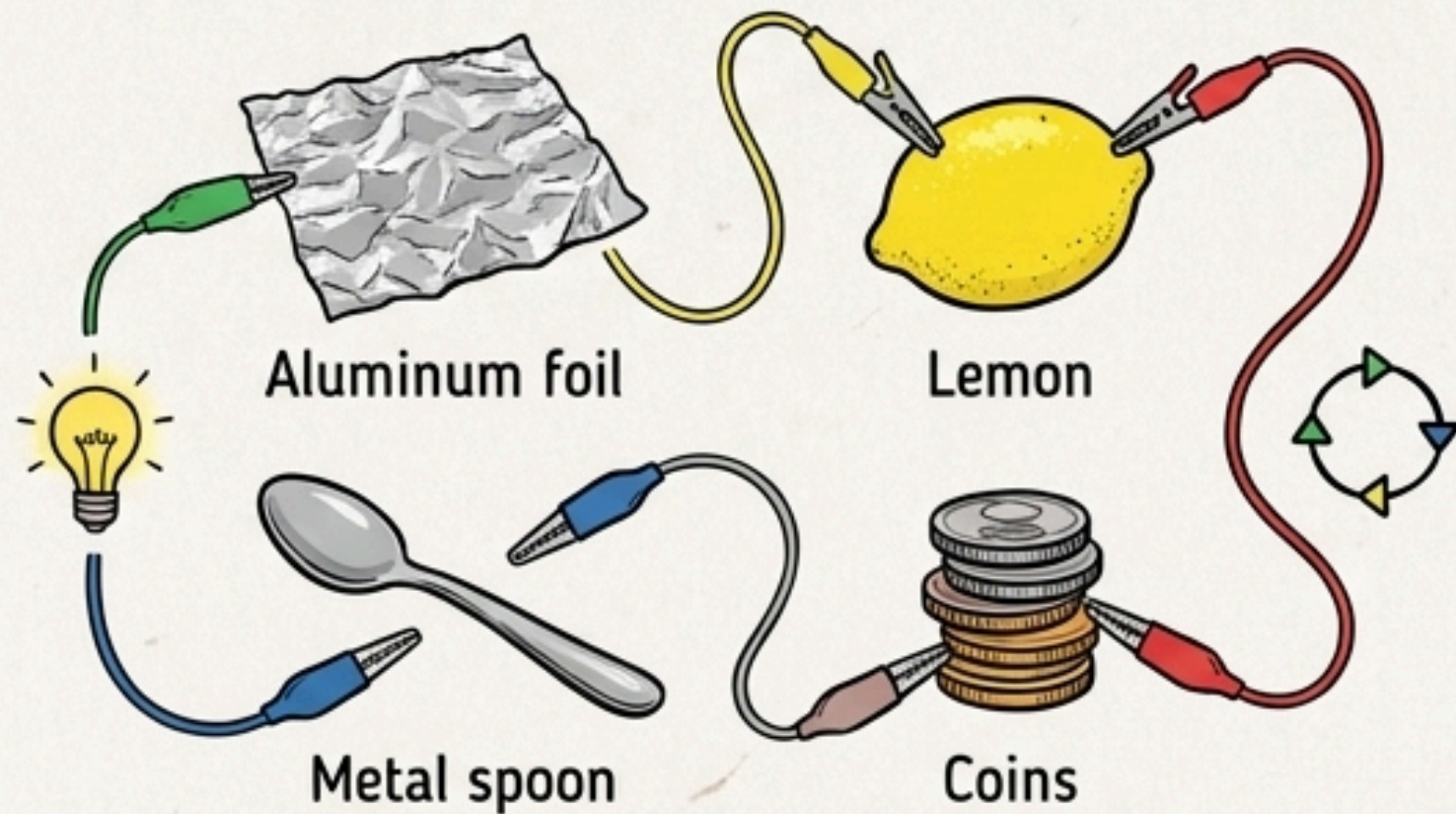


4. Touch & Play!



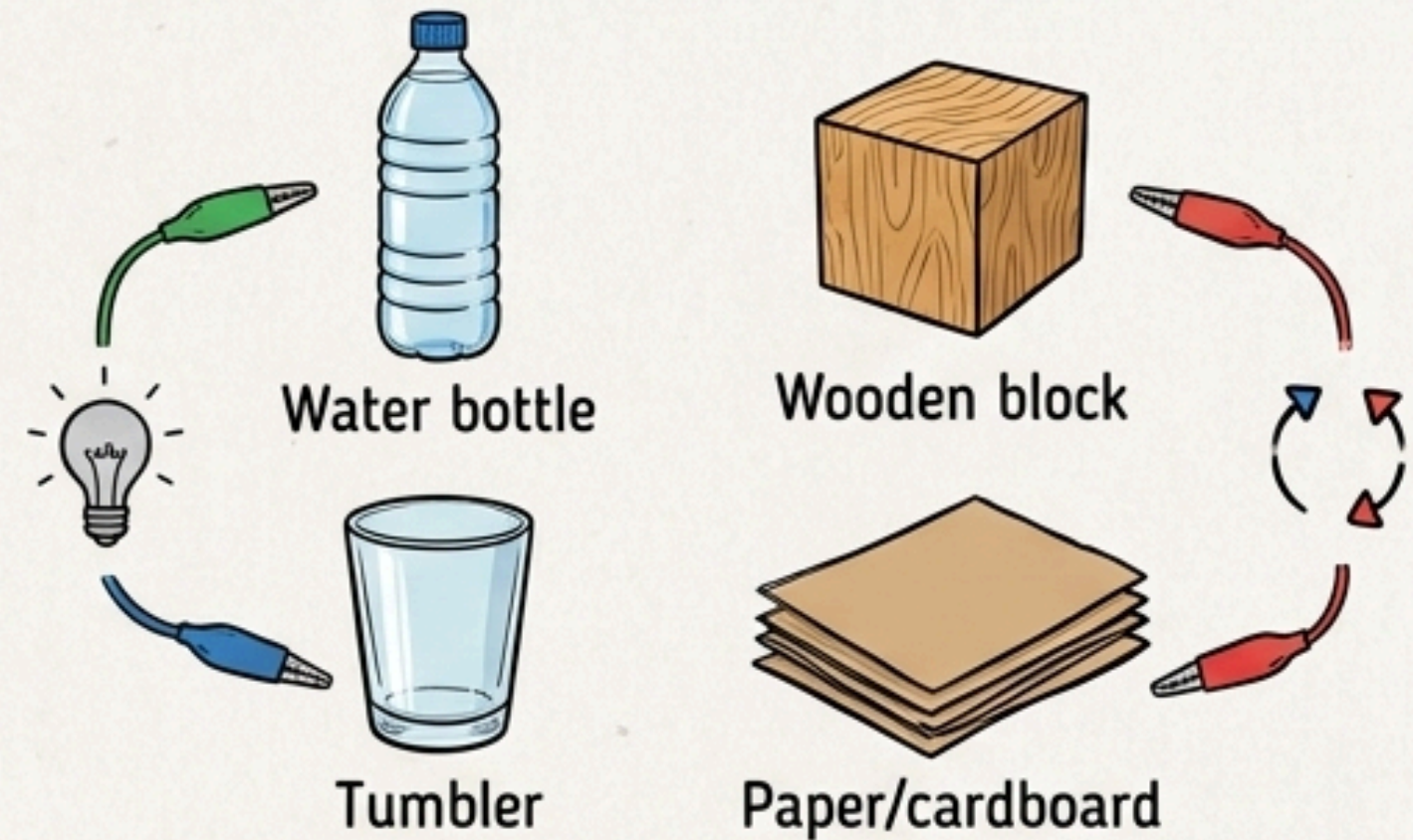
Conductive Vs Non-Conductive

Conductive Materials (Allows Flow)



Examples: Metals, water, fruit, humans.

Non-Conductive Materials (Insulators)



Examples: Plastic, wood, glass, rubber.

Understanding which materials conduct electricity and which insulate is key to building circuits and inventing with MaKey MaKey.

When it doesn't work yet: a 3-step debug.

Symptom: Light won't turn on?



Check: Are you holding the EARTH clip (metal part)? Are you grounded?

Symptom: Key is repeating over and over?

Check: Is the material too moist? (e.g., a wet banana on a wooden cutting board connecting the circuit permanently). 🍌

Symptom: Nothing happening with materials?

Check: Is it an insulator? (Plastic/paper). Try wetting the paper or combining materials.



How can students demonstrate learning by designing something interactive?

Music

(Interactive instruments and soundscapes)

Math

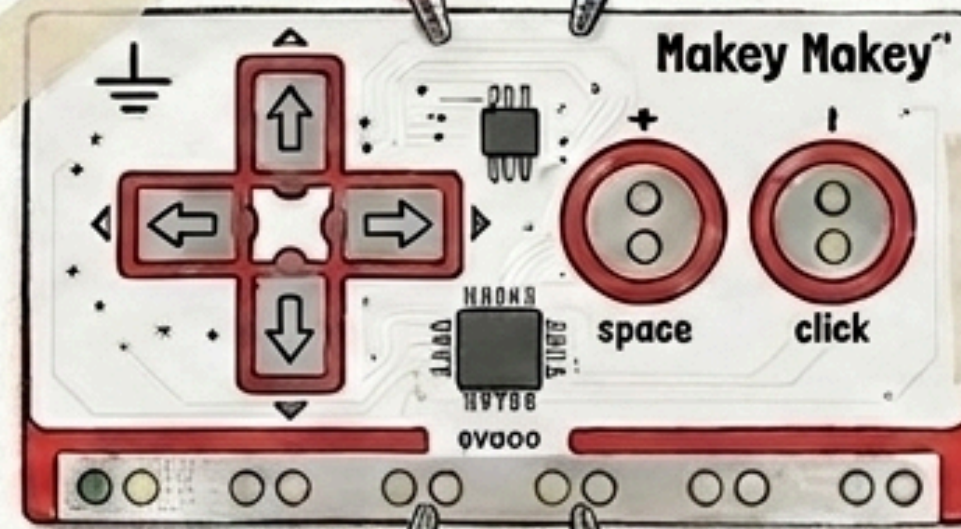
(Word problem posters and analytics)

ELA

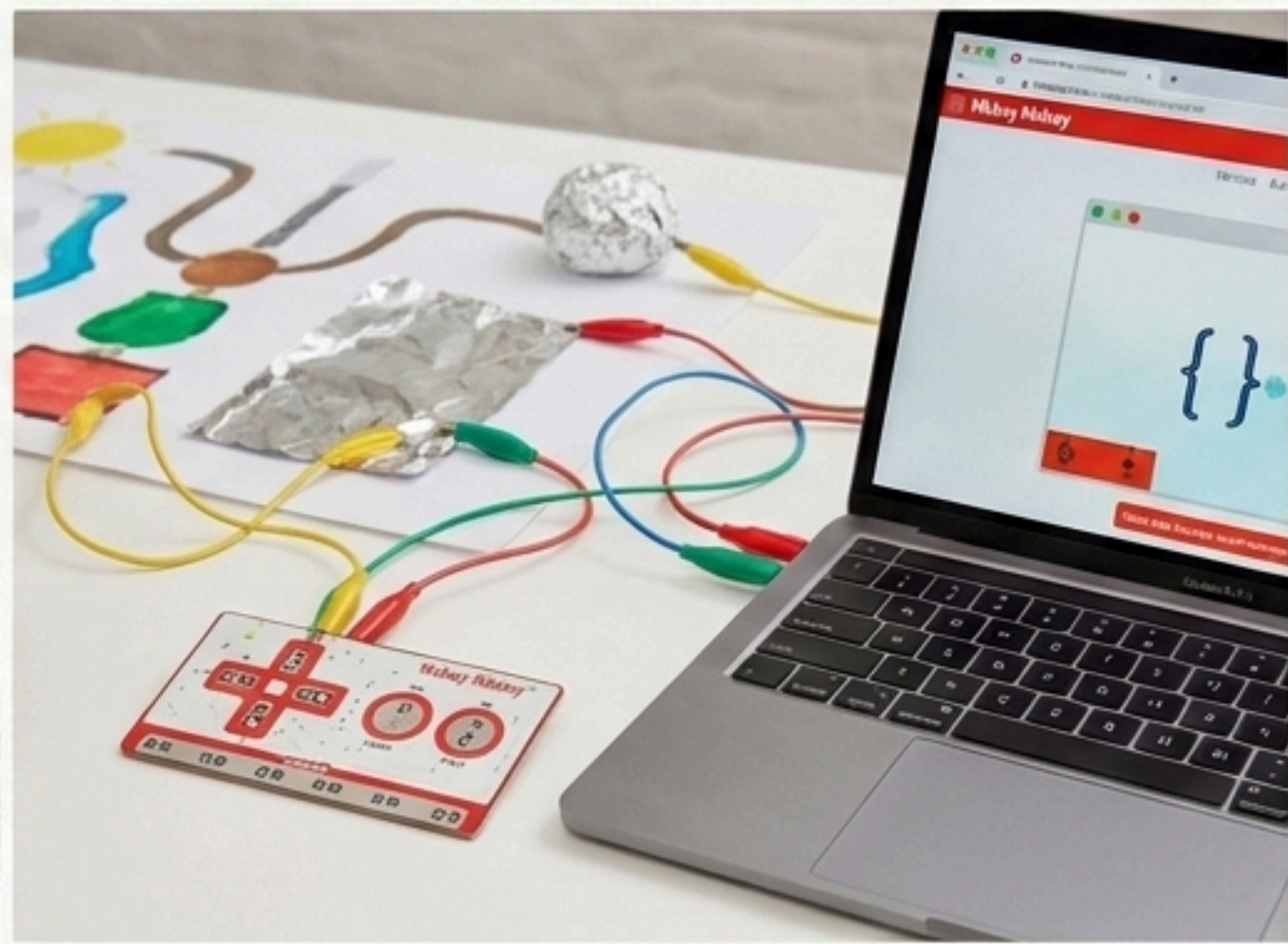
(Storytelling and poetry generators)

Social Studies

(4th grade States project)

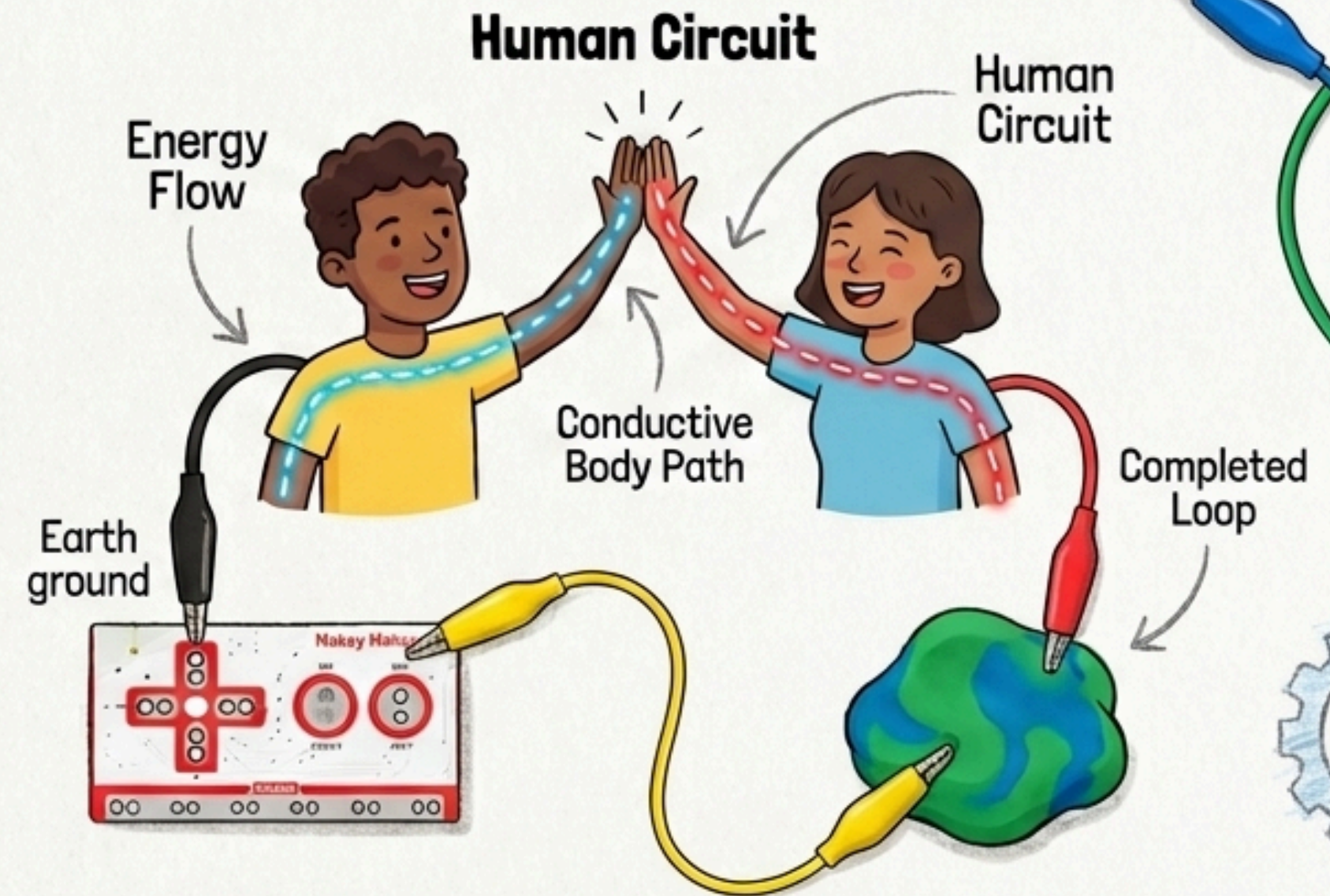


Interactive Poster Controller



Create an interactive poster! Use conductive materials to trigger sounds or animations on your computer, making learning engaging.

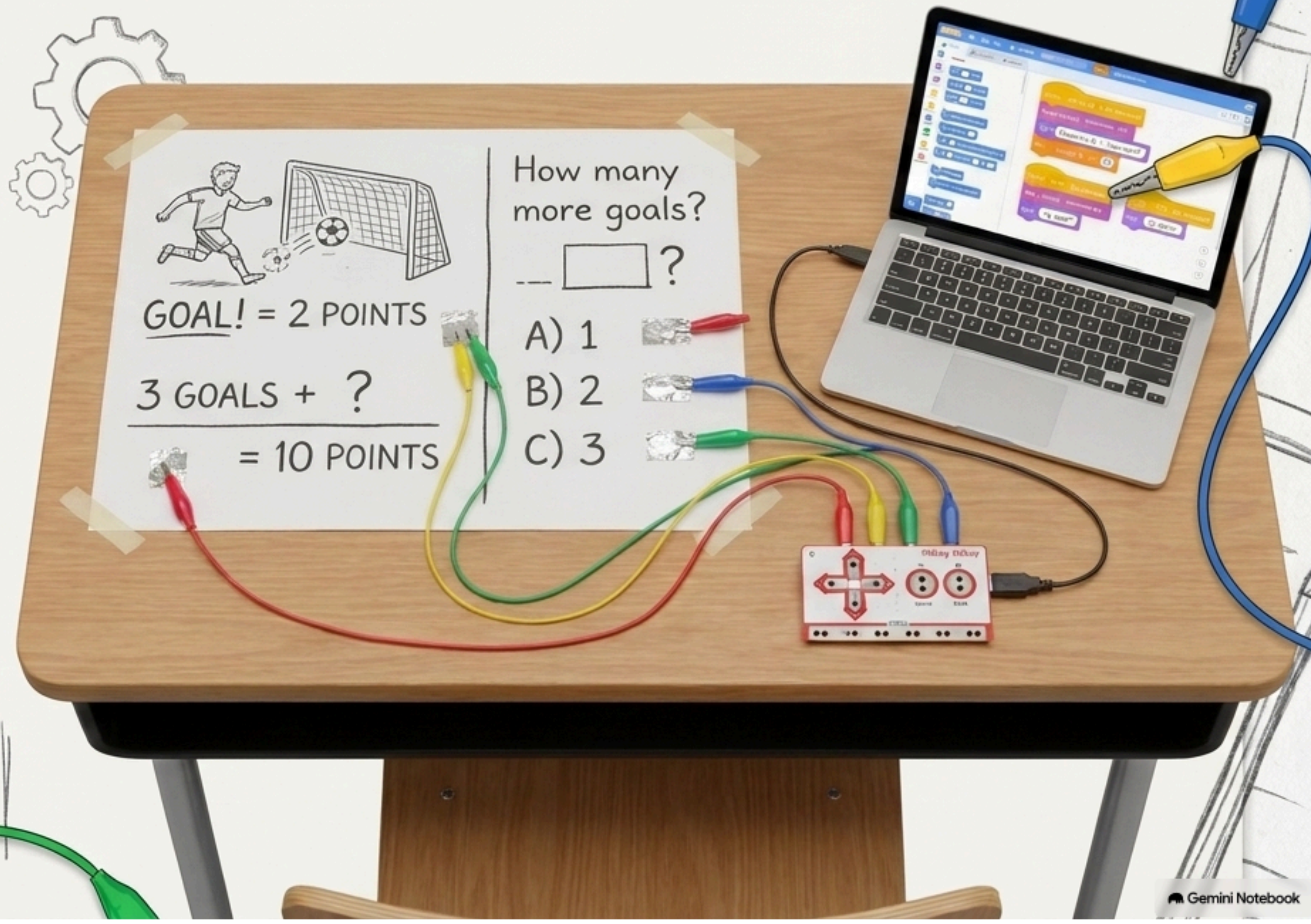
Try with a Friend



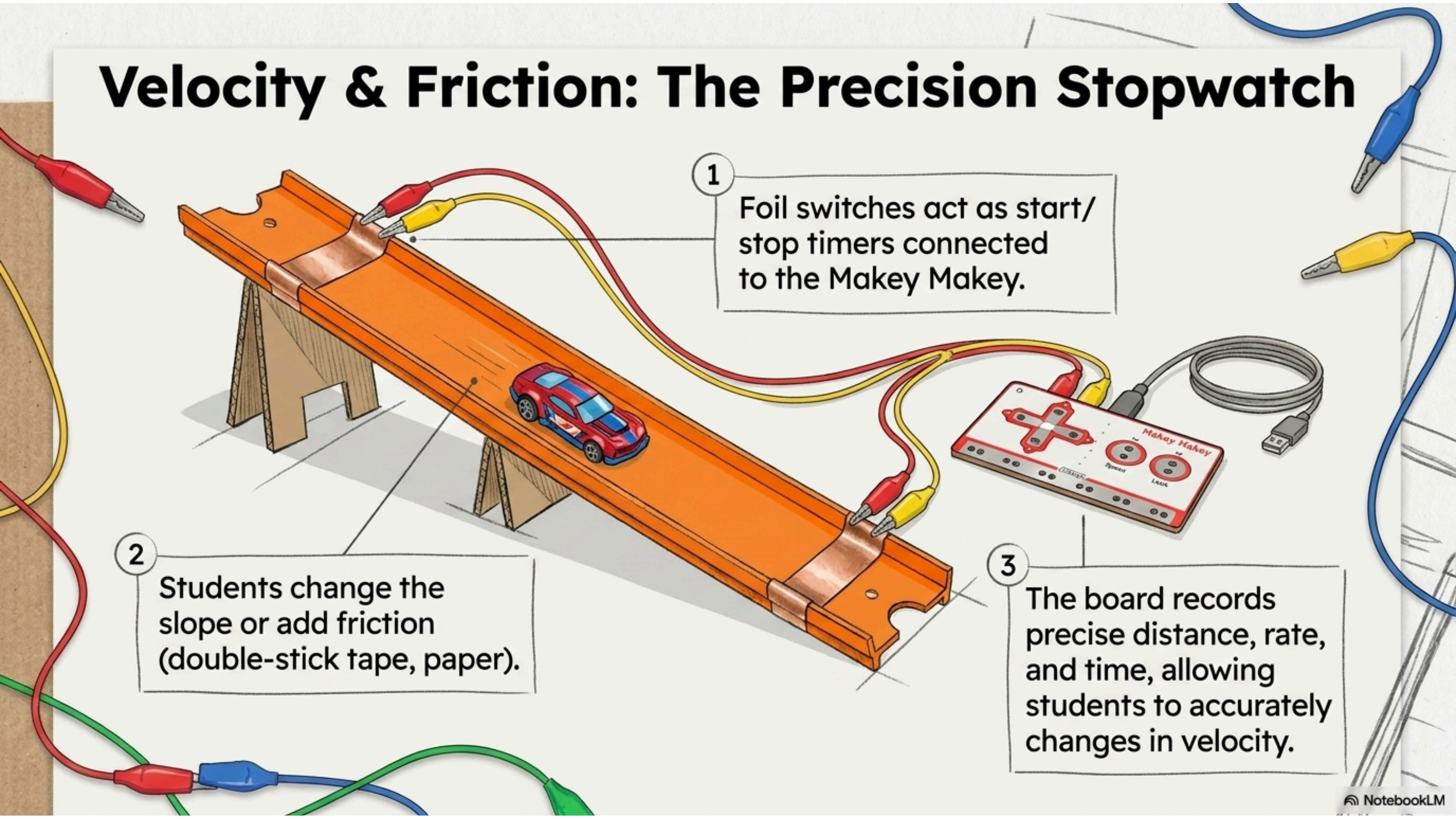
Access makeymakey.com/bongos. Students instantly discover that the human body is conductive by using two people to complete the energy loop.

Interactive Analytics: Gamifying Word Problems

Kinesthetic learners write, answer, and share their own word problems. Conductive touchpoints trigger Scratch code to reveal answers, offer hints, or display data—turning static math equations into interactive games.



Velocity & Friction: The Precision Stopwatch



1

Foil switches act as start/stop timers connected to the Makey Makey.

2

Students change the slope or add friction (double-stick tape, paper).

3

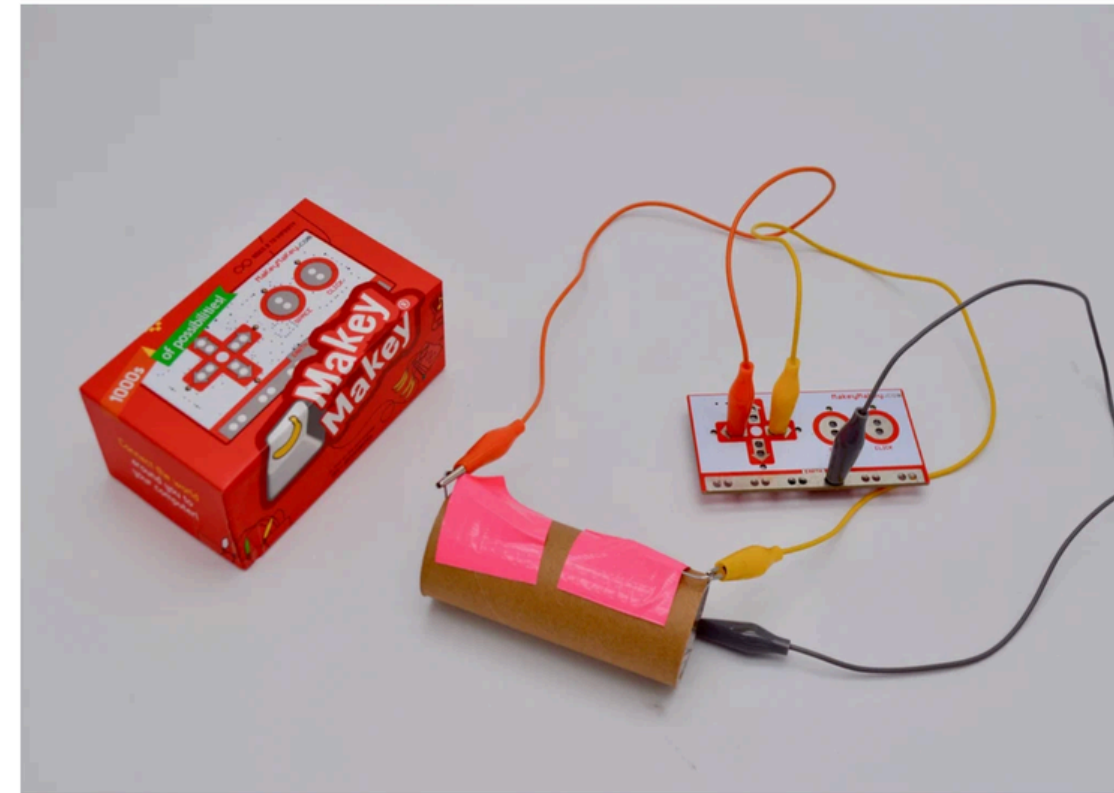
The board records precise distance, rate, and time, allowing students to accurately changes in velocity.

Combined engineering and technology

Building a Tilt Sensor

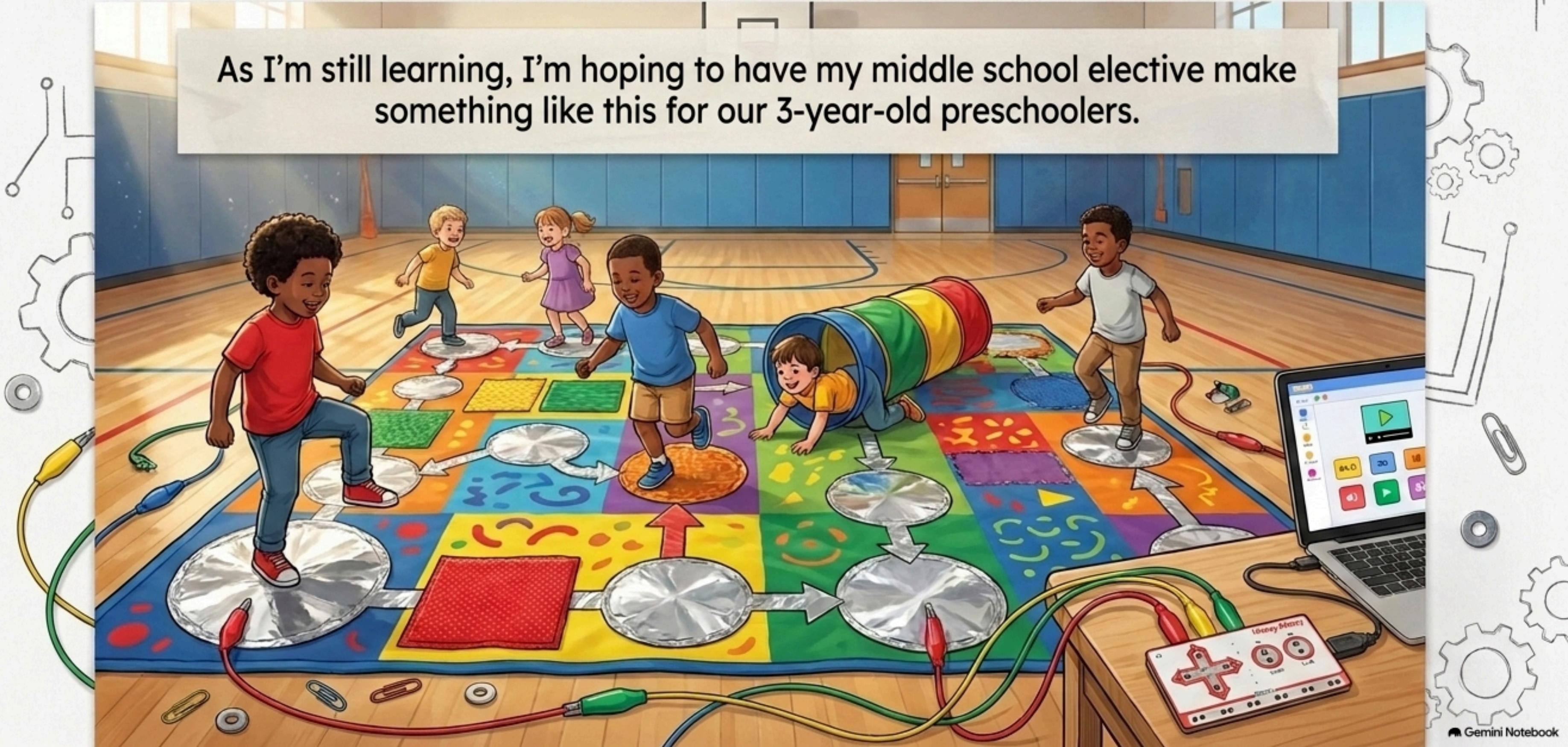


Recyclable Tilt Sensors

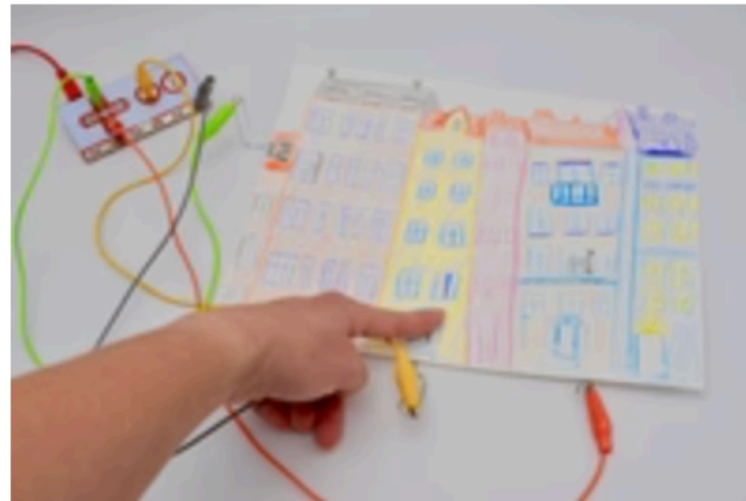


Thinking Big.

As I'm still learning, I'm hoping to have my middle school elective make something like this for our 3-year-old preschoolers.



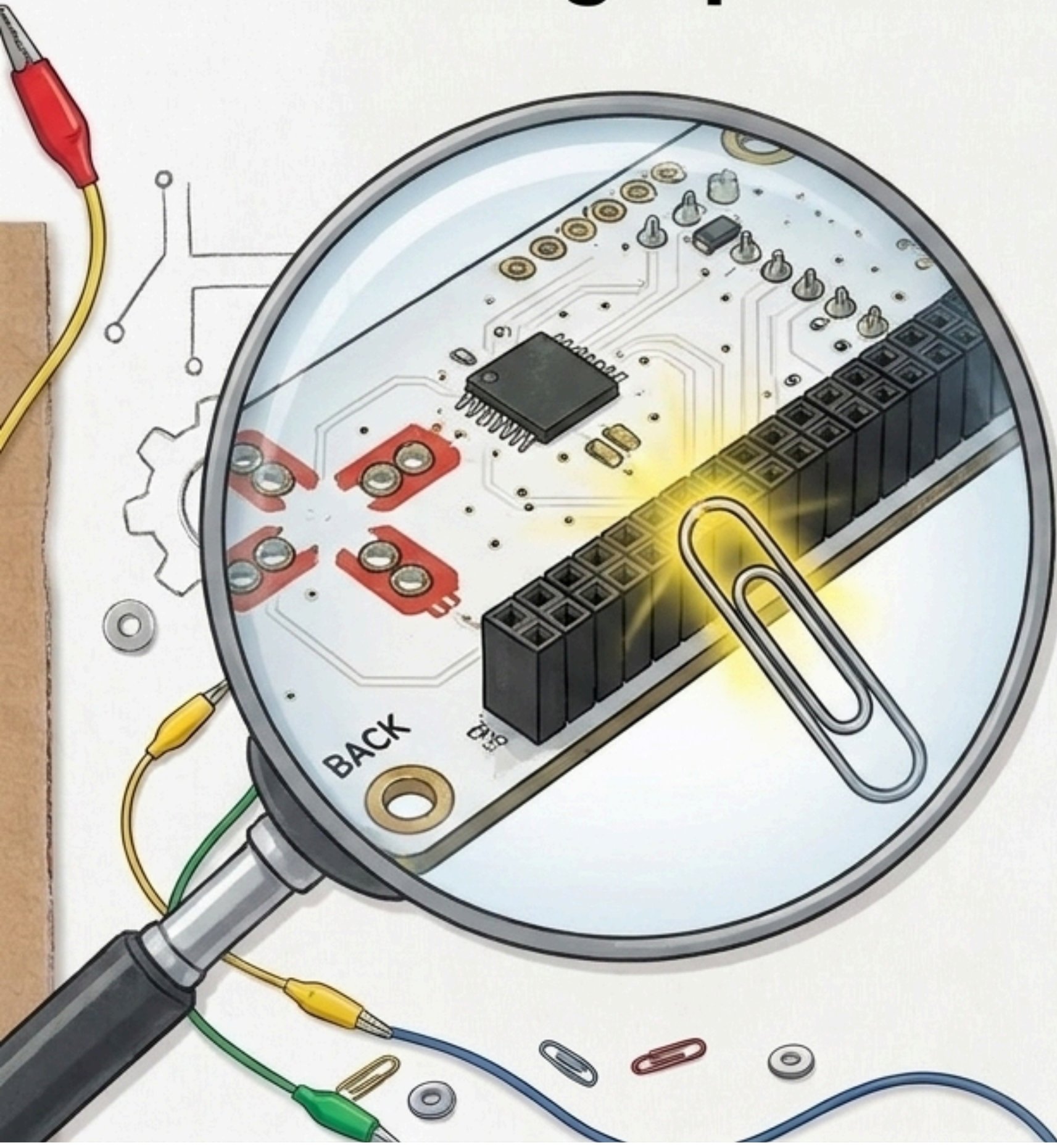
More Resources



**At Home Course for Students
and Teachers**

Link to the
MakeyMakey blog
for teacher
information and
videos. It has a lot
of great teacher
information and
videos.

Leveling Up: Back Header Pins & Remapping



The **front** gives you 6 inputs. The back header pins unlock 12 additional inputs.

Use connector wires, paper clips, or safety pins to access WASDFG and mouse movements.

Access **makeymakey.com/remap** directly in your browser to reprogram keys for complex, multi-player, or multi-key inventions.



Empowering the Inventor

Makey Makey is more than a circuit board; it's a landscape that fosters curiosity. **You have the tools.** You have the curriculum. Now, let your students **play, tinker, and invent.**

Eileen Moening | Access presentation resources and links provided.

