micro:bit LIVE

December 3-4 2021

virtual

powered by fair chance learning

A sprint through graphing & data collection options

Why?

https://vimeo.com/445128371

my Sci

mySci is a project of

Washington University in St. Louis
INSTITUTE FOR SCHOOL PARTNERSHIP

with generous support from

Bayer Fund

Mass	Trial	Temperature of the Material Over Time (°C)											
		0 sec	30 sec	60 sec	90 sec	120 sec	150 sec	180 sec	210 sec	240 sec	270 sec	300 sec	After cooling 300 s
50g	1	21.9	22.2	22.6	23.0	23.4	23.8	24.2	24.6	24.9	25.3	25.6	24.6
	2	22.6	23.1	23.6	24.2	24.7	25.2	25.7	26.2	26.6	27.1	27.4	26.2
	3	19.9	20.1	20.6	21.2	21.7	22.2	22.7	23.2	23.8	24.2	24.7	24.4
	Avg												
150g	1	21.4	21.4	21.4	21.6	21.7	21.9	22.0	22.2	22.4	22.7	22.9	23.5
	2	21.3	21.6	21.9	22.2	22.5	22.9	23.2	23.5	23.8	24.1	24.4	24.5
	3	19.9	20.0	20.2	20.6	20.9	21.3	21.7	22.1	22.4	22.3	23.1	23.5
	Avg												

mySci Do: Instructions

http://bit.ly/MicroBitTempGraph

Options

- Logging vs. Streaming
  - Wired vs. Wireless Streaming
- Environment: MakeCode vs. Mu editor

Logging Data

- Logging: Saving data on the micro:bit
- Pros: Can “deploy” micro:bit for data collection
- Cons: Limited data collection ; Multi-microbit synchronization
- A quick tour https://microbit.org/get-started/user-guide/data-logging/

Streaming

- Streaming: Data “streams in” in real-time
- Pros: responsive, easy to synchronize, can handle lots of data
- Cons: more setup may be needed

Wired: USB

- No batteries
- Easy setup / easy with MakeCode
- Less "red tape" / resources for classes
- How:
  1. Data format & output
     https://makecode.microbit.org/device/data-analysis/writing
  2. Data viewer in console
     https://makecode.microbit.org/device/data-analysis/viewing

Quick Demo!

DIY Web Pages

- Use a JavaScript library: https://github.com/bsiever/microbit-webusb
  - Example: https://2020-sd.github.io/microbit/DIY Web pages

Wirelessly Stream Data: Multi-Microbit

- Pros: Easier setup for classroom,“many micro:bit to one computer” collection possible!
- Cons: Requires more than one micro:bit per “data collector”

See: https://makecode.microbit.org/device/data-analysis/remote

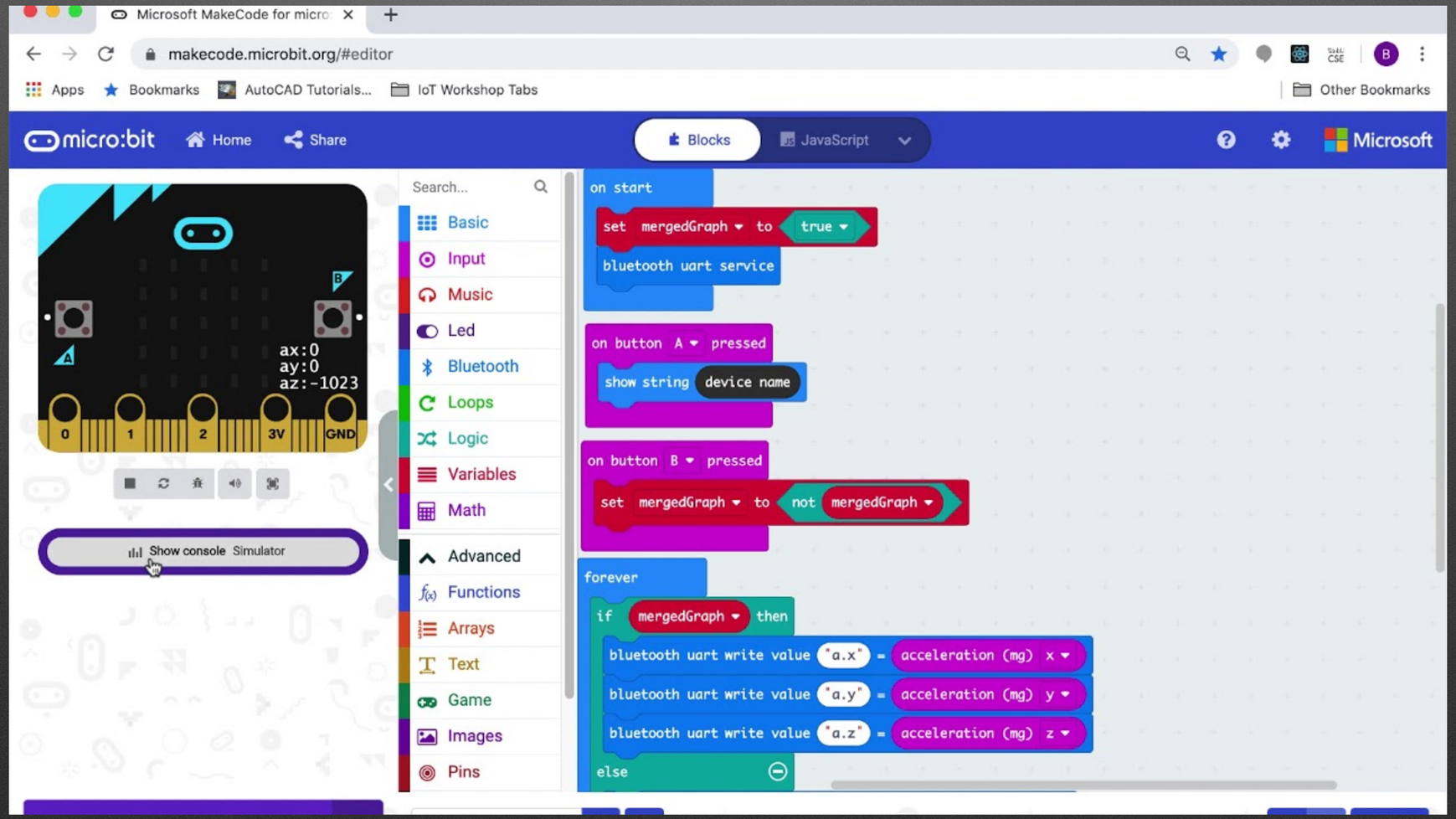
Wirelessly Stream Data: Bluetooth

- Pros: Wireless with single micro:bit
- Cons: beta feature; awkward setup; bluetooth may be disabled in schools

See: https://makecode.microbit.org/device/data-analysis/remote

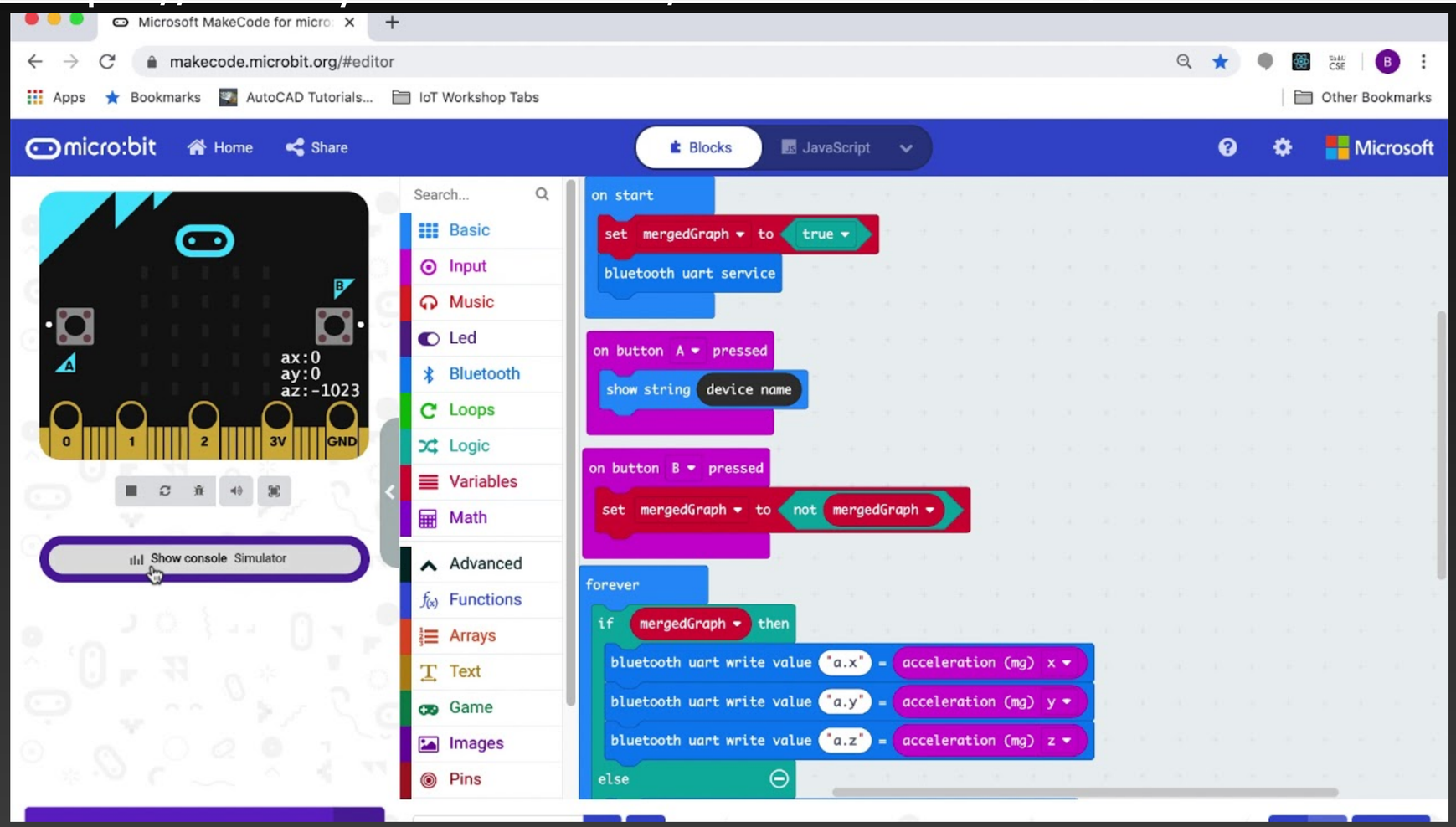
Wirelessly Stream Data: Bluetooth

https://www.youtube.com/watch?v=eJiddQwKPck&t=108s



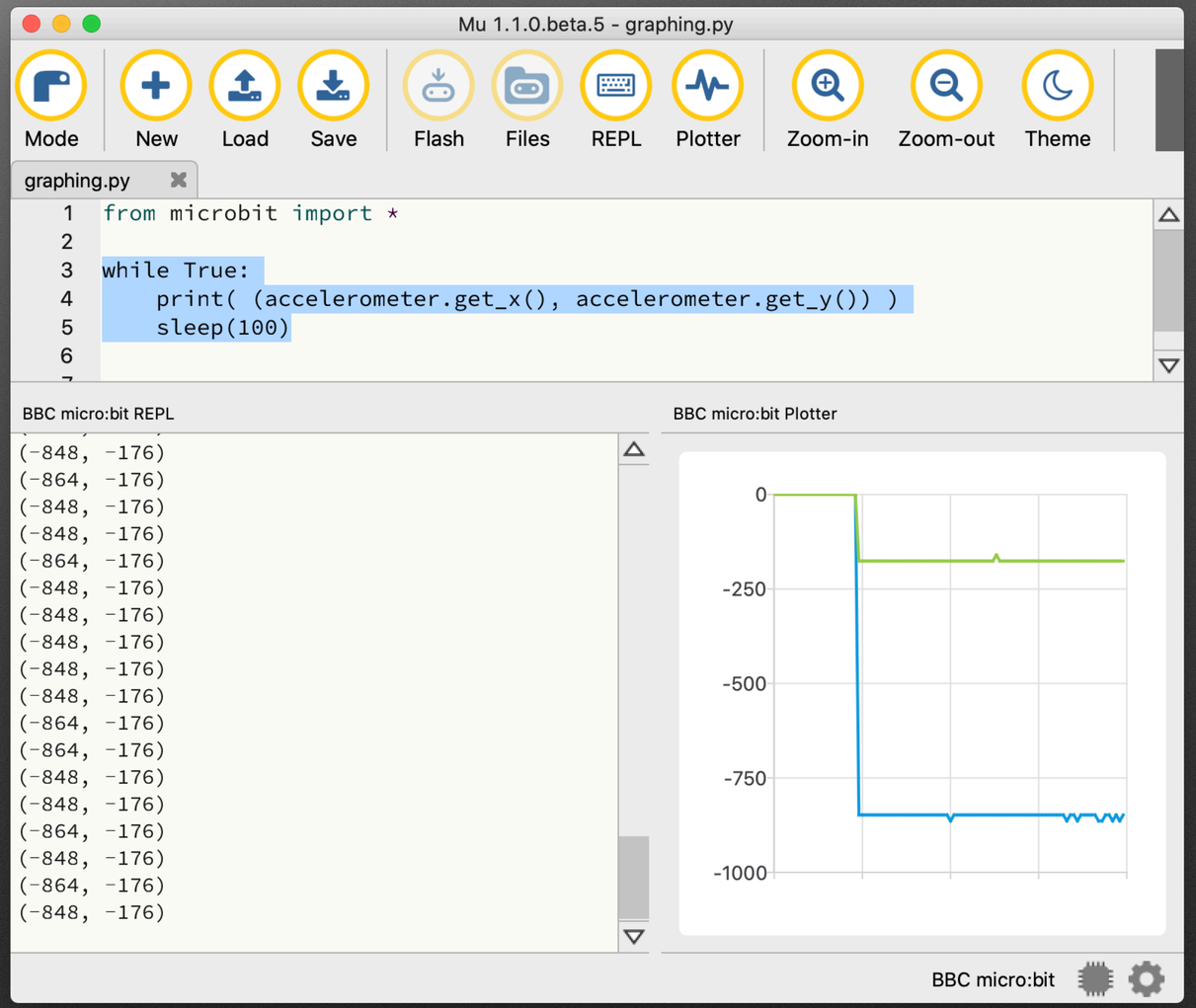
Wirelessly Stream Data: Bluetooth

https://www.youtube.com/watch?v=eJiddQwKPck&t=108s



Mu Editor & Python

- Mu editor (MicroPython) can graph too
  - Requires “tuples” of data



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