

2023-2024 Quality Education Fund Thematic Network - Tertiary Institutes

STEAM Education with Self-directed and Progressive Learning of Engineering Design Process for Problem-solving

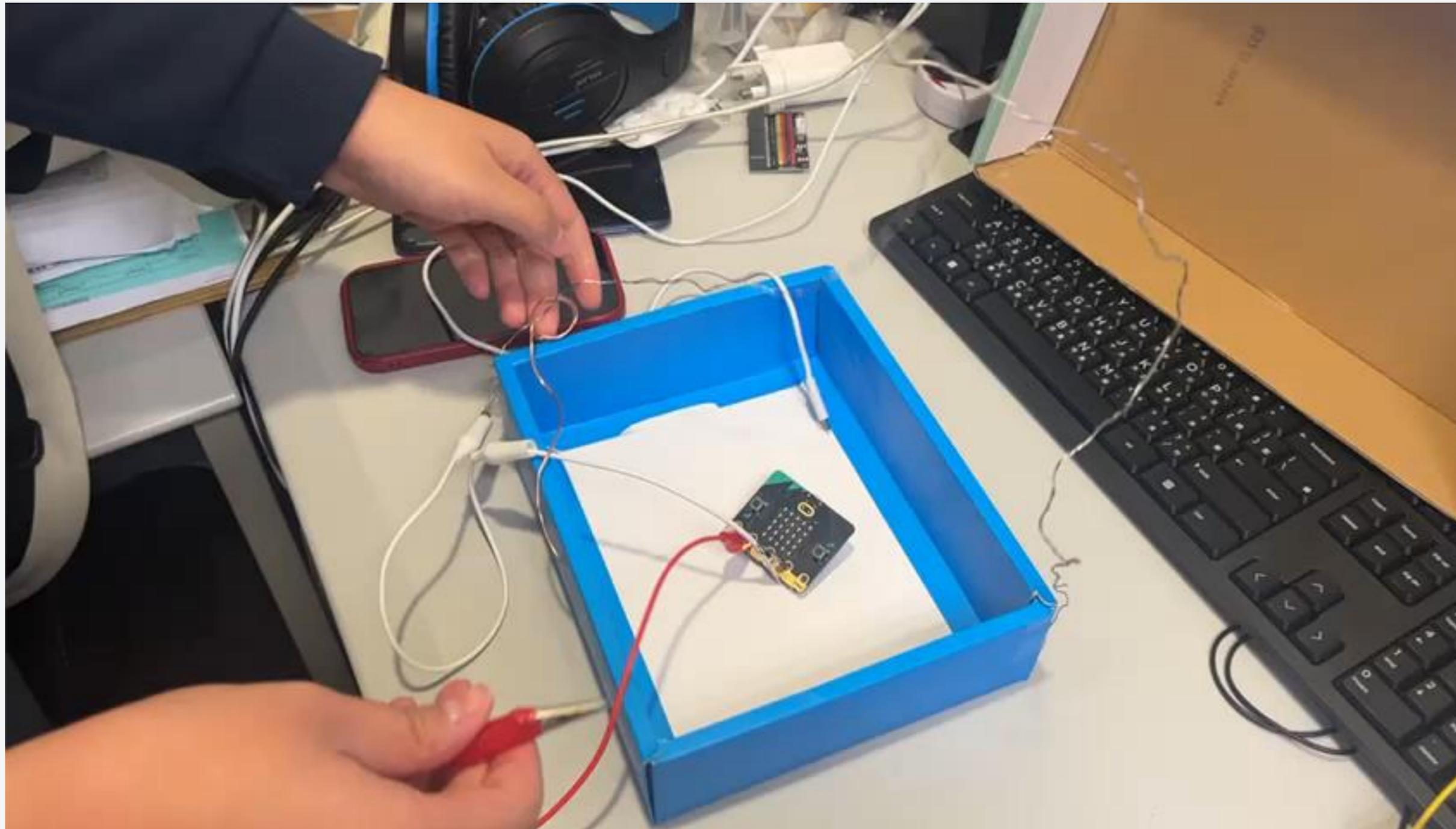
透過STEAM教育自主及循序漸進學習以工程設計流程解難

Reaction game

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Electric Current Avoider

<https://makecode.microbit.org/S68771-57033-01223-88109>



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```
on start
  set a to 0

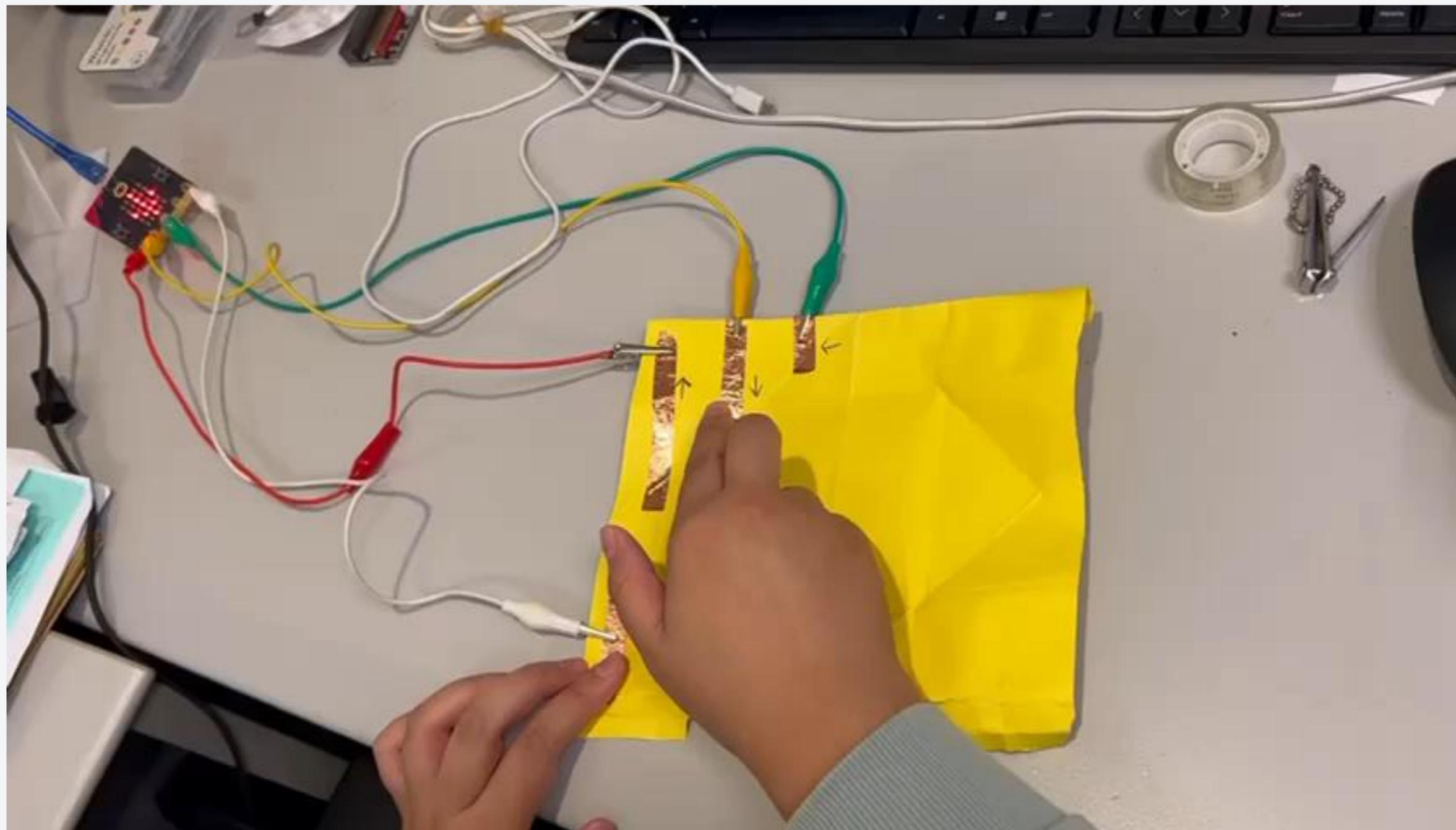
on button A pressed
  clear screen
  set a to 0

forever
  show number a
  if digital read pin P1 = 1 then
    change a by 1
    play tone Middle C for 1 beat
```

The image shows a Scratch code editor with a light gray grid background. The code is organized into three main blocks: 'on start', 'on button A pressed', and a 'forever' loop. The 'on start' block (blue) contains a 'set a to 0' block (red). The 'on button A pressed' block (purple) contains a 'clear screen' block (blue) and a 'set a to 0' block (red). The 'forever' loop block (blue) contains a 'show number a' block (blue), an 'if digital read pin P1 = 1 then' block (teal), and two nested blocks: 'change a by 1' (red) and 'play tone Middle C for 1 beat' (red). A plus sign icon is visible at the bottom left of the 'forever' loop block.

Reaction game with time

- <https://makecode.microbit.org/S49963-44311-43467-67565>



Reaction game with time

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The image shows a screenshot of the MicroPython code editor for a reaction game. The code is written in a block-based style and is organized into several sections. At the top, there are initialization blocks for variables like 'start', 'game', and 'time'. The main logic is contained within a 'while' loop that checks for a button press. When a button is pressed, the code plays a sound, increments a score, and updates the time. The code also includes a function to calculate the reaction time based on the time taken to press the button. The code is color-coded and includes comments in Chinese.