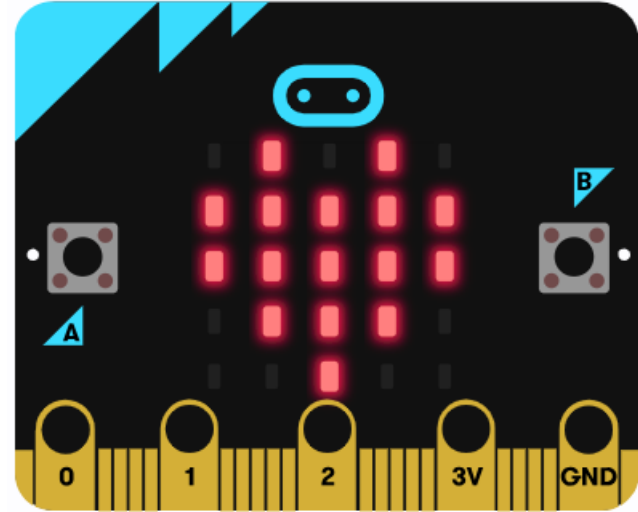




micro:bit

First lessons with MakeCode
and the micro:bit

Lesson 2 Heart



Open a new MakeCode project.

<https://makecode.microbit.org/>

Microsoft | micro:bit

Introduction to the BBC micro:bit

Show Instructions

My Projects [View All](#) [Import](#)

New Project

← Click here.
Name your new project Heart.

Tutorials

- New? Start Here **Flashing Heart**
- Name Tag**
- Smiley Buttons**
- Dice**
- Love Meter**
- Micro Chat**

Follow all the steps of this lesson. Do not skip any pages.

Microsoft | micro:bit

Blocks JavaScript

Search...

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced

on start forever

Download Heart

Follow all the steps of this lesson. Do not skip any pages.

Microsoft | micro:bit

Blocks JavaScript

Search...

- Basic
- Input
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- Logic
- Variables
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- Extensions
- Advanced

on start

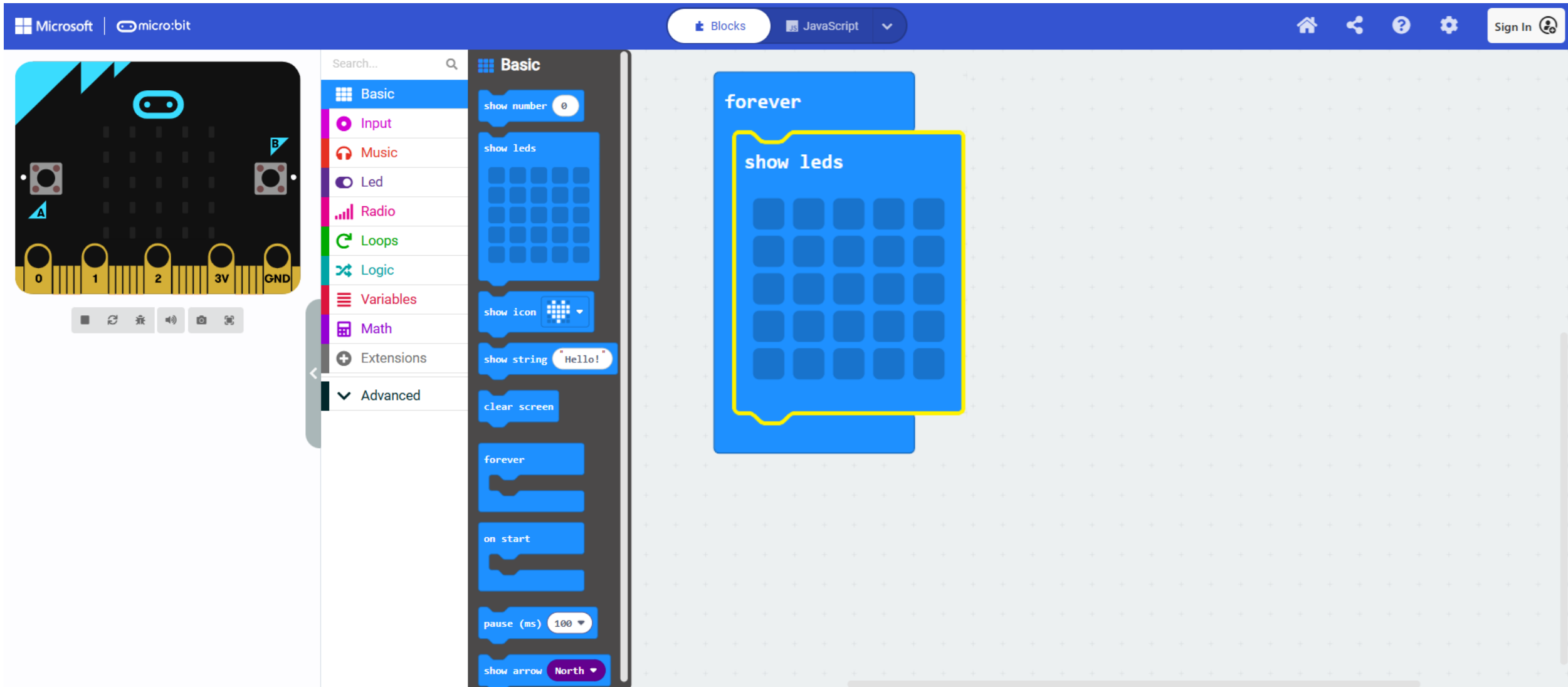
forever

Delete the 'on start' block.

Download

Heart

Click on the Basic category in the Toolbox.
Drag the 'show leds' block into the 'forever' block.



The screenshot displays the Microsoft MakeCode editor interface for a micro:bit. The top navigation bar includes the Microsoft logo, the micro:bit logo, and tabs for 'Blocks' and 'JavaScript'. On the left, a virtual micro:bit board is shown. The central 'Toolbox' is open to the 'Basic' category, which contains various blocks such as 'show number', 'show leds', 'show icon', 'show string', 'clear screen', 'forever', 'on start', 'pause (ms)', and 'show arrow'. The 'show leds' block is highlighted with a yellow border, indicating it is being dragged into the 'forever' block in the workspace. The workspace on the right shows a 'forever' loop block with a 'show leds' block inside it, demonstrating the instruction being followed.

In the 'show leds' block click on the squares to draw a heart.

The image shows the Microsoft MakeCode micro:bit editor interface. The top navigation bar includes the Microsoft logo, 'micro:bit', and tabs for 'Blocks' and 'JavaScript'. On the left, there is a 3D model of the micro:bit board. The central panel is a block palette with a search bar and categories: Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, Extensions, and Advanced. The 'Basic' category is selected, showing various blocks like 'show number', 'show leds', 'show icon', 'show string', 'clear screen', 'forever', 'on start', 'pause (ms)', and 'show arrow'. The 'show leds' block is highlighted, showing a 5x5 grid of squares. On the right, the workspace contains a 'forever' loop block with a 'show leds' block inside it, where the grid of squares is visible on a light gray background.

Drag another 'show leds' block into the 'forever' block below the first one.

The screenshot displays the Microsoft MakeCode editor for the micro:bit. The top navigation bar shows the Microsoft logo, the 'micro:bit' logo, and tabs for 'Blocks' and 'JavaScript'. The left sidebar contains a search bar and a list of categories: Basic, Input, Music, Led, Radio, Loops, Logic, Variables, Math, Extensions, and Advanced. The 'Basic' category is selected, showing a list of blocks including 'show number', 'show leds', 'show icon', 'show string', 'clear screen', 'forever', 'on start', 'pause (ms)', and 'show arrow'. The workspace shows a 'forever' loop block containing two 'show leds' blocks. A red arrow points to the second 'show leds' block with the text 'Leave this blank.'

Download your code to the micro:bit device.
Follow the steps on the next page to complete the download.

Microsoft | micro:bit

Blocks JavaScript

Search... Basic

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced

show number 0

show leds

show icon

show string Hello!

clear screen

forever

on start

pause (ms) 100

show arrow North

forever

show leds

show leds

Click here.

Download

Heart

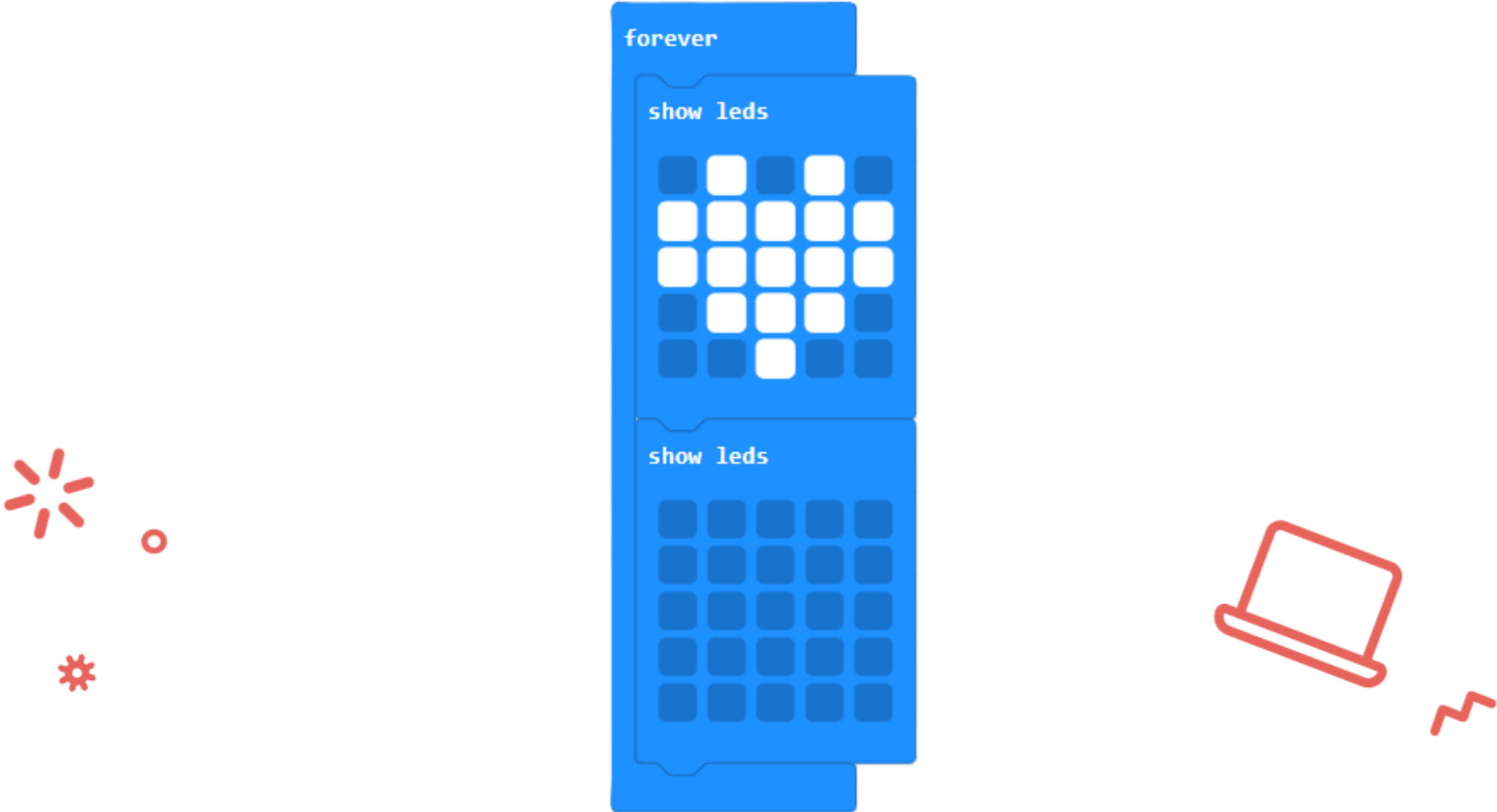
Step-by-step Guide To Download Your Code To Micro:Bit

- 1) Connect. Plug your micro:bit device into the Chromebook with a USB cable; it will appear as a new drive named MICROBIT in your Files app.
- 2) Code & Download. In MakeCode, build your program and click the purple Download button. Do not PAIR. Click the blue Download as File button. This saves a “_____.hex” file (e.g., microbit-program.hex) to your Chromebook’s Google Drive or Google Files.
- 3) Locate File. Open the Files app (the blue folder icon) and find your downloaded “_____.hex” with the files in your Google Drive or with the files in your Google Files.
- 4) Drag & Drop. Click and drag the “_____.hex” file directly onto the MICROBIT drive.
- 5) Transfer. The MICROBIT drive will momentarily disappear as the code is transferred to the micro:bit device. Look for the blinking lights on the micro:bit and an on-screen message showing you the status of your download.
- 6) Run. Your program will start automatically on the micro:bit once the transfer is complete.

Need help? Watch a video to help you with these steps to download your code to the micro:bit from a Chromebook.

<https://www.youtube.com/watch?v=9V2oAsB3F8s>

Show Mr. Desmond how your micro:bit device works.



Remove the 'show leds' blocks. Add two 'show icon' blocks. Add two 'pause' blocks after each of the 'show leds' blocks to create a beating heart animation.

The screenshot displays the Microsoft MakeCode editor for a micro:bit. The interface includes a top navigation bar with 'Microsoft | micro:bit', a 'Blocks' tab, and a 'JavaScript' dropdown. On the left, there is a visual representation of the micro:bit board and a control panel with buttons for 'Test your code' and 'Download your code'. The central workspace shows a 'forever' loop containing two 'show icon' blocks and two 'pause (ms)' blocks. A 'show leds' block is visible in the block palette. Red arrows point to the 'Test your code' button and the 'Download' button.

Test your code.

Download your code.

Download

Show Mr. Desmond how your micro:bit device works.

```
forever
  show icon [grid icon]
  pause (ms) 500
  show icon [grid icon]
  pause (ms) 500
```



Change the 'show icon' blocks to create a new animation.
You choose which icons to use.

Microsoft | micro:bit

Blocks JavaScript

Search...

- Basic
- Input
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- Logic
- Variables
- Math
- Extensions
- Advanced

forever

- show icon
- pause (ms) 500
- show icon
- pause (ms) 500

Test your code.

Download your code.

Download

Heart

Show Mr. Desmond how your
micro:bit device works.

Change your code blocks to create a new animation that matches this code sequence.

Microsoft | micro:bit

Blocks JavaScript

Search...

- Basic
- Input
- Music
- Led
- Radio
- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced

forever

- show icon
- pause (ms) 500
- show leds
- pause (ms) 500

Test your code.

Download your code.

Download

Heart

Use one 'show icon' block and one 'show leds' block.

Show Mr. Desmond how your micro:bit device works.

Create an animation of your own design that uses multiple 'show icon' blocks or 'show leds' blocks or a combination of both.

Microsoft | micro:bit

Blocks JavaScript

Search...

- Basic
- Input
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- Loops
- Logic
- Variables
- Math
- Extensions
- Advanced

0 1 2 3V GND

Download Heart

Show Mr. Desmond how your micro:bit device works.