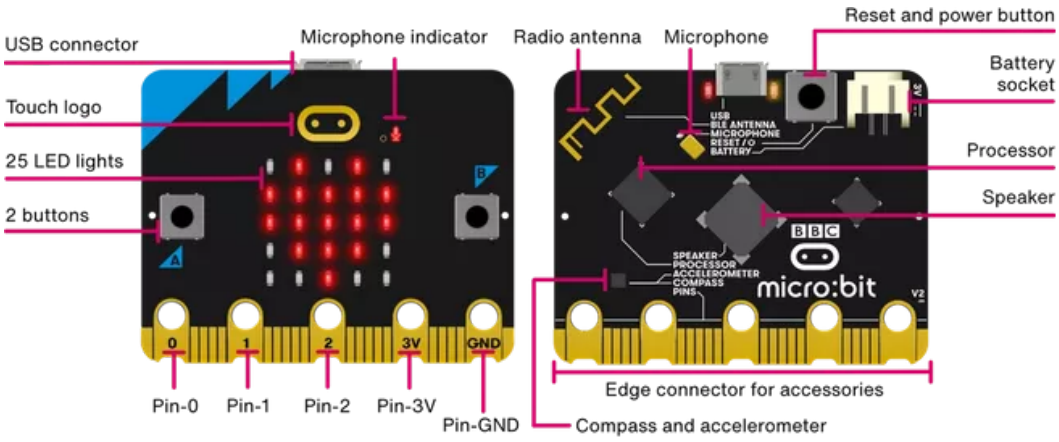
Quick Summary of Micro:Bit:

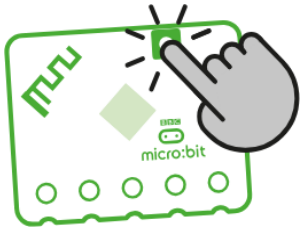
Micro:Bit is a pocket sized computer that lets you write code to customize cool features. You can use it for all sorts of unique creations from robots, video gdigital_2024used to inspire students to pursue computer science and originated in the United Kingdom.

To program the Micro:Bit, code is developed on a laptop or other device and then downloaded to the Micro:Bit. Before we get started with programming, let's get familiar with the Micro:Bit itself.

Here is a picture:



Turning on:
Add batteries to the battery pack and plug into the side of the microbit. Press the button on the back to turn on and off.



Writing Code to download onto your Micro:Bit
Go to https://makecode.microbit.org/#editor a web-based editor. Use a laptop or computer in the lab to bring up the website. Go through the tour that automatically shows features of the editor.

Code can be written by dragging and dropping blocks from the menus on the left into the programming area on the right, which has a start and forever block ready and waiting.
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To download code to your Micro:Bit today, you should use the USB cable to connect to the computer you have the website with your code on.

Warming up: Dice game

No experience - no problem:
Those with no experience with programming may want to start with a simple activity and very short program already defined. Here is a link to an editor with a Dice Game already implemented: Dicd:d:e Game

- You can also access the starter code by copying and pasting the URL below into your browser.
- https://makecode.microbit.org/_RvD8U6Uate5V

Activity: Tamagotchi pet game

In this activity, you can develop a Tamagotchi pet game that simulates a pet. The goal of the game is to keep your pet alive by feeding it, taking care of it when it's sick, etc. We will use the microbit to program the simplified version of the game where the pet can either become hungry or tired.

Variables Needed in Project

● **Mood Chance** - stores a value that will determine the mood (happy, sleepy, hungry, etc.)
● **Happy** - a boolean variable that will show a happy face when it is TRUE.
● **Hungry** - a boolean variable that will show a sad face when it is TRUE, meaning the pet is hungry.
● **Sleepy** - a boolean variable that will show a sad face when it is TRUE, meaning the pet is sleepy.
● **Angry**- a boolean variable that will show a lifeless face when it is TRUE, meaning the pet is angry and terminates the game.
● **Unhappy Timer** - stores a value that will be used to count down from when the pet is not happy. The pet will die when this timer reaches zero.
● **Eye Movement Chance** - stores a value that will determine the value stored in “Eye Movement State”.
● **Eye Movement State** - stores a value that will determine where the pet’s eyes will look.

Here is a start only on programming the activity: tamagotchi-start
- You can also access the starter code by copying and pasting the URL below into your browser.
https://makecode.microbit.org/_05dVs6Mr6K9r

Step 1: Display a Face
Draw a face to reflect your mood at this point
Step 2: Please refer to the paper on the table in between you and your partner for directions for the activity.

- task 1: show the face and make eye movement
- task 2: show the face and make mood changing
- task 3: Use the pseudocode provided to program!
- You can find the site with this activity later by going to Micro:Bit Tamagotchi Activity Description

Credits: https://microbit.org/ and
https://static1.squarespace.com/static/533a5f1be4b00bb34469c085/t/5ae6f3c00e2e72dfd92a15dd/1525085122048/Tamagotchi.pd

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Find the program for the full Tamagotchi activity: Tamagotchi Full Program

Pairing with bluetooth:

Pairing mode:
Press a and b buttons simultaneously and while still holding them press the on/off button the back. The led lights should display a bluetooth symbol and then a sequence of columns.

Android:

1. Go into Settings
2. Select Bluetooth
3. Switch your micro:bit into 'pairing mode' using the steps above
4. Wait until 'PAIRING MODE!' has finished scrolling across the micro:bit display. You should see your micro:bit listed on your Android smartphone under the heading "Available devices" with a name something like 'micro:bit [zatig]'. Note that the 5 characters in brackets at the end will vary.
5. On the Android smartphone, tap the micro:bit named in the Available devices list. This will initiate the pairing process.
6. The micro:bit will display a left pointing arrow and the Android smartphone will pop up a box into which you will be invited to enter a "pin" (Personal Identity Number).
7. Press button A on the micro:bit and watch carefully as the micro:bit displays a sequence of 6 random numbers. You may find it easier to write them down than to remember them.
8. Enter the 6 digits which the micro:bit displayed into your Android smartphone in the pop-up box provided and then select "done".
9. If you entered the right number the micro:bit will display a tick / check mark. If you made a mistake it will display a cross or X and you should repeat the process to try again.

Apple IOS:
Download a bluetooth application in the app store (NFR connect works for this).

1. Launch the nRF MCP application. Your micro:bit should be listed and have a "Connect" button next to it.
2. Select "Connect" to connect your Apple device to the micro:bit. This will trigger the pairing process.
3. The micro:bit will display a left pointing arrow and the Apple device will pop up a box into which you will be invited to enter a "pin" (Personal Identity Number).
4. Press button A on the micro:bit and watch carefully as the micro:bit displays a sequence of 6 random numbers. You may find it easier to write them down than to remember them.
5. Enter the 6 digits which the micro:bit displayed into your Apple device in the pop-up box provided and then select "Pair".
6. If you entered the right number the micro:bit will display a tick / check mark. If you made a mistake it will display a cross or X and you should repeat the process to try again.

Other micro:bit activities: https://w3.cs.jmu.edu/duanzx/Tech_gift_2023.html