What is the micro:bit?

# Micro:bit for everyone!

From early 2016, a project led by BBC Education distributed micro:bits to children aged 11-12 across the UK. These children were in a variety of settings, from non-formal education to libraries.

In October 2016, the Micro:bit Educational Foundation was founded, with the aim of inspiring children worldwide.

Since then, it is estimated 42 million young people have experienced the benefits of learning with micro:bit across over 60 countries.

# What Is a micro:bit?

When you receive your BBC micro:bit, everything you need to make a good start is included in the cardboard box.

The cardboard box contains:

-micro:bit V2
-USB data cable
-safety guide
-micro:bit cardboard case
-battery pack and
-connector
-2 x AAA batteries
-a Get started manual

The micro:bit is a pocket-sized computer.
It has an LED light display, buttons, microphone, sensors and many input/output features. These features can be programmed to let you physically interact with the world around you.
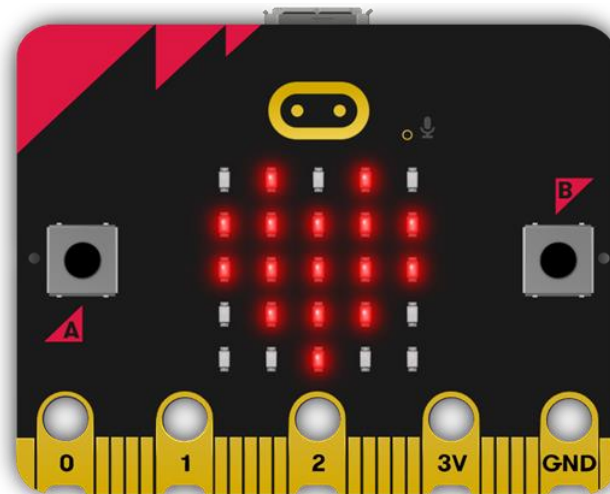
# Benefits of Using a BBC micro:bit

The micro:bit was developed to inspire higher levels of engagement and creativity. The capabilities of the micro:bit allow for collaborative learning. The hands-on experience will encourage communication amongst children.

Using a micro:bit is an amazing way to engage children in lessons.
It is a hands-on experience where children are able to be creative whilst building on their computational skills.
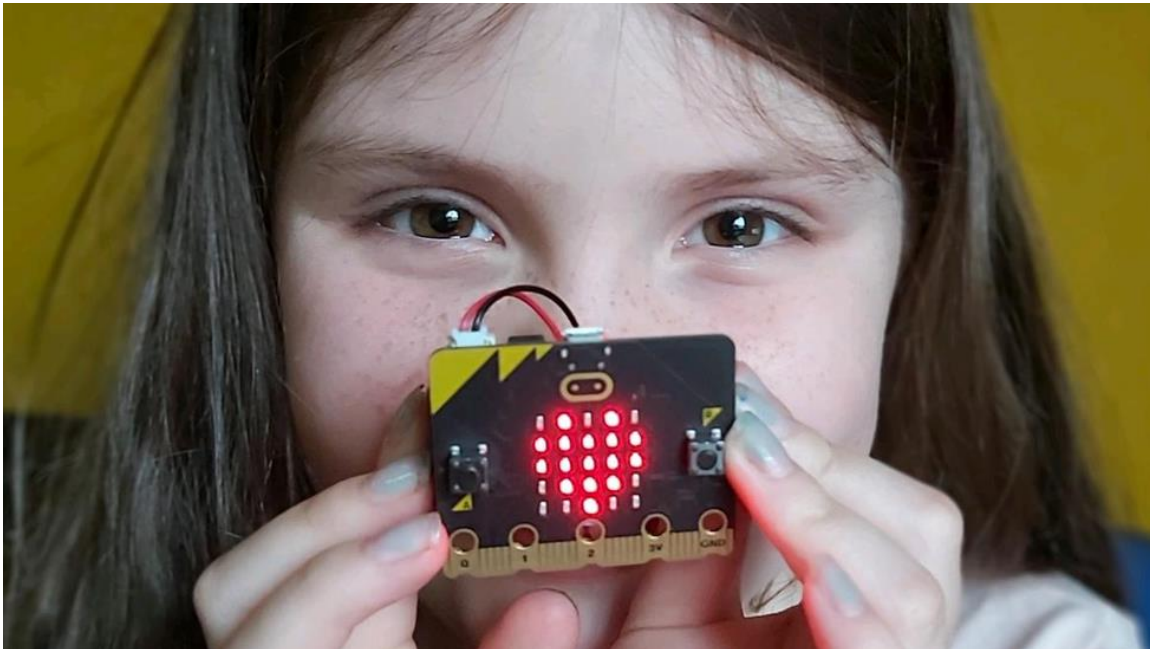
A micro:bit can be accessed by children of all computing abilities.
It allows for children to be active learners where they are more likely to retain the information they have learnt.

# Curriculum Links

Using a micro:bit will help you to cover aspects of the computing curriculum.

Computer science can be a really tricky subject to cover, especially if you are not a confident coder. With a micro:bit, you will be able to cover the following national curriculum aims with ease:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

- use sequence, selection and repetition in programs; work with various forms of input and output

- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
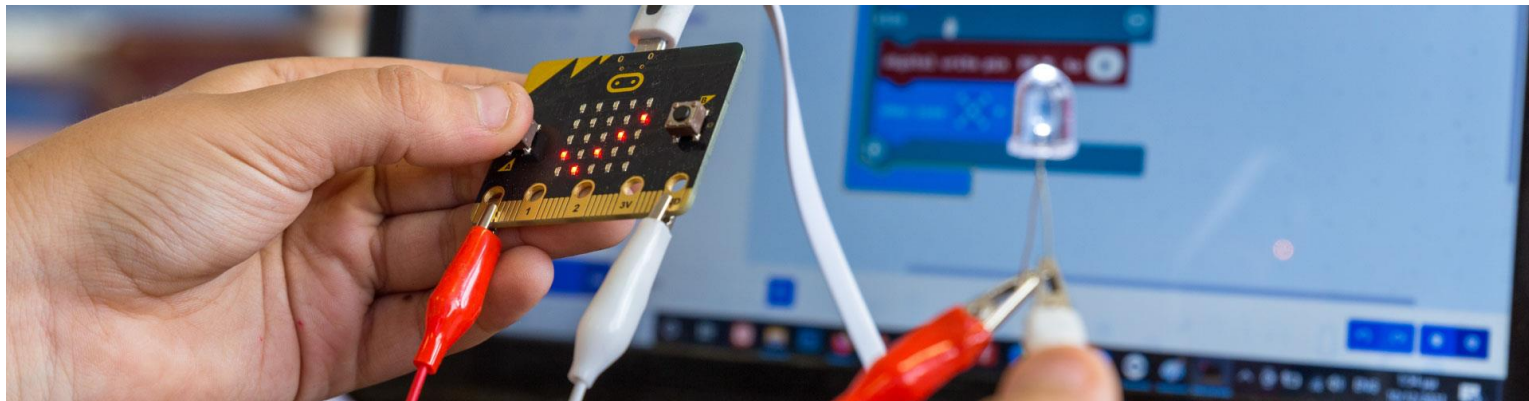
## Curriculum Links

Depending on the program or project you choose to create with your micro:bit, the children could be accessing more than just the computing curriculum.

The cross-curricular links with a micro:bit are endless.
Embarking on a micro:bit project could allow children to access:

computing

science

mathematics

music

design technology

geography

art and design

# How Can a micro:bit Be Used?



Sometimes, the hardest part of using technology is not setting things up but figuring out what its capabilities are in the first place. The micro:bit is no exception to this. The micro:bit caters for all users, from confident coders to those who may need some support.
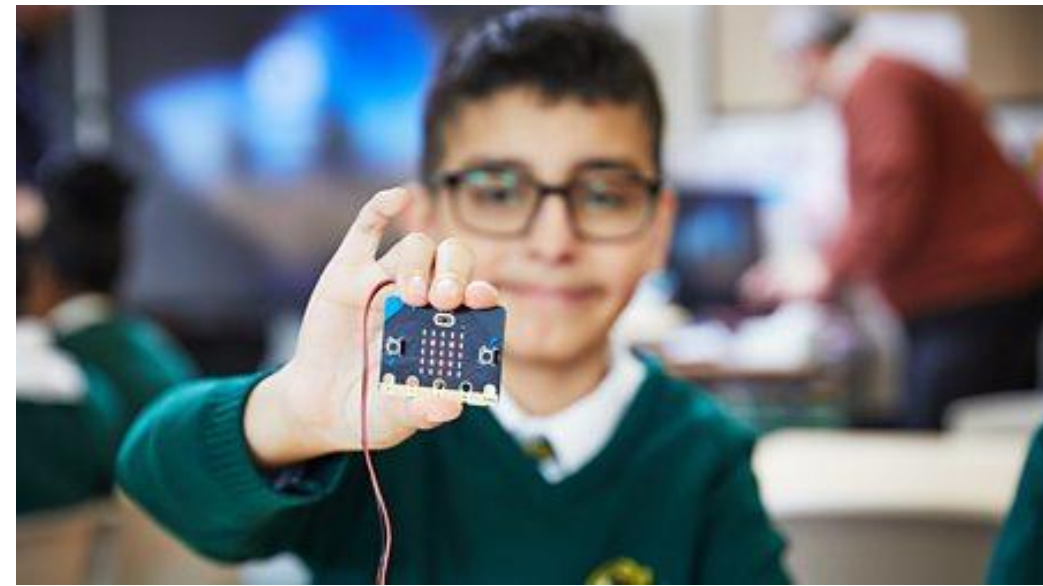
Here are just a few ideas of some micro:bit projects that you could create:

| Beginner programs | Intermediate programs | Advanced programs |
|---|---|---|
| beating heart | nightlight | guitar |
| step counter | headphone connection | tilt alarm |
| dice | treasure hunt | reaction game |
| rock, paper, scissors | touch timer | energy cost calculator |
| badge | touch stopwatch | |
| showing emotions | clap-o-meter | |
| thermometer | | |
| animal tracker | | |

# Connecting via a Desktop or Laptop Computer

If you're using a desktop or laptop computer to connect to the micro:bit, you will need a micro USB data cable.
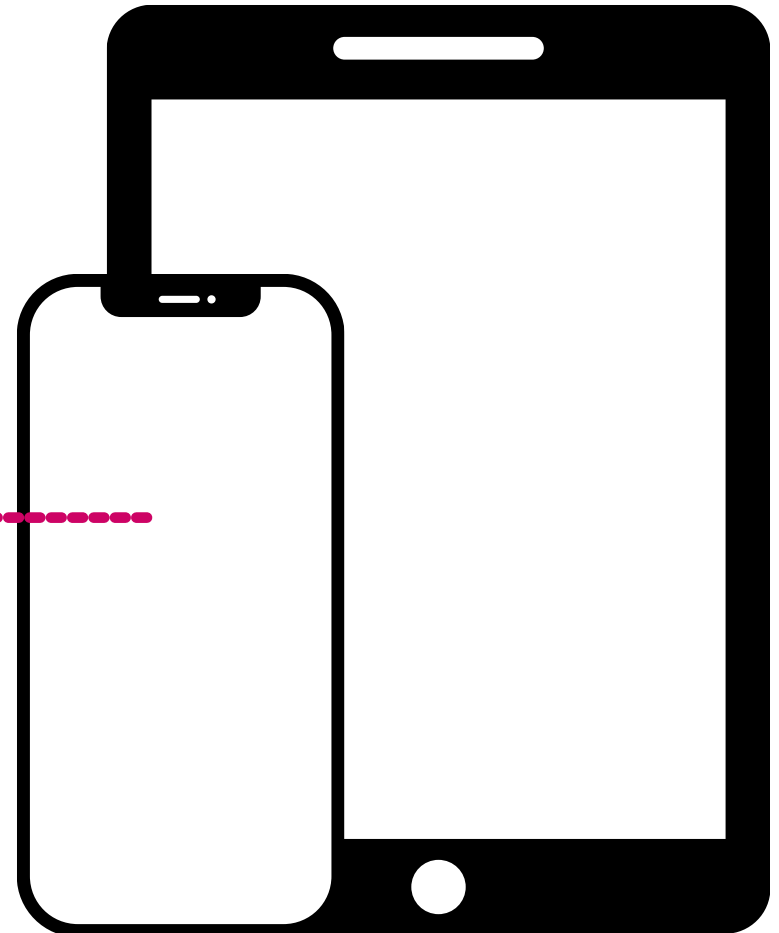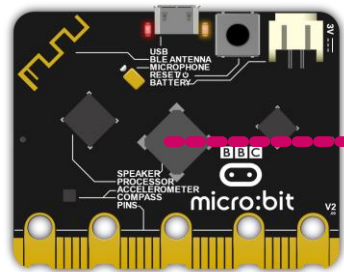
Plug the micro USB data cable into your micro:bit and then into your desktop or laptop computer. The micro:bit will show up as a disk drive called **MICROBIT**.
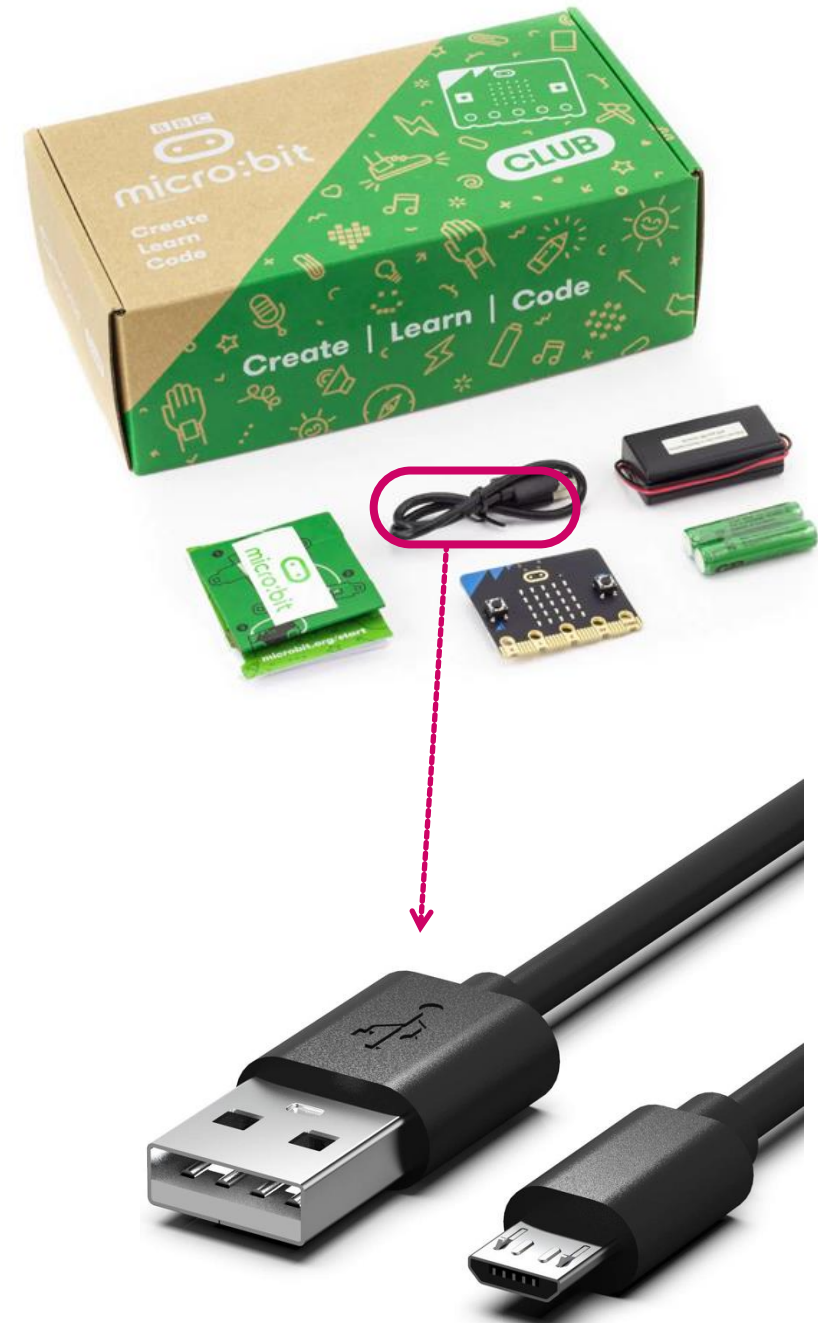
MICROBIT

# Connecting via a Mobile Device

If you're using a mobile device to connect to the micro:bit,
you will need to connect them wirelessly through Bluetooth.

# Heart LED

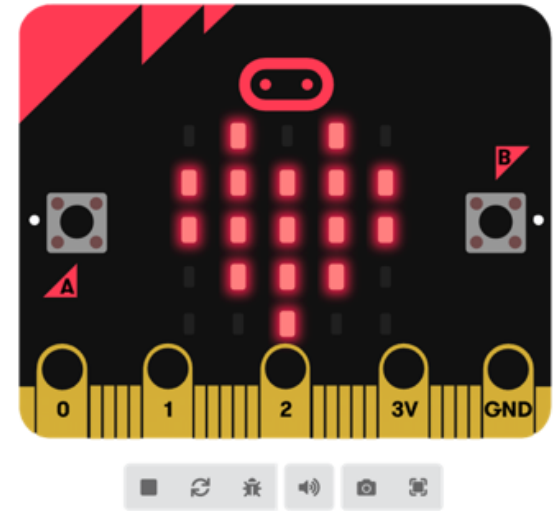## Getting Started

What you will need:
micro:bit
Microsoft MakeCode
USB data cable, if using a desktop or laptop computer
battery pack, if using a mobile device

## Instructions:

- Inside an **on start Basic** block, slot in the **show icon Basic** block.
- Ensure the heart is showing in the drop-down menu.
- To test your code, select the play button to start the **simulator**.
- Click on the download button to transfer the code to your micro:bit.
- Follow the directions on screen.
- When the code is transferred, you should see a heart appear in the LEDs.

# Beating Heart

## Getting Started

### What you will need:
micro:bit
Microsoft MakeCode
USB data cable, if using a desktop or laptop computer
battery pack, if using a mobile device

## Instructions:

- Inside a **forever Basic** block, slot in the **show icon Basic** block.
- Ensure the heart is showing in the drop-down menu.
- Add a **pause (ms)** block and select **500** from the drop-down menu.
- Add another **show icon Basic** block.
- Select the smaller heart from the drop-down menu.
- Add another **pause (ms)** block and select **500** from the drop-down menu.
- Test your code using the the **simulator**.
- **Download** your program on to your micro:bit.

# Name Badge

- Inside a **forever Basic** block, slot in the **show string Basic** block.

- Type your name inside the white space on the **show string Basic** block.

- Test your code using the the **simulator**.

- **Download** your program on to your micro:bit.

# Thermometer

- Select the **on button pressed Input** block and select **A** from the drop-down menu.

- Insert a **show number Basic** block.

- Find the **temperature (℃) Input** block and move this into the white space on the **show number Basic** block.

- Test your code using the the **simulator**.

- **Download** your program on to your micro:bit.

on button  A ▼  pressed

show number  temperature (°C)