

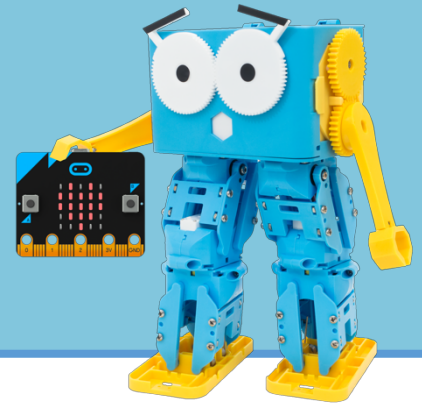
Lesson 1.20 – Using the Micro:Bit Display

Education Level: Second Level (Age 7-11)

Lesson Duration: 45 minutes

Prerequisite Knowledge: Lessons 1.1-1.14 & 1.19

Device Compatibility: Laptop, PC or Tablet



Lesson Overview

Students will be exploring the LED display on the Micro:Bit as a way to express some more feelings through Marty the Robot. Using sprites on Scratch as a controller, the Micro:Bit can be attached to Marty to represent his mouth which can be easily changed.

Learning Objectives

- Consider how we express our feelings on a daily basis and what we use to do this
- Explore what different feelings we can represent using the Micro:Bit and Marty
- Build a small program to change the LEDs on the Micro:Bit to represent Marty's mouth

Key Vocabulary

- Micro:Bit
- Expressing feelings
- Sprites
- If Statements
- Events
- Computational Thinking

Resources & Equipment

- Marty the Robot
- Marty Workbook (Lesson 2)
- Laptops/Computers/Tablets
- Access to the Scratch 3 editor
- BBC Micro:Bit
- Blu Tack

Additional Reading

- Educator's Guide
- Introduction to Programming with Marty using Scratch
- BBC Micro:Bit Quick Start Guide for Teachers (<https://microbit.org/guide/quick/>)

Learning Plan & Activities

1. Ask students to think in groups what emotions they feel and how people express them?
 - a. Get students to think about how we show how we are feeling and what we use particularly facial features like eyebrows, eyes and mouth
2. In the same groups, students should move to their devices with Scratch and create a small program
 - a. Each sprite represents a different feeling and when you click on it, Marty should show this feeling using his eyes and the Micro:Bit LED grid as the mouth
3. Students should try to see how many feelings they can think up and represent with programming before showing it off to other student groups and seeing if they can guess what feeling Marty is showing

Additional Challenges

- Students could challenge each other to come up with as many different feelings they can represent with Marty and the Micro:Bit
- Are there any other attributes they can add to make their representations more realistic? Like movement or sound?

- Can students use animation of the LED lights to improve their representation of the feeling (looping through some different LED displays with each one slightly different to the last to give off the sense of movement)

Curriculum Benchmarks

Curriculum for Excellence – Technologies Benchmark Guide

● = Fully Addresses Benchmark ○ = Partially Addresses Benchmark

| Curriculum Organiser | Benchmark Covered | Lesson 1.20 |
|--|-------------------|-------------|
| Digital Literacy | TCH 0-01a | ● |
| | TCH 0-02a | ● |
| Technological Developments in Society & Business | TCH 0-05a | ● |
| Craft, Design, Engineering and Graphics | TCH 0-09a | ● |
| | TCH 0-11a | ● |
| Computing Science | TCH 0-13a | ● |
| | TCH 1-13a | ● |
| | TCH 2-13a | ○ |
| | TCH 3-13a | ● |
| | TCH 3-13b | ● |
| | TCH 4-13a | ● |
| | TCH 0-14a | ● |
| | TCH 0-14b | ● |
| | TCH 1-14a | ● |
| | TCH 1-14b | ● |
| | TCH 2-14a | ● |
| | TCH 3-14a | ● |
| | TCH 0-15a | ● |
| | TCH 1-15a | ● |
| | TCH 2-15a | ● |
| | TCH 3-15a | ○ |
| | TCH 4-15a | ○ |

National Curriculum – Computing, Design & Technology

● = Fully Addresses Benchmark ○ = Partially Addresses Benchmark

| Curriculum Organiser | Benchmark Covered | Lesson 1.20 |
|----------------------|---------------------|-------------|
| Computing | 1-a | ● |
| | 1-b | ● |
| | 1-c | ● |
| | 1-e | ● |
| | 2-a | ● |
| | 2-b | ● |
| | 2-c | ● |
| | 2-f | ○ |
| | 3-a | ● |
| | 3-b | ○ |
| | 3-d | ○ |
| | 4-a | ○ |
| | 4-b | ○ |
| | Design & Technology | 1.1-b |
| 1.2-a | | ○ |
| 2.3-b | | ● |