# Lesson 2 – Name Badge Task

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * The micro:bit is a microcontroller. Microcontrollers are used in a wide range of Internet of Things (IoT) connected devices * Learners will gain their first exposure to programming the micro:bit which will introduce them to a number of key programming concepts | * Understand how to use the MakeCode website * Understand the purpose of the different components on the micro:bit including sensors * Know that a .hex file is a micro:bit program * Make a simple program, download it to a PC and upload the program to a micro:bit * Use some basic blocks in MakeCode to make a name badge program |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * The practical task makes code instantly visible on the micro:bit. Learners will have fun with changing the code and making it display their own name * Inspire learners by explaining what can be done with a micro:bit and how it can be programmed using blocks and real code | **Expected Progress:**   * Learners create a name badge program and save the .hex file to the micro:bit   **Good Progress:**   * Learners attempt the stretch tasks and complete some of them successfully   **Exceptional Progress:**   * Learners complete the stretch tasks and move onto the next project |
| Key Concepts | Key Words |
| * micro:bit programs can be written on the MakeCode website * A micro:bit is a microcontroller * A program is a file that needs to be uploaded to the micro:bit to work * Programs should be named appropriately * Programs can be developed iteratively | * micro:bit * Program * USB * .hex * Download/upload * Copy and Paste * Blocks * LED |
| Differentiation | Resources |
| Most learners will be able to follow the instructions, however adding a program to a microcontroller may be a new concept to some learners and they may need support getting the files onto the micro:bit initially. | * Lesson 2 ppt * Name Badge Task Instructions * 1 micro:bit per learner * 1 USB cable to connect the micro:bit to a PC * A PC * Access to <https://makecode.microbit.org> |
| Lesson Flow | |
| * Introduce the micro:bit and explain what it is * Describe the sensors on the micro:bit and the LED output * Briefly describe the name badge project and show learners where the resources are located on the PC * Learners work through resource independently; teacher intervenes where appropriate * Encourage more advanced learners to attempt the stretch tasks once they complete the main task | |
| Making | |
| There are no making activities in this lesson. | |