# Lesson 10 – Setting up a Speaker, Module and Music

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Music is everywhere, games, films, concerts, on our phones. The micro:bit can be wired up to output music and sounds. Can you create the next chart-topping hit? | * Know how to wire up a speaker with the micro:bit * Know what a module is and import one into a program * Use Python to program a musical composition |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Have one of the micro:bits playing music as the Learners enter the room * Play the Learners some famous theme tunes to spark their interest for the second activity * Run a competition or a show and tell for the Learners to judge the best song, funniest etc. * Award prizes for winners | **Expected Progress:**   * Learners wire up the speaker to a micro:bit * Learners program a pre-made piece of music   **Good Progress:**   * Learners use the ‘notes’ code * Learners create a theme tune   **Exceptional Progress:**   * Learners use the ‘rests’ code * Learners use the code to produce a suitable theme tune |
| Links to KS3 Programme of Study | |
| * use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions * understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems | |
| Key Concepts | Key Words |
| * Setting up a speaker with micro:bit and speaker * Importing modules * Playing music * Composing music with notes and rest | * Modules * Importing * Lists * Composition |
| Differentiation | Resources |
| Setting up the speaker could be done in pairs for support. Learners who play musical instruments could work with others to support the ‘music theory’ side of the composition. The teacher could prepare the notes for some simple songs so that all Learners can program music using notes. | * Lesson 10 ppt * Lesson 10 Activity Sheet * Sample Python code * 1 micro:bit per learner * 1 USB cable to connect the micro:bit to a PC * A PC * Access to [micro:bit Python Editor](https://python.microbit.org/v/3) * Crocodile clips * Headphones or speakers |
| Lesson Flow | |
| * Play a music example through the micro:bit and speaker as the Learners enter. * Introduce the setup of the speaker and Learners set up their own. * Teacher introduces modules, what they are, their uses and the example program * Learners use Activity Sheet to copy up program and play music through speaker * Learners can adapt the music using some of the preprogramed tunes * Teacher introduces activity two, creating a theme tune, pair up Learners as required * Teacher content on lists, what they are and their usage. * Learners compose their own tunes * Teacher intervenes where appropriate * Ask Learners to play their programs to the class and judge them | |
| Making | |
| There are no making activities in this lesson. | |