# Lesson 11 – Making the micro:bit Speak and Perform

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| Speech is everywhere and a lot of it is produced by computers. Googles AI assistant will call and make appointments for you, book tables answer phone calls all through speech without you having to say anything  Combine the music code and speech code to program a musical micro:bit performance for your teacher and class | * Recap how a speaker works and what modules are * Know how the micro:bit produces speech * Program the micro:bit to speak * Edit the quality of the speech |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * As Learners enter the classroom have the micro:bit speak to them or sing a song * Learners could film and share their performances on social media * Making the voices sound like a robot or an elf is engaging * Writing a song using music and speech enables Learners to work together and perform for the class | **Expected Progress:**   * Learners can wire up the speaker to a micro:bit * Learners can create a speech program and are aware of how the speech is generated   **Good Progress:**   * Learners use the speech settings to improve the quality   **Exceptional Progress:**   * Learners compose using notes and music * Learners combine with the speech code * Learners write a program that plays notes / music and speaks. * Learners include LEDs as part of the performance |
| 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 how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits * create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability | |
| Key Concepts | Key Words |
| * Setting up a speaker with micro:bit and speaker * Programming speech * Improving the quality of speech * Use of the rest code * Creating a performance | * Modules * TTS text to speech * Phoneme |
| Differentiation | Resources |
| The speech program is fairly straightforward and all Learners can edit the settings to produce a better quality of speech. Learners may need support in choosing the most suitable activity to complete.  Learners can work in groups or pairs if one is more musically able. This will help to support the compositions of the music | * Lesson 11 ppt * Lesson 11 Activity Seet * 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 (microbit.org)](https://python.microbit.org/v/3) * Crocodile clips and headphones / speakers or a V2 microbit |
| Lesson Flow | |
| * Have the micro:bit speak to the Learners as they enter the classroom * Recap how the speaker works – teacher could have a question and answer session with Learners * Recap modules and what they are – teacher could have a question and answer session with Learners * Learners set up their speakers / headphone * Teacher explains how the speech is generated * Learners create speech program * Explain how to adjust the quality of the speech * Teacher to support where required * Learners complete one of the activities * Learners could share project with other class members * Learners create their musical program * Teacher to support where required * Learners share the project with other class members who score the performance to choose the winner | |
| Making | |
| No Making activities in this lesson. | |