# Lesson 19 – Radio Part 2

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Radio signals are a key part of everyday communication, from entertainment to Wi-Fi * Radio is also used to control devices and hardware such as drones, cars, machines and robots | * Recap the role of channel numbers in radio transmissions * Program a micro:bit to send a message through the radio hardware * Program a micro:bit to receive a message through the radio hardware * Create and send your own messages * Use selection to enable the micro:bit to send different messages when different buttons are pressed |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * The radio module is inspiring as data is being sent to other micro:bits without wires. * The teacher could demonstrate a radio program at the start if the lessons * This works well if all the Learner micro:bits are set to the same channel and receive the radio transmission from the teacher at the same time * The activity programs are engaging as Learners can send their own messages, rather than triggering a response on another micro:bit | **Expected Progress:**   * Learners write a program to send your own message to another micro:bit   **Good Progress:**   * Learners use selection to add at least two different message responses * Learners can change the responses   **Exceptional Progress:**   * Learners use selection to add at least three different message responses |
| 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 |
| * Sending data to another micro:bit * Receiving data from another micro:bit * Using variables to store a messages * Sending a message to another micro:bit * Using selection | * Transmission * Broadcast * Data * Byte * Bit * Channel number |
| Differentiation | Resources |
| Sometimes Learners load the same sender program onto both micro:bits. One micro:bit must have the sender program and the other the receiver.  Learners may need support using the selection code to enable the program to send more than one message. | * Lesson 19 ppt * Lesson 19 Activity Sheet * Sample Python code * 1 micro:bit per Learner * 1 USB cable to connect the micro:bit to a PC * A PC * Battery pack * Access to [micro:bit Python Editor (microbit.org)](https://python.microbit.org/v/3) |
| Lesson Flow | |
| * Teacher could demonstrate a radio sending example as the Learners enter the room * Teacher to recap how the radio chip uses addressing and channel numbers to send data * Teacher to discuss the basic sender code * Teacher to discuss the sending your own message program * Learners get into pairs and decide who will be the sender and the receiver * Learners completes activity task as per there role (sender or receiver) * Teacher to support Learners where required * Learners change the message to their own, as required * Learners create a secret silent interview (Stretch Task) * Leaners use selection to send a range of messages * Teacher to support Learners where required * Recap main learning content of the lesson | |
| Making | |
| There are no making activities in this lesson. | |