# Lesson 11 – Bit:Bot Race Car Project Tilt Control

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * Remote controls are a common technology * The ability to transmit data from one device to another has many practical uses including transmitting healthcare data from patients to doctors | * Send a signal from one micro:bit to another * Receive a signal and process the data * Use the signal to control movement by combining Bluetooth and sensor data |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Learners will enjoy the hands-on building * Learners will be able to remotely control their robot car – this needs to be as practical as possible | **Expected Progress:**   * Learners can use the demo to transmit data from one micro:bit to another   **Good Progress:**   * Learners are able to combine the received data with motor control to power their Bit:Bot   **Exceptional Progress:**   * Learners are able to send a range of data values to give greater control eg more/less power |
| Links to KS3 Programme of Study | |
| * 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 |
| * Bluetooth radio * Transmitting and receiving data packets | * Bluetooth * Data |
| Differentiation | Resources |
| * Some Learners will struggle with the use of radio groups and get frustrated with interference between micro:bits. * Ensure power is low, groups are different and Learners are in different parts of the room if possible | * Lesson 11 ppt * Lesson 11 Activity Sheet * Activity Sheet for Motor Controls * PC * 2 × micro:bits per team * Bit:Bot * Access to <https://makecode.microbit.org> |
| Lesson Flow | |
| * Introduce the objectives and reintroduce the project aims * Discuss Bluetooth, its current common uses but then start Learner thinking about how it could be utilised in areas like healthcare * Ensure Learners realise that Bluetooth is a way of transmitting data between devices * Discuss the need for transmitter and receiver devices * Show the code for these and get Learners to replicate and test it * Extend this by getting them to look at adding roll data as well as the pitch data * Introduce the Activity Sheet. Lesson 5 Covered control of the motors and movement, so you may need to refer back to this and use the Activity Sheet from that lesson * Encourage Learners to complete the Stretch Tasks | |
| Making | |
| No making activities in this lesson. | |