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[Read First: Selection with Microbits](#)

Fundamentals for using Microbits: <a href="#">Pairing Devices and Using Microbit Classroom – click here</a> Displays and printable resources for children’s Microbit use <a href="#">can be found here</a> . <a href="#">Flash cards here</a> .			
Lesson Number and Objective	How lesson can progress	Key Questions	WHY THIS? WHY NOW? CURRICULUM SEQUENCING AND ASSESSMENT
Lesson 1  I can discover and use the radio functions on the Microbit  <b>Curriculum milestones:</b>  I can use a condition in an ‘if... then... else...’ statement to produce given outcomes	As a teacher, if this is your first time using Microbits, don’t panic!  They can appear intimidating at first, but in fact you only need the small USB lead to connect them to a laptop or Chromebook.  1 Microbit between 2 children is normally the best way to approach learning. Do ‘pair’ the devices and do consider using Microbit Classroom as matters become more advanced. <a href="#">Essential one-page guidance</a> .  This first activity allows children to encounter the radio signals element of the Microbit in a fun and playful manner. You might want to show and discuss the Radio <a href="#">information video</a> with children.  By using the below link, you can access the Teleporting Ducks task, including two very short videos which can be used to introduce the learning to children, and repeat the instructions as necessary.  <a href="https://www.microbit.org/projects/make-it-code-it/teleporting-duck/">https://www.microbit.org/projects/make-it-code-it/teleporting-duck/</a>  This fun and practical task will create a buzz around Microbit use.  It could be extended to a further session with the <a href="#">Group teleporting Ducks task</a> and/or the <a href="#">Tell me a Secret task</a> .	How do I create my code? <b>Drag blocks around in the Make Code editor</b>  How do I run my code? <b>The on-screen, simulated microbit will show your code running. To get your code running on your microbit, use Connect Device and Pair your device so that it can be updated easily</b>  How do I save my code? <b>Code will save automatically into the web-based coding environment.</b>	This unit should be taught after the programming content in year 4, which builds in essential programming principles such as loops and changing code for different outcomes.  This unit provides children with further understanding of using selection in programming, plus explores count and event-controlled loops.  The unit will set children up for further expanded use of programmable hardware in year 6, and programming using the Scratch programming language.  <a href="#">This unit comes with a Digital Floor Book which can be used for recording, assessment and knowledge recall purposes, including key vocabulary. Library here.</a>



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<p>Lesson 2.</p> <p>I can code a game using inputs, random numbers and variables.</p> <p><b>Curriculum milestones:</b></p> <p><b>I can use a condition in an 'if... then... else...' statement to produce given outcomes</b></p> <p><b>I can create my own variable for use in a program</b></p>	<p><a href="#">Download the whole unit here</a> to view the full lesson plan.</p> <p>This lesson allows children to experiment with a <b>Rock, Paper, Scissors</b> game using two different Microbits.</p> <p>If a pair of children code a Microbit, they can then play the game with another pair of children and their Microbit. This keep things simple with regards the amount of equipment being used – it also give children the chance to compare their code (and the changes they have made to their code) with the other partnership. In effect, this does mean that children end up working in groups of 4. If this isn't possible, a child could code by themselves to effectively make a group of 3.</p> <p>This lesson is referred to directly on the Microbit website, link below. You may find the videos and steps to be useful for delivering the lesson, and recapping on the steps involved.</p> <p>There is a direct link to Microbit Classroom as well should you wish to send the code directly to students.</p> <p><a href="https://microbit.org/projects/make-it-code-it/rock-paper-scissors/">https://microbit.org/projects/make-it-code-it/rock-paper-scissors/</a></p>	<p><a href="#">This unit comes with a Digital Floor Book which can be used for recording, assessment and knowledge recall purposes, including key vocabulary. Library here.</a></p>
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Lesson 3.

I can create a game on a Microbit that uses loop commands

**Curriculum milestones:**

**I can create and modify a count or event-controlled loop**

**I can create my own variable for use in a program**

This task takes the form of a workbook for children to follow. The following file could be accessed by children by sending them a link in Google Classroom (or similar).

[https://barclayscodeplayground.co.uk/content/dam/barclayscodeplayground-co-uk/documents/student/CP\\_Microbit\\_invaders\\_workbook.pdf](https://barclayscodeplayground.co.uk/content/dam/barclayscodeplayground-co-uk/documents/student/CP_Microbit_invaders_workbook.pdf)

As per usual, it is best for children to use 1 Microbit between 2 children when exploring this task, and to work through methodically.

It may be useful to share steps from the workbook together on a classroom screen, so that children can share their solutions to each step, and explain any problems that they encountered.

As well as covering the loops function, this activity will give children further awareness of the different coding blocks that are available through the Makecode editor.



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<p>Lesson 4.</p> <p>I can use a Microbit to collect sports science data</p> <p><b>Curriculum milestones:</b></p> <p><b>I can use a condition in an 'if... then... else...' statement to produce given outcomes</b></p> <p><b>I can create my own variable for use in a program</b></p>	<p><b>This activity is likely to take up longer than an hour, and may well take up an afternoon session.</b></p> <p>This activity should inspire a range of children with its footballing context.</p> <p>The activity comes with a selection of video tutorials that will help teachers and children to work through the task. Do not be afraid to show the videos multiple times, pause at set points to question children and advance understanding.</p> <p>The first video comes directly from a BBC programme called The Football Academy:</p> <p><a href="https://www.bbc.co.uk/teach/microbit/football-academy-classroom-resource/zvf8mbk?scrllybrkr=a00e1077">https://www.bbc.co.uk/teach/microbit/football-academy-classroom-resource/zvf8mbk?scrllybrkr=a00e1077</a></p> <p>This can then be supplemented by the more detailed coding videos found here:</p> <p><a href="https://www.microbit.org/projects/make-it-code-it/kick-strength-data-logger/">https://www.microbit.org/projects/make-it-code-it/kick-strength-data-logger/</a></p> <p>You may need to refer back to the coding video a number of times as children produce their data loggers.</p> <p><b>This task will require a way to attach the Microbit to a child's leg (in the free Microbit sets for schools, they came equipped with rubber holder straps). You will also need to use the battery packs.</b></p>	<p><a href="#">This unit comes with a Digital Floor Book which can be used for recording, assessment and knowledge recall purposes, including key vocabulary. Library here.</a></p>
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Lesson 5.

I can write a program to use a Microbit as a digital assistant

**Curriculum milestones:**

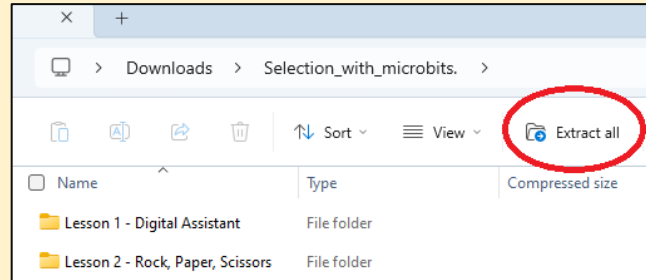
**I can use a condition in an 'if... then... else...' statement to produce given outcomes**

**I can create my own variable for use in a program**

[Download the whole unit here](#) to view the full lesson plans.

NB: If you wish to use any of the Microbit .hex files (example code files) in your lessons, you are advised to click the Extract All button once you have downloaded the unit.

This will also allow you to use the code in Microbit classroom, to send directly to children, if you should wish to.



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