



BBC
LIVE
LESSONS



BBC
micro:bit

BBC LEARNING PRESENTS

Strictly micro:bit Live Lesson

Date: Thursday, 24th March 2016

Time: 11:00am

Duration: 45 minutes

Location: bbc.co.uk/livelessons

(Note: if you can't watch the webcast live, you will be able to watch the recording on the Live Lessons website)

Setup

How much space and equipment is needed?

The lesson can be screened in a classroom or computer laboratory with a large screen linked to a decent broadband connection. Good audio equipment is not essential but will make the event more enjoyable.

As we'll be asking students to get involved with developing their own digital creations during the lesson, the lesson experience would be greatly enhanced if students have ready access to a computer with an internet connection. However, students can also participate in the activities before and after the programme, so this may not be essential if your setup does not allow for it.

If the students already have access to a BBC micro:bit, it would be ideal if they had to hand:

- Their BBC micro:bit
- A PC running Windows 7 or later, or a Mac running OS X 10.6 or later
- Access to the Internet (specifically, www.microbit.co.uk and www.bbc.co.uk/livelessons)
- A Male to Micro USB cable to connect their computers to your micro:bit. This is the same cable that is commonly used to connect a smart phone to a computer.

If you or your students are using the BBC micro:bit for the first time, you can find more details about how to run scripts on the BBC micro:bit on the BBC micro:bit website (www.microbit.co.uk).

How many students can participate?

It's completely up to you how many students you have participating in the session. We want to get as many students as possible engaged in this Live Lesson. Space and access to computers might be a consideration if you have a very large group.

How to prepare for the lesson

Before the lesson

Visit the BBC micro:bit website to learn more about the micro:bit and its functions and capabilities. There you'll also find some short videos to get started with the BBC micro:bit and information about the different code editors.

During the lesson we will be using the Microsoft Block Editor and the Microsoft Touch Develop Editor, so it's advisable for you and your students to briefly familiarise yourselves with how they work prior to the lesson.

Dancing and programming

This first segment of the Live Lesson introduces students to basic algorithms and how a computer processes instructions. They won't require any additional materials at this stage.

Creating digital art and animations on the BBC micro:bit

This segment of the Live Lesson involves the use of the Block Editor. This is a graphical drag and drop code editor that students can easily get started with.

During the Live Lesson, students will be shown and asked to adapt the code for a simple two-frame animation, and given a digital art demonstration by an industry expert.

Before the lesson, they can step through the worksheet and try adapting the code by viewing the hex files on the micro:bit website.

Export and send the hex files for your students' adapted animations to live.lessons@bbc.co.uk and they could be featured during the Live Lesson. Remember to include your student's first name and your school name in the title of the hex file and the email.

Wearable technology and the BBC micro:bit

This segment of the Live Lesson involves the use of the Touch Develop Editor. This is a text-based programming language.

During the Live Lesson, students will be shown how to create their own wearable technology using a BBC micro:bit and a programmable WS2812 RGB LED board. You can find the worksheet for this activity on our website.

There will be insufficient time in the lesson itself to allow students to create these pieces live alongside the lesson, but if your students manage to create their own projects beforehand, we'd love to see them. Send a picture of their work to live.lessons@bbc.co.uk and they could be featured during the Live Lesson.

Music and the BBC micro:bit

This segment of the Live Lesson involves the use of the Block Editor. This is a graphical drag and drop code editor that students can easily get started with.



During the Live Lesson, students will be shown how to create code that plays notes on the BBC micro:bit using the music commands in the Block Editor library, alongside a live coding music demonstration from our guest expert.

Contact us

You can email any questions, comments and adapted hex files before and during the Live Lesson to live.lessons@bbc.co.uk, or use the hashtag #bbclivelessons. We'll aim to answer as many of your questions as possible.

If you let us know if your school is planning to tune in on the day, your school name could be featured on the programme.

Thanks for your interest in our BBC micro:bit Live Lesson, and we hope you'll join us on the 24th of March.

Appendix 1: Curriculum links

Key Stage 3/3rd Level – Computing

As part of the lesson, students will be encouraged to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems
- understand several key algorithms that reflect computational thinking
- use two 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
- 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
- create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability