



Subject: DT

Module 3 BBC Micro:bit

Overarching Topic:			
<p>Why is this topic being studied at this time?</p> <p>How does it fit into the wider subject curriculum?</p>	<p>The microbit is a pocket-sized codable computer with motion detection, a built-in compass and Bluetooth technology, which was given free to every child in year 7 or equivalent across the UK in 2016. A collaboration between 29 partners, the BBC micro:bit is the BBC's most ambitious education initiative in 30 years, with an ambition to inspire digital creativity and develop a new generation of tech pioneers. The UK currently faces a critical skills shortage in the technology sector and the BBC and partners aim to help change that. In the 1980s, the BBC Micro introduced many children to computing for the first time and the BBC micro:bit, part of the BBC's Make it Digital initiative, will build on the legacy of that project for the digital age. It aims to inspire young people to get creative with digital and develop core skills in science, technology and engineering. To prepare our students for the modern industrial designed world they must have core knowledge of the use of programmable components.</p> <p>This will be the first computer-based project that students will complete; the project aims to introduce variety of computer literacy skills including programming, CAD, word processing.</p>		
Essential		Core	
Ambitious			
<p>The Big Questions (What questions will students be able to answer upon mastery of the topic?)</p>	<ul style="list-style-type: none"> - What is an algorithm? - What is a program? - What are inputs, processes and outputs? - What is memory? - How do I use the basic micro:bit controls on the editing suite? - What does CAD stand for? - How do I create a simple design idea using a basic CAD program? - What is the difference between hardware and software components? 	<ul style="list-style-type: none"> - How are algorithms downloaded? - How do I integrate a variable into a program sequence? - How do I use logic statements within a program sequence? - How do I create design ideas using a more advanced CAD program? - Can I use the shake function on the micro:bit? - How would the count function be used in a game of air hockey? 	<ul style="list-style-type: none"> - What would a world be like where everything was controlled using a programming language? - How would you integrate programming language into future human interactions? - What is the future for programmable components? - Do I understand how programming language is used in the development of commercial products that I own? - Can I synthesise information that I have learned in computer science to write a program for the micro:bit in Python? - Can I create complex design ideas using an industry standard CAD program?

The Key Skills/ Techniques	The sophistication and application of skills will become more advanced as students' progress through the critical, core and pinnacle knowledge.		
	Skill/Technique	How will this skill be developed?	
	How to use Java Block Programming software	Step by step guides on student shared area Teacher led tutorials	
	How to build nets	Micro:bit monster activity	
	How to use PowerPoint effectively	Presentation of work over project to be organized and presented using PowerPoint	
	Use of 3D CAD modelling software	Progress through MS Paint > Google Sketchup > ProDesktop	