

KS3 Computing Curriculum 2019-2020

What are the aims and intentions of this curriculum?

Students cover basic Computing aspects such as the components, storage and binary representation. Students then cover the topic of e-safety so students are aware how to stay safe in the digital world. Students are then taught to design and create an interactive product to demonstrate the ability the create products using industry standard software. Students then study a unit of Kodu to introduce programming concepts.

Term	Topics	Knowledge covered	Skills developed	Assessment
Autumn 1	Parts of a Computer Units of storage Binary representation Algorithms The World Wide Web	Parts that make up a computer, different sizes of storage on a computer, what binary is and how it is used, introducing algorithms and why they are used, what is the world wide web?	Be able to identify the components of a computer. Understand the different units of storage and where they are used. Be able to write an algorithm to solve a problem. What is the world wide web? Why is it used.	Work in booklets
Autumn 2	E-safety E-safety situations E-safety movie	What is e-safety, how do you stay safe online, be able to offer advice in particular situations, be able to use ICT to develop e-safety advice.	Be able to use their knowledge of e-safety to give advice in situations. Be able to use ICT skills to create an e-safety movie offering advice to students their age on how to stay safe.	Work in booklets E-safety movie Written assessment on all work so far
Spring 1	Product reviews Interactive product planning Create interactive product	Students are to review current interactive products, students are to design their own interactive product for a scenario, students are to create their own interactive product.	Be able to review current products. Be able to design their own interactive product. Be able to create their own interactive product using industry standard software.	Work in booklets Interactive product
Spring 2	Create interactive product Design log Test interactive product Evaluate interactive product	Understand how to make their own interactive products. Complete a design log to show how they made their product. Test their own product to make sure it works correctly. Know how to evaluate a product they have made.	Be able to create their own interactive product using industry standard software. Be able to demonstrate how they made their own product. Understand how to test their own product to meet a client need. Be able to evaluate their own product.	Work in booklets Interactive product Written assessment on work so far
Summer 1	Introduction to programming Kodu introduction Basic programming	Basic programming concepts. Using Kodu game lab. Be able to programme using Kodu game lab.	Be able to understand basic programming concepts and demonstrate these using Kodu game lab.	Kodu game lab
Summer 2	Design own game Create own game Test own game Evaluate own game	Students are to design their own game. Students are to create their own game which they have designed. Students are to test the game they have made. Students are to evaluate their own game.	Understand how to design their own game and are able to create it using Kodu game lab using programming skills. Students understand how they test their own game and show evidence of the testing. Students are to evaluate their own game	Design work Kodu game Evaluation Written assessment on programming in Kodu

What are the aims and intentions of this curriculum?

Students are to cover a topic on understanding computer systems and how they work, thinking about the range of components that work together. Students are then to cover a topic on Python programming to introduce a text based programming language to develop their problem solving skills. Students are then to cover a unit on how micro:bits work and are to learn how to programme them using blocks of code.

Term	Topics	Knowledge covered	Skills developed	Assessment
Autumn 1	Input, output, processes and storage devices Types of memory and storage Binary to decimal conversion ASCII	Students will cover what the difference between inputs, outputs and storage devices. They will also cover the processes that are involved in this process. Students will cover the different types of memory and storage that computers use. Students will cover binary and the conversion between binary and decimal numbers. ASCII representation and why it is used	Being able to identify the different aspects of computer systems and are able to use their knowledge to complete a range of tasks. Be able to convert binary to decimal and vice versa. Students will also be able to convert decimal into ASCII.	Class booklets and homeworks
Autumn 2	Binary addition Storage devices How data is read from CD's Changing technologies	Students will learn how to complete binary addition. Students will cover the different storage devices and why they're used and the amount of storage they can hold. Students will cover how CD's store binary data. Students will cover a topic on changing technologies and how technology is developing.	Students will develop the skill of binary addition. Students will be able to identify different storage mediums and why they're used.	End of unit written assessment
Spring 1	Introduction to Python Python Programming	Introduction to python programming language. Be able to use python to create simple programs using simple programming techniques. Students skills will develop using more advanced skills such as if statements and loops.	Be able to use Python to create simple programs. Print, variables, inputs, multiplications, if statements, loops, decomposition,	Python programs
Spring 2	Python Programming	Use Python to create simple programs on their own. Students will be given a range of challenges which they should be able to complete using the skills learnt in the previous half term.	Be able to use Python to create simple and complex programs using a range of skills such as print, variables, inputs, multiplications, if statements, loops, decomposition,	Written assessment on Python programming
Summer 1	Introduction to the micro:bit Programming the micro:bit Micro:bit challenges	What is the Micro:bit, why are they used? What can they be used for? How to code a micro:bit using simple blocks to demonstrate different programming techniques.	Identify the different parts of a micro:bit and be able to program them to do different things	Micro:bit booklet Micro:bit learning log
Summer 2	Micro:bit challenges Design their own micro:bit program Create their own micro:bit program	Programming a micro:bit and be able to design, create and evaluate their own code to meet a specific purpose.	Be able to complete a range of micro:bit programs. Be able to design, create and evaluate their own code.	Micro:bit booklet and learning log Micro:bit written assessment