YEAR 9 HALF TERM 1 COMPUTER SCIENCE LEARNING PROGRAMME

Love God
Serve others
Work hard
Value all

Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Programming using Python	Create simple code which create simple outputs Take inputs to make choices that influence the output of the code Use repeats to reuse code Use variables to change the outcomes in repeated code	Sequence Selection Iteration	Opening the interface Input/output commands Sequencing simple instructions Selection to make choices Using iteration to repeat commands Iteration using variables	Linked to the algorithm strand at KS3 and KS4 Computational thinking NEA	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.

YEAR 9 HALF TERM 2 COMPUTER SCIENCE LEARNING PROGRAMME

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Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Programming using Python	Using different data types Develop programs using list and arrays Able to use Boolean Logic	AND OR NOT logic (with language specific syntax) Lists Arrays	Create a basic calculator program taking in two inputs Using Random module to create a number guessing game Secret Santa random Variable program	Linked to the algorithm strand at KS3 and KS4 Computational thinking NEA	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.

YEAR 9 HALF TERM 3 COMPUTER SCIENCE LEARNING PROGRAMME

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Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Computer Systems	Understand how computers are used in the real world Concept of a computer system Understand and Identify different hardware and software Embedded and Non –Embedded Systems	Hardware Software Embedded Non-embedded Programmable Bespoke Input Process Output Operating System	What is a computer? Explain and identify different hardware components which make up a computer system Explain and Identify different types of software used within a computer system Embedded V Non Embedded Systems	Topic 4 Computer Systems at KS4 GSCE Computer Science	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.

YEAR 9 HALF TERM 4 COMPUTER SCIENCE LEARNING PROGRAMME

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Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Data Representation	Understand that computers represent data using simple switches of on and off Using binary simulate how a computer works Convert between different number systems (binary, decimal and hexadecimal) Data storage units	Binary ON OFF Bits Bytes Nibbles KB MB GB TB Decimal/Denary Hex/Hexadecimal	Extend knowledge from previous unit and look at how computer only use switches to represent all of the data Be able to qualify different data storage capacity types Converting between different number systems Binary, Hex and Decimal	Topic 3 Data representation GCSE Computer Science understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand how instructions are stored and executed within a computer system;	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.

YEAR 9 HALF TERM 5 COMPUTER SCIENCE LEARNING PROGRAMME

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Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Data Representation	Understand how sound and images are represented using binary and Hex Calulate file size of images and sound using variables.	Pixels Sampling Frequency Time Resolution Bit depth Colour depth Sample rate	Understand how images can be represented using binary data and Hex data as shorthand Calculate the file size of an image using variables of height, width and colour depth. Understand how sound can be represented using binary data and Hex data as shorthand Calculate the file size of an image using variables of time, bit depth and sample rate.	Topic 3 Data representation GCSE Computer Science understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.
Boolean Logic	Identify and be able to recreate different logic gates and truth tables	AND OR NOT Gate symbols Truth tables	Explanation of the different gates and how they generate their specific truth tables Combine Logic gates to make Logic circuits and truth tables	Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; Topic 4 GCSE Computer Science - Computer systems	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.

YEAR 9 HALF TERM 6 COMPUTER SCIENCE LEARNING PROGRAMME

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Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
Databases	How data is stored in a structured way How databases can queried to find specific answers How tables can be linked together to store large amounts of complex data	Database Tables Queries Records Fields Primary key Foreign key Relationships	Look at how data is stored in a database Different data types and rules for storing data Organising data into records and tables Interrogating databases to find answers using queries Looking at complex databases linked together with relationships.	design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems Topic 7—SQL GCSE Computer Science	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.