Curriculum Progress Plan
Computer

	HALF TERM 1	HALF TERM2	HALF TERM3	HALF TERM 4	HALF TERM 5	HALF TERM 6
Topic Titles	Hardware	Software	Logic	Programming	Programming Project	Social, Ethical & Legal Considerations
	Components of a computer Internal components Peripherals	Operating systems Application software Utility software	Binary numbers Logic gates Sequencing instructions	Planning & Design Variables Input & Output Sequencing Selection Iteration Arithmetic & Logic OperationsComments Testing & Evaluation	Planning & Design Variables Input & Output Sequencing Selection Iteration Arithmetic & Logic OperationsComments Testing & Evaluation	Social Considerations Ethical Considerations Legal Considerations
Stage 5 GCSE 7-9	To define a computer system To list examples of systems To describe the importance of computer systems in the modern world To be able to explain the need for reliability in computer systems To be able to explain the standards in computer systems To be able to explain the importance of ethical and legal considerations when creating computer systems To be able to explain the importance of environmental considerations when creating computer systems To respond to feedback on assessment To be able to describe input and output devices for a wide range of computer controlled situations	Students will demonstrate a mastery of having a good knowledge and understanding of Operating systems Application software and Utility software. Students will demonstrate that they can effectively use and develop Operating systems, Application software and Utility software	To be able to explain why data is represented in computer systems in binary form To understand and produce simple logic diagrams using the operations NOT, AND and OR To produce a truth table from a given logic diagram To produce a truth table from a given logic diagramTo define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte To understand that data needs to be converted into a binary format to be processed by a computer. To be able to convert positive denary whole numbers (0-255) into 8-bit binary numbers and vice versa To be able to add two 8-bit binary integers and explain overflow errors which may occur To be able to convert positive denary whole numbers (0-255) into 2-digit hexadecimal numbers and vice versa To be able to convert between binary and hexadecimal equivalents of the same number	Introduction to Python Numbers and Arithmetic Selection Writing algorithms Assessment – Test a program Fix-it-Five While loops Searching Lists Procedures	Game analysis Sprites and objects Enemies and collision detection Firing projectiles Capturing the flag Testing and assessment Fix-it-Five	Students will demonstrate a mstery of how to ... •learn which information they should avoid sharing online because it is private. •understand which kinds of websites have privacy policies, and why. •practice checking websites they visit for privacy policies and privacy seals of approvals Students will be able to ... •reflect on what it means to be brave and stand up for others offline and online. •learn to show empathy for those who have been cyberbullied. •generate multiple solutions for helping others when cyberbullying occurs. Students will be able to ... •learn that they have a digital footprint and that information from it can be searched; copied and passed on; seen by a large, invisible audience, and can be persistent. •recognize that people's online information can be helpful or harmful

Stage 4 **GCSE 5-6**	To define a computer system To list examples of systems To describe the importance of computer systems in the modern world To be able to explain the need for reliability in computer systems To be able to explain the standards in computer systems To be able to explain the importance of ethical and legal considerations when creating computer systems To be able to explain the importance of environmental considerations when creating computer systems To respond to feedback on assessment To be able to describe input and output devices for a wide range of computer controlled situations	Students will demonstrate a mastery of having a good knowledge and understanding of Operating systems Application software and Utility software. Students will demonstrate that they can effectively use and develop Operating systems, Application software and Utility software	To be able to explain why data is represented in computer systems in binary form To understand and produce simple logic diagrams using the operations NOT, AND and OR To produce a truth table from a given logic diagram To produce a truth table from a given logic diagramTo define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte To understand that data needs to be converted into a binary format to be processed by a computer. To be able to convert positive denary whole numbers (0-255) into 8-bit binary numbers and vice versa To be able to add two 8-bit binary integers and explain overflow errors which may occur To be able to convert positive denary whole numbers (0-255) into 2-digit hexadecimal numbers and vice versa To be able to convert between binary and hexadecimal equivalents of the same number	Introduction to Python Numbers and Arithmetic Selection Writing algorithms Assessment – Test a program Fix-it-Five While loops Searching Lists Procedures	Game analysis Sprites and objects Enemies and collision detection Firing projectiles Capturing the flag Testing and assessment Fix-it-Five	Students will demonstrate a mstery of how to ... •learn which information they should avoid sharing online because it is private. •understand which kinds of websites have privacy policies, and why. •practice checking websites they visit for privacy policies and privacy seals of approvals Students will be able to ... •reflect on what it means to be brave and stand up for others offline and online. •learn to show empathy for those who have been cyberbullied. •generate multiple solutions for helping others when cyberbullying occurs. Students will be able to ... •learn that they have a digital footprint and that information from it can be searched; copied and passed on; seen by a large, invisible audience, and can be persistent. •recognize that people's online information can be helpful or harmful
Stage 3 **GCSE 3-4**	•To understand the function and purpose of a computer •To understand that not every computer looks like a PC and that many everyday devices contain computers • •To be able to identify the main component parts of a computer •To be able to explain the role of the main components within a computer •	To be able to define the term 'software' •To understand that software provides instructions for the computer •To be able to identify different types of software •To be able to distinguish between system software and application software	To simply explain what is meant by binary data and to understand why a computer uses binary data •To be able to identify the first electronic computer •To gain a basic understanding of the role of Colossus in World War II •To gain a basic understanding of how Colossus made use of valves, rewiring and paper tape •To explain the purpose and use of a transistor in computing terms •To understand that computers are getting faster all the time (Moore's Law) To define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte To understand that data needs to be converted into a binary format to be processed by a computer. To be able to explain why data is represented in computer systems in binary form Represent text as binary such as writing names in binary or decoding secret messages	To develop an understanding and use various computing pltaforms including: Variable Swap Codio Scratch Python To effectively learn Planning & Design, Variables, Input & Output Sequencing, Selection, Iteration, Arithmetic & Logic, Operations, Comments, Testing & Evaluation	•To simply give detailed information about the final product to be produced. •To contribute effectively to the work of a group most of the time, to produce detailed planning documents e.g. mind map, brainstorm, thought-shower, showing the allocation of tasks. •To list a range of appropriate success criteria will be given. •describe the main features of three different types of search engine, giving at least one example of each. •explain the appropriate use of at least three techniques when using search engines. •compare the results of searches using these techniques in three different types of search engine •identify a range of information required. •carry out research using the internet and at least two non-internet sources. •use effective internet search criteria. •list sources and evaluate the suitability and reliability of most of them. •comment on the copyright of most of the information found.	Students will start to be able to ... •learn which information they should avoid sharing online because it is private. •understand which kinds of websites have privacy policies, and why. •practice checking websites they visit for privacy policies and privacy seals of approvals Students will be able to ... •reflect on what it means to be brave and stand up for others offline and online. •learn to show empathy for those who have been cyberbullied. •generate multiple solutions for helping others when cyberbullying occurs. Students will be able to ... •learn that they have a digital footprint and that information from it can be searched; copied and passed on; seen by a large, invisible audience, and can be persistent. •recognize that people's online information can be helpful or harmful to their reputation and image.

Stage 2 **GCSE 1-2**	•To develop an understanding of the function and purpose of a computer •To understand that not every computer looks like a PC and that many everyday devices contain computers • •To be able to identify the main component parts of a computer •To be able to explain the role of the main components within a computer •	To develop an understanding of how to be able to define the term 'software' •To understand that software provides instructions for the computer •To be able to identify different types of software •To be able to distinguish between system software and application software	To explain what is meant by binary data and to understand why a computer uses binary data •To be able to identify the first electronic computer •To gain a basic understanding of the role of Colossus in World War II •To gain a basic understanding of how Colossus made use of valves, rewiring and paper tape •To explain the purpose and use of a transistor in computing terms •To understand that computers are getting faster all the time (Moore's Law) To define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte To understand that data needs to be converted into a binary format to be processed by a computer. To be able to explain why data is represented in computer systems in binary form Represent text as binary such as writing names in binary or decoding secret messages	To effectively understand and use various computing pltaforms including: Variable Swap Codio Scratch Python To effectively learn Planning & Design, Variables, Input & Output Sequencing, Selection, Iteration, Arithmetic & Logic, Operations, Comments, Testing & Evaluation	•Give detailed information about the final product to be produced. •To contribute effectively to the work of a group most of the time, to produce detailed planning documents e.g. mind map, brainstorm, thought-shower, showing the allocation of tasks. •To list a range of appropriate success criteria will be given. •describe the main features of three different types of search engine, giving at least one example of each. •explain the appropriate use of at least three techniques when using search engines. •compare the results of searches using these techniques in three different types of search engine •identify a range of information required. •carry out research using the internet and at least two non-internet sources. •use effective internet search criteria. •list sources and evaluate the suitability and reliability of most of them. •comment on the copyright of most of the information found.	Students will be able to ... •learn which information they should avoid sharing online because it is private. •understand which kinds of websites have privacy policies, and why. •practice checking websites they visit for privacy policies and privacy seals of approvals Students will be able to ... •reflect on what it means to be brave and stand up for others offline and online. •learn to show empathy for those who have been cyberbullied. •generate multiple solutions for helping others when cyberbullying occurs. Students will be able to ... •learn that they have a digital footprint and that information from it can be searched; copied and passed on; seen by a large, invisible audience, and can be persistent. •recognize that people's online information can be helpful or harmful to their reputation and image.
Stage 1 **Entry Level**	Emerging understanding of: To understand the function and purpose of a computer •To understand that not every computer looks like a PC and that many everyday devices contain computers • •To be able to identify the main component parts of a computer •To be able to explain the role of the main components within a computer •	Emerging understanding of: To be able to define the term 'software' •To understand that software provides instructions for the computer •To be able to identify different types of software •To be able to distinguish between system software and application software	Emerging understanding of: To explain what is meant by binary data and to understand why a computer uses binary data •To be able to identify the first electronic computer •To gain a basic understanding of the role of Colossus in World War II •To gain a basic understanding of how Colossus made use of valves, rewiring and paper tape •To explain the purpose and use of a transistor in computing terms •To understand that computers are getting faster all the time (Moore's Law) To define the terms bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte To understand that data needs to be converted into a binary format to be processed by a computer. To be able to explain why data is represented in computer systems in binary form Represent text as binary such as writing names in binary or decoding	Emerging understanding of: To effectively understand and use various computing pltaforms including: Variable Swap Codio Scratch Python To effectively learn Planning & Design, Variables, Input & Output Sequencing, Selection, Iteration, Arithmetic & Logic, Operations, Comments, Testing & Evaluation	Emerging understanding of: •Give detailed information about the final product to be produced. •To contribute effectively to the work of a group most of the time, to produce detailed planning documents e.g. mind map, brainstorm, thought-shower, showing the allocation of tasks. •To list a range of appropriate success criteria will be given. •describe the main features of three different types of search engine, giving at least one example of each. •explain the appropriate use of at least three techniques when using search engines. •compare the results of searches using these techniques in three different types of search engine •identify a range of information required. •carry out research using the internet and at least two non-internet sources. •use effective internet search criteria. •list sources and evaluate the suitability and reliability of most of them. •comment on the copyright of most of	Emerging understanding of: Students will be able to ... •learn which information they should avoid sharing online because it is private. •understand which kinds of websites have privacy policies, and why. •practice checking websites they visit for privacy policies and privacy seals of approvals Students will be able to ... •reflect on what it means to be brave and stand up for others offline and online. •learn to show empathy for those who have been cyberbullied. •generate multiple solutions for helping others when cyberbullying occurs. Students will be able to ... •learn that they have a digital footprint and that information from it can be searched; copied and passed on; seen by a large, invisible audience, and can be persistent. •recognize that people's online information can be helpful or harmful