Progression of skills and knowledge

SUBJECT: COMPUTING

Statement of INTENT:

Computing teaching offers opportunities for pupils to view their world in an ever-changing technological environment. There is a focus on computational thinking and creativity, as well as opportunities for creative work in programming and digital media. The national curriculum for computing aims to ensure that all pupils:

• can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
• can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
• can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
• are responsible, competent, confident and creative users of information and communication technology.

Age related Breadth of Study

	EYFS	Key Stage 1	Key Stage 2
		National Curriculum statements: Pupils should be taught to: -understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions -create and debug simple programs -use logical reasoning to predict the behaviour of simple programs -use technology purposefully to create, organise, store, manipulate and retrieve digital content -recognise common uses of information technology beyond school -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	National Curriculum statements: Pupils should be taught to: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts -use sequence, selection, and repetition in programs; work with variables and various forms of input and output -use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs -understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration -use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content -select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information -use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computers		Recognise common uses of information technology in the home and school environment	Recognise common uses of information technology beyond school	Recognise familiar forms of input and output devices and how they are used Make efficient use of familiar forms of input and output devices	Use other input devices such as cameras or sensors		

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Networks				Understand that computer networks enable the sharing of data and information

Understand that the internet is a large network of computers and that information can be shared between computers | Understand what servers are and how they provide services to a network | Begin to use internet services to share and transfer data to a third party | Understand how computer networks enable computers to communicate and collaborate

Begin to use internet services within his/her own creations to share and transfer data to a third party |

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using Computers		Use technology purposefully to create digital content	Use technology purposefully to create, organise, store, manipulate and retrieve digital content

Use technology purposefully to create digital content comparing the benefits of different programs | With support select and use a variety of software to accomplish goals | With support select and use a variety of software on a range of digital devices

With support select, use and combine a variety of software on a range of digital devices to accomplish given goals | Independently select and use appropriate software for a task

Independently select, use and combine a variety of software to design and create content for a given audience | Independently select, use and combine a variety of software to design and create content for a given audience, including collecting, analysing, evaluating and presenting data and information

Design and create a range of programs, systems and content for a given audience

Independently select, use and combine a variety of software to collect, analyse, evaluate and present data and information |

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
E-safety		Understand how to keep safe online	Understand where to go for help and support when he/she has concerns about content or contact on the internet or other online technologies	Use technology safely and keep personal information private	Use technology safely and respectfully, keeping personal information private Use technology safely and recognise acceptable and unacceptable behaviour	Use technology responsibly and understand that communication online may be seen by others Understand where to go for help and support when he/she has concerns about content or contact on the internet or other online technologies	Understand the need to only select age appropriate content	Use technology respectfully and responsibly Identify a range of ways to report concerns about content and contact in and out of school
Net Searching		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					Use simple search technologies Use simple search technologies and recognise that some sources are more reliable than others	Understand how results are selected and ranked by search engines	Use filters in search technologies effectively Use filters in search technologies effectively and appreciates how results are selected and ranked	Be discerning when evaluating digital content Use filters in search technologies effectively and is discerning when evaluating digital content

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Coding	Completes a simple programme on a computer. Programme BeeBots to move (simple instruction)	Predict the behaviour of simple programs Understand what algorithms are and how they are implemented on digital devices	Use logical reasoning to predict the behaviour of simple programs Create simple programs Create and debug simple programs Debug simple programs by using logical reasoning to predict the actions instructed by the code Understand that programs execute by following precise and unambiguous instructions	Design, write and debug programs that control or simulate virtual events Use logical reasoning to explain how some simple algorithms work	Decompose programs into smaller parts Use logical reasoning to detect and correct errors in algorithms and programs Select, use and combine a variety of software, systems and content that accomplish given goals	Design, input and test an increasingly complex set of instructions to a program or device Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems Design, write and test simple programs that follow a sequence of instructions or allow a set of instructions to be repeated Design write and test simple programs with opportunities for selection, where a particular result will happen based on actions or situations controlled by the user Use logical reasoning to explain how increasingly complex algorithms work to ensure a program's efficiency	Include use of sequences, selection and repetition with the hardware used to explore real world systems Solves problems by decomposing them into smaller parts Create programs which use variables Use variables, sequence, selection, and repetition in programs Use logical reasoning to explain how increasingly complex algorithms work and to detect and correct errors in algorithms and programs efficiently