Programme of Study: Computing

Key Stage 1	Key Stage 2
Computer Science • understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • use logical reasoning to predict the behaviour of simple programs • create and debug simple programs Information Technology • use technology purposefully to create, store, manipulate and retrieve digital content Digital Literacy • 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 • recognise common uses of information technology beyond school	Computer Science • 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 Information Technology • 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. Digital Literacy • 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Progression of Study: Computing

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

Computer Science	○ Pupils will begin to understand what algorithms are. ○ Pupils will experiment with animations and know that these work by following precise and unambiguous instructions ○ Pupils will begin to use logical reasoning to predict the behaviour of simple programs	○ Pupils will build on their understanding of what algorithms are. ○ Pupils will know how algorithms are implemented as programs on digital devices to create things like quizzes ○ Pupils will know that programs execute by following precise and unambiguous instructions ○ Pupils will create and debug simple programs when they come across bugs.	○ Pupils will begin to design, write and debug programs that accomplish specific goals, e.g. pupils will design and code their own maze tracing program. ○ Pupils will use logical reasoning to explain how some simple algorithms work.	○ Pupils will develop their skills as they design, write and debug programs that accomplish specific goals. They will create a program by planning, modifying and resting commands to create shapes and patterns. ○ Pupils will use sequence, selection, and repetition in programs; work with variables and various forms of input and output	○ Pupils will expand on their skills as they design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts ○ Pupils will use logical reasoning to explain how some simple algorithms work as they build on their KS1 learning looking at quizzes. They will detect and correct errors in algorithms and programs. ○	○ Pupils will combine their skills as they design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. They will create a simple program and test this in the programming environment and then transfer this to their micro:bit. ○ Pupils will confidently use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Information Technology	○ Pupils will use technology purposefully to create digital content in the form of digital painting.	○ Pupils will use technology purposefully to create and manipulate digital content as they capture digital photographs and explore how images can be edited and manipulated.	○ Pupils will select, use and combine a variety of software on a range of digital devices to design and create a magazine cover. Pupils will focus on purposefully using text and images to communicate. They will explore orientation and layout templates and evaluate decisions based on purpose.	○ Pupils will select, use and combine a variety of software (including internet services) on a range of digital devices to design, create and edit a range of content. They will build on their understanding from Year 2 as they use the Internet to edit images. Children will consider the impact that editing images can have and evaluate the effectiveness of their choices.	○ Pupils will select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of content that accomplish given goals, including presenting data and information. They will create and edit together a video.	○ Pupils will 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.

Digital Literacy	○ Pupils will recognise common uses of information technology beyond school ○ Pupils will use technology safely and respectfully. ○ Pupils will identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	○ Pupils will build on their understanding of common uses of information technology beyond school. They will look at real life examples of information technology in use. ○ Pupils will use technology safely and respectfully, keeping personal information private. ○ Pupils will identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	○ Pupils will understand computer networks and will know the benefits of connecting devices in a network. They will develop their understanding of digital devices. ○ Pupils will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	○ Pupils will apply their understanding of computer networks, to appreciate the internet; how they can provide multiple services, such as the World Wide Web. ○ Pupils will evaluate online content to decide how honest, accurate or reliable it is. ○ Pupils will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	○ Pupils build on their understanding of computer networks and will know the benefits of connecting devices in a network to share information. They will complete a collaborative online project to develop their online collaboration skills. ○ Pupils will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	○ Pupils will use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. ○ Pupils will extend on their understanding of the internet and evaluate different methods of communication online. ○ Pupils will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact