



Computing Knowledge and Skills Progression Map

Core Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science - Programming	<p>National Curriculum: Pupils understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. They can create and debug simple programs and use logical reasoning to predict the behaviour of simple programs.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Create a simple program e.g. to control a floor robot. • Predict the outcome of a simple algorithm or program. • Explain what an algorithm is and create one. • Debug an error in a simple algorithm or program e.g. for a floor robot. 	<p>National Curriculum: Pupils understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. They can create and debug simple programs and use logical reasoning to predict the behaviour of simple programs.</p> <p>Children at Parish will be able to</p> <ul style="list-style-type: none"> • Predict the outcome of an algorithm or program with multiple steps. • Identify and correct errors in a given algorithm or program, and recognise the term debugging. • Explain what an algorithm and program are. • Plan out a program by creating an algorithm, and evaluate its success. 	<p>National Curriculum: Pupils design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>They use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p> <p>They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Modify an existing program • Create examples of algorithms containing count-controlled loops. • Use a forever loop in a program to keep something happening. • Identify errors in a block or text-based program and correct them. • Recognise that different inputs can be used to control a program. 	<p>National Curriculum: Pupils design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>They use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p> <p>They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Create a program using a range of events/inputs to control what happens. • Explain when to use forever loops and count-controlled loops, and use them in programs. • Recognise selection in a program or algorithm. • Use selection in algorithms in programs e.g. if...then... • Design a program for a purpose. • Recognise common mistakes in programs and how to correct them. 	<p>National Curriculum: Pupils design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>They use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p> <p>They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Name a range of sensors in physical systems. • Predict what will happen in a program or algorithm when the input changes. • Use two-way selection i.e. if... then...else... • Recognise variables in a program. • Create programs including 'repeat until' loops. • Create and use simple variables, e.g. to keep score. • Create an algorithm for a physical system (with sensor) 	<p>National Curriculum: Pupils design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>They use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p> <p>They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Design and program a system that uses sensors. • Recognise and use procedures (sub-routines) in programs. • Plan out a program in detail, including task, algorithm, code and execution level. • Use nested selection statements in a program. • Combine a variable with relational operators (< = >) to determine when a program changes. • Recognise key concepts (sequence, selection, repetition and variables).

<p>Information Technology – Creating Media</p>	<p>National Curriculum: Pupils use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Select basic tools/options to change the appearance of digital content, e.g. filter on an image / font / size of paintbrush. • Combine media with support to present information, e.g. text and images. • Type text using a keyboard. 	<p>National Curriculum: Pupils use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Create simple digital content for a purpose, e.g. digital art. • Capture, edit and improve my photos • Present ideas and information by combining media, e.g. text and images. • Identify which photos are real and which have been changed. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Present ideas and information by combining media independently, e.g. text and images. • Design and create simple digital content for a purpose/audience, e.g. poster. • Edit digital content to improve it, e.g. resize text. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Collect, organise and present information using a range of media. • Design, create and edit digital content for a specific purpose. • Identify the features of a good piece of digital content and apply these in own design. • Know where to find copyright free content, e.g. creative images. • Collaborate with peers using online tools. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Use different drawing tools to create images. • Create images by layering and duplicating images to create more complex pieces of work. • Evaluate and improve their own designs. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Select, combine and remix a range of media to create original content. • Consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share). • Identify the most effective tools to present information for a specific purpose.
---	---	---	---	---	---	--

<p>Information Technology – Data and Information</p>	<p>National Curriculum: Pupils use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> Describe objects using labels. Find objects with similar properties. Answer questions about groups of objects. Decide how to group objects to answer a question. Record and share what I have found. 	<p>National Curriculum: Pupils use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> Recognise charts and pictograms and explain why we use them. Explain information shown in a simple chart or pictogram. Modify simple charts/pictograms, e.g. add title, item or labels. Identify the key features of a chart or pictogram. Collect and present data on a topic. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> Use a branching database. Create a branching database. Identify the features of a good question in a branching database. Evaluate a given branching database and suggest improvements. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> Draw conclusions from information stored in a database, chart or table. Design a questionnaire and collect a range of data on a theme. Choose appropriate formats to present data to convey information. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> State the difference between data and information. Perform a search to answer questions about data. Create graphs and charts from data. 	<p>National Curriculum: Pupils use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. They 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> Recognise what a spreadsheet is and what it is used for. Use simple formulae in a spreadsheet to find out information from a set of data. Collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. Produce graphs from data in a spreadsheet to answer a question. Analyse and evaluate data and information in a spreadsheet, chart or database.
---	--	---	---	--	---	--

<p>Digital Literacy – Computing Systems and Networks</p>	<p>National Curriculum: Pupils recognise common uses of information technology beyond school. They can 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Recognise and name a range of digital devices, e.g. laptop, phone, games console. • Log on to the school computer/unlock the school tablet with support. • Identify the basic parts of a computer, e.g. mouse, keyboard, screen. • Use a suitable access device (mouse, keyboard, touchscreen). • Explain why we use passwords and recognise examples of personal information. • Tell an appropriate person if concerned about content. 	<p>National Curriculum: Pupils recognise common uses of information technology beyond school. They can 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.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Explain how IT is used at home. • explain how IT is used in different places • Use a simple password to log onto the computer or a website. • Identify rules for acceptable use of technology in school. • Explain what personal information is and the need to keep it private. • Recognise that some information found online may not be true. 	<p>National Curriculum: Pupils use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Describe what a computer is (input > process > output). • Recognise that school computers are connected. • Keep a password safe. • Identify when not to share personal information. • Understand that games/films have age ratings. 	<p>National Curriculum: Pupils use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Remember and use an individual password. • Recognise what kinds of websites are trustworthy sources of information. • Recognise the benefits and risks of different apps and websites. • Recognise that the media can portray groups of people differently. • Rate a game or film they have made and explain their rating. 	<p>National Curriculum: Pupils use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Explain the difference between the internet and the World Wide Web; and between a search engine and a web browser. • Perform a complex search for information • Find copyright free images and audio, and explain why this is important. • Critically evaluate websites for reliability of information and authenticity. 	<p>National Curriculum: Pupils use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p> <p>Children at Parish will be able to:</p> <ul style="list-style-type: none"> • Explain what makes a strong password and why this is important at school and in the wider world. • Explain how algorithms are used to track online activities with a view to targeting advertising and information. • State that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling.
---	--	---	--	---	--	---