



Christ Church C of E Primary School

Have Faith...

Whole School Curriculum Map: Computing

“Each of you should use whatever gift you have received to serve others, as faithful stewards of God’s grace in its various forms.”

1 Peter 4: 10

2021-2022					
Foundation Stage	<p>Although there is no specific early learning goal or key learning statements for Computing, computing skills can be found in: <u>People, Culture and Communities- geographical development</u> Use of Technology - use technology and IT equipment (e.g. camera, iPad, video/video clips, apps, visualisers or the internet) to make observations or find information about their immediate environment, different locations and places. <u>The natural world- working scientifically</u> Equipment and measures: Use senses/use simple equipment to make observations, (e.g. magnifiers, pipettes, digital microscopes, etc) <u>Being imaginative and expressive</u> Making music: Using voice, objects, homemade and real musical instruments and a range of ICT.</p> <p>In Reception, children are taught to use a computer in order to develop basic skills such as using a mouse and a keyboard. They access and use simple programmes and websites to enhance learning in other areas of the curriculum. Children learn to use a digital camera and also use programmable toys. They use devices such as iPads to access applications to enhance their learning.</p>				
Year 1	Online safety Unit 1.1 Online safety	Coding/programming 1.4 Lego builder 1.5 Maze Explorers 1.7 Coding	Data Handling 1.3 Pictograms	Information technology Multimedia 1.6 Animated story books	Technology Unit 1.9 Technology outside school
Units and Key Learning	<p><i>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.</i></p> <p>To log in safely. • To learn how to find saved work in the Online Work area and find teacher comments. • To learn how to search Purple Mash to find resources. • To become familiar with the icons and types of resources available in the Topics section. • To start to add pictures and text to work. • To explore the Tools and Games section of Purple Mash. • To learn how to open, save and print. • To understand the</p>	<p><i>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.</i></p> <p>1.4 Lego builders</p> <ul style="list-style-type: none"> • To compare the effects of adhering strictly to instructions to completing tasks without complete instructions. • To follow and create simple instructions on the computer. • To consider how the order of instructions affects the result. <p>1.5 Maze Explorers</p> <p>To understand the functionality of the direction keys. • To understand how to create and debug a set of instructions (algorithm). • To use the additional direction keys as part of an algorithm. • To understand how to change and extend the algorithm list. • To create a longer algorithm for an activity. • To set challenges for peers. • To access peer challenges set by the teacher as 2Dos.</p> <p>1.7 Coding</p> <p>To understand what instructions are and predict what might happen when they are followed. • To use code to make a computer program. • To understand what object and actions are. • To understand what an event is. • To use an event to control an object. • To begin to understand how code executes when a program is run. • To understand what backgrounds and objects are. • To plan and make a computer program.</p>	<p><i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</i></p> <p>To understand that data can be represented in picture format.</p> <ul style="list-style-type: none"> • To contribute to a class pictogram. • To use a pictogram to record the results of an experiment. 	<p><i>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</i></p> <p>To introduce e-books and the 2Create a Story tool. • To add animation to a story. • To add sound to a story, including voice recording and music the children have composed. • To work on a more complex story, including adding backgrounds and copying and pasting pages. • To share e-books on a class display board.</p>	<p><i>Recognise common uses of information technology beyond school.</i></p> <p>Understand what is meant by ‘technology’. Considered types of technology used in school and out of school</p>

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Year 2	Online safety Unit 2.2 Online safety	Coding/programming 2.1 Coding	Data Handling 2.4 Questioning 2.3 Spreadsheets	Information technology Multimedia 2. 7 Making music 2.6 Creating Pictures 2.8 Presenting ideas	Technology
Units and Key Learning	<p>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>Unit 2.2 Online Safety</p> <p>To know how to refine searches using the Search tool. • To use digital technology to share work on Purple Mash to communicate and connect with others locally. • To have some knowledge and understanding about sharing more globally on the Internet. • To introduce Email as a communication tool using 2Respond simulations. • To understand how we should talk to others in an online situation. • To open and send simple online communications in the form of email. • To understand that information put online leaves a digital footprint or trail. • To identify the steps that can be taken to keep personal data and hardware secure.</p> <p>Unit 2.5 Effective Searching</p> <p>To understand the terminology associated with searching. • To gain a better understanding of searching on the Internet. • To create a leaflet to help someone search for information on the Internet</p>	<p>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.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>To understand what an algorithm is. • To create a computer program using an algorithm. • To create a program using a given design. • To understand the collision detection event.</p> <ul style="list-style-type: none"> • To understand that algorithms follow a sequence. • To design an algorithm that follows a timed sequence. • To understand that different objects have different properties. • To understand what different events do in code. • To understand the function of buttons in a program. • To understand and debug simple programs 	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>2.3 Spreadsheets</p> <p>To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. • To learn how to copy and paste in 2Calculate. • To use the totalling tools. • To use a spreadsheet for money calculations. • To use the 2Calculate equals tool to check calculations. • To use 2Calculate to collect data and produce a graph</p> <p>2.4 Questioning</p> <p>To learn about data handling tools that can give more information than pictograms. • To use yes/no questions to separate information. • To construct a binary tree to identify items. • To use 2Question (a binary tree database) to answer questions. • To use a database to answer more complex search questions. • To use the Search tool to find information.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>2.6 Creating Pictures</p> <p>To learn the functions of the 2Paint a Picture tool. • To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). • To recreate Pointillist art and look at the work of pointillist artists such as Seurat. • To learn about the work of Piet Mondrian and recreate the style using the lines template. • To learn about the work of William Morris and recreate the style using the patterns template. • To explore surrealism and eCollage</p> <p>2.7 Making Music</p> <p>To make music digitally using 2Sequence. • To explore, edit and combine sounds using 2Sequence. • To edit and refine composed music. • To think about how music can be used to express feelings and create tunes which depict feelings. • To upload a sound from a bank of sounds into the Sounds section. • To record and upload environmental sounds into Purple Mash. • To use these sounds to create tunes in 2Sequence</p> <p>2.8 Presenting Ideas.</p> <p>To explore how a story can be presented in different ways. • To make a quiz about a story or class topic. • To make a fact file on a non-fiction topic. • To make a presentation to the class.</p> <p>Digital Imagery</p> <ul style="list-style-type: none"> • Take photographs using the iPads Begin to discuss the quality of their image and make decisions (e.g. delete a blurred image) Begin to enhance photographs (crop, re-colour) 	<p>Recognise common uses of information technology beyond school</p>

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	Online safety	Coding/programming	Data Handling	Information technology Multimedia	Technology
Year 3	3.2 Online Safety 3.5 Email	3.1 Coding	3.3 Spreadsheets 3.6 Branching database 3.8 Graphing	3.4 Touch typing 3.7 Simulations	
Units and Key Learning	<p><i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</i></p> <p><i>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</i></p> <p>3.2 Online Safety To know what makes a safe password. • To learn methods for keeping passwords safe. • To understand how the Internet can be used in effective communication. • To understand how a blog can be used to communicate with a wider audience. • To consider the truth of the content of websites. • To learn about the meaning of age restrictions symbols on digital media and devices.</p> <p>3.5 Email To think about different methods of communication. • To open and respond to an email using an address book. • To learn how to use email safely. • To add an attachment to an email. • To explore a simulated email scenario</p>	<p><i>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.</i></p> <ul style="list-style-type: none"> • To understand what a flowchart is and how flowcharts are used in computer programming. • To understand that there are different types of timers and select the right type for purpose. • To understand how to use the repeat command. <ul style="list-style-type: none"> • To understand the importance of nesting. • To design and create an interactive scene. 	<p><i>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.</i></p> <p>Unit 3.3 Spreadsheets To use the symbols more than, less than and equal to, to compare values. • To use 2Calculate to collect data and produce a variety of graphs. • To use the advanced mode of 2Calculate to learn about cell references</p> <p>3.6 Branching databases To sort objects using just ‘yes’ or ‘no’ questions. • To complete a branching database using 2Question. • To create a branching database of the children’s choice.</p> <p>3.8 Graphing To enter data into a graph and answer questions. • To solve an investigation and present the results in graphic form.</p>	<p><i>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.</i></p> <p>3.4 Touch typing To introduce typing terminology. • To understand the correct way to sit at the keyboard. • To learn how to use the home, top and bottom row keys. • To practise typing with the left and right hand.</p> <p>3.7 Simulations To consider what simulations are. <ul style="list-style-type: none"> • To explore a simulation. • To analyse and evaluate a simulation </p>	<p><i>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.</i></p>

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Year 4	Online safety 4.2 Online Safety	Coding/programming 4.1 Coding 4.5 Logo	Data Handling 4.3 Spreadsheets	Information technology Multimedia 3.9 Presenting (PowerPoint) 4.6 Animation	Technology 4.8 Hardware Investigators
Units and Key Learning	<p><i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</i></p> <p><i>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</i></p> <p>4.2 Online safety</p> <ul style="list-style-type: none"> • To understand how children can protect themselves from online identity theft. • To understand that information put online leaves a digital footprint or trail and that this can aid identity theft. • To identify the risks and benefits of installing software including apps. • To understand that copying the work of others and presenting it as their own is called ‘plagiarism’ and to consider the consequences of plagiarism. • To identify appropriate behaviour when participating or contributing to collaborative online projects for learning. • To identify the positive and negative influences of technology on health and the environment. • To understand the importance of balancing game and screen time with other parts of their lives. 	<p><i>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.</i></p> <p>4.1 Coding</p> <p>To begin to understand selection in computer programming.</p> <ul style="list-style-type: none"> • To understand how an IF statement works. • To understand how to use co-ordinates in computer programming. • To understand the 'repeat until' command. • To understand how an IF/ELSE statement works. • To understand what a variable is in programming. • To use a number variable. • To create a playable game. <p>4.5 Logo</p> <p>To learn the structure of the coding language of Logo.</p> <ul style="list-style-type: none"> • To input simple instructions in Logo. • Using 2Logo to create letter shapes. • To use the Repeat function in Logo to create shapes. • To use and build procedures in Logo. 	<p><i>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.</i></p> <p>4.3 Spreadsheets</p> <p>To format cells as currency, percentage, decimal to different decimal places or fraction.</p> <ul style="list-style-type: none"> • To use the formula wizard to calculate averages. • To combine tools to make spreadsheet activities such as timed times tables tests. • To use a spreadsheet to model a real-life situation. • To add a formula to a cell to automatically make a calculation in that cell. 	<p><i>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.</i></p> <p>3.9 Presenting (PowerPoint)</p> <p>To understand the uses of PowerPoint.</p> <ul style="list-style-type: none"> • To create a page in a presentation. • To add media to a presentation. • To add animations to a presentation. • To add timings to a presentation. • To use the skills learnt to design and create an engaging presentation. <p>4.6 Animation</p> <p>To discuss what makes a good animated film or cartoon.</p> <ul style="list-style-type: none"> • To learn how animations are created by hand. • To find out how animation can be created in a similar way using the computer. • To learn about onion skinning in animation. • To add backgrounds and sounds to animations. • To be introduced to ‘stop motion’ animation. • To share animation on the class display board and by blogging. 	<p><i>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.</i></p> <p>To understand the different parts that make up a computer.</p> <ul style="list-style-type: none"> • To recall the different parts that make up a computer.

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Year 5	Online safety 5.2 Online safety	Coding/programming 5.1 Coding 5.5 Games Creator	Data Handling 5.3 Spreadsheets 5.4 Databases	Information technology Multimedia 5.6 3D Modelling Digital media (iMovie)	Technology
Units and Key Learning	<p><i>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</i></p> <p><i>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</i></p> <p>Unit 5.2 Online Safety</p> <p>To gain a greater understanding of the impact that sharing digital content can have. • To review sources of support when using technology and children’s responsibility to one another in their online behaviour. • To know how to maintain secure passwords. • To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. • To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. • To learn about how to reference sources in their work. • • To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. To ensure reliability through using different methods of communication</p>	<p><i>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</i></p> <p>Unit 5.1 Coding</p> <p>To begin to simplify code. • To create a playable game. • To understand what a simulation is. • To program a simulation using 2Code. • To know what decomposition and abstraction are in computer science. • To a take a real-life situation, decompose it and think about the level of abstraction. • • To understand how to use friction in code. To begin to understand what a function is and how functions work in code. • To understand what the different variables types are and how they are used differently. • To understand how to create a string. • To understand what concatenation is and how it works</p> <p>Unit 5.6 Games Creator</p> <p>To plan a game. • To design and create the game environment. • To design and create the game quest. • To finish and share the game. • To self and peer evaluate.</p>	<p><i>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.</i></p> <p>Unit 5.3 Spreadsheets</p> <p>To use formulae within a spreadsheet to convert measurements of length and distance. • To use the count tool to answer hypotheses about common letters in use. • To use a spreadsheet to model a real-life problem. • To use formulae to calculate area and perimeter of shapes. • To create formulae that use text variables. • To use a spreadsheet to help plan a school cake sale</p> <p>Unit 5.4 Databases</p> <p>To learn how to search for information in a database. • To contribute to a class database. • To create a database around a chosen topic.</p>	<p><i>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</i></p> <p>5.6 3D Modelling</p> <p>To be introduced to 2Design and Make and the skills of computer aided design. • To explore the effect of moving points when designing. • To design a 3D Model to fit certain criteria. • To refine and print a model.</p> <p>Digital media (iMovie)</p> <p>To produce pictures for a movie To add audio to match pictures</p>	<p><i>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.</i></p>

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Year 6	Online safety 6.2 Online Safety	Coding/programming 6.1 Coding 6.5 Text Adventures	Data Handling 6.3 Spreadsheets	Information technology Multimedia 6.7 Quizzing 6.4 Blogging	Technology 6.6. Networks
Units and Key Learning	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p> <p>6.2 Online Safety</p> <p>To identify benefits and risks of mobile devices broadcasting the location of the user/device. • To identify secure sites by looking for privacy seals of approval. • To identify the benefits and risks of giving personal information. • To review the meaning of a digital footprint. • To have a clear idea of appropriate online behaviour. • To begin to understand how information online can persist. • To understand the importance of balancing game and screen time with other parts of their lives. • To identify the positive and negative influences of technology on health and the environment.</p>	<p>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</p> <p>6.1 Coding</p> <p>To design a playable game with a timer and a score. • To plan and use selection and variables. • To understand how the launch command works. • To use functions and understand why they are useful. • To understand how functions are created and called. • To use flowcharts to create and debug code. • To create a simulation of a room in which devices can be controlled. • To understand how user input can be used in a program. • To understand how 2Code can be used to make a text-adventure game.</p> <p>6.5 Text Adventures</p> <p>To find out what a text adventure is. • To use 2Connect to plan a story adventure. • To make a story-based adventure using 2Create a Story. • To introduce an alternative model for a text adventure which has a less sequential narrative. • To use written plans to code a map based adventure in 2Code.</p>	<p>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>6.3 Spreadsheets</p> <p>To use a spreadsheet to investigate the probability of the results of throwing many dice. • To use a spreadsheet to calculate the discount and final prices in a sale. • To use a spreadsheet to plan how to spend pocket money and the effect of saving money. • To use a spreadsheet to plan a school charity day to maximise the money donated to charity.</p>	<p>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>6.7 Quizzing</p> <p>To create a picture-based quiz for young children. • To learn how to use the question types within 2Quiz. • To explore the grammar quizzes. • To make a quiz that requires the player to search a database. • To make a quiz to test your teachers or parents.</p> <p>6.4 Blogging</p> <p>To identify the purpose of writing a blog. • To identify the features of a successful blog. • To plan the theme and content for a blog. • To understand how to write a blog and a blog post. • To consider the effect upon the audience of changing the visual properties of the blog. • To understand how to contribute to an existing blog. • To understand how and why blog posts are approved by the teacher. • To understand the importance of commenting on blogs.</p>	<p>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>6.6. Networks</p> <p>To learn about what the Internet consists of. • To find out what a LAN and a WAN are. • To find out how the Internet is accessed in school. • To research and find out about the age of the Internet. • To think about what the future might hold.</p>

2021-2022	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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Year 1	1.1 Online Safety and Exploring Purple Mash (4)	1.3 Pictograms (3) 1.4 Lego Builders (3)	1.5 Maze Explorers (3)	1.7 Coding (6)		1.9 Technology Outside School (2) 1. 6 Animated Stories (5)
Year 2	2.2 Online Safety (2) 2. 5 Effective Searching (3)	2.7 Making Music (3) 2.3 Spreadsheets (4)	2.4 Questioning (5)	2.6 Creating Pictures (5)	2.1 Coding (5)	2. 8 Presenting ideas (4)
Year 3	3.4 Touch Typing (4) 3.6 Branching databases (4)	3.8 Graphing (3)	3.7 Simulations (3) Online safety (3)	3.1 Coding (6)	3.3 Spreadsheets (3)	3. 5 Email (6)
Year 4	4.8 Hardware investigators (2) 4.3 Spreadsheets (5)	4.7 Effective Searching (3) 4.5 Logo (4)	3.9 Presenting MS PowerPoints (6)	4.2 Online Safety (4)	4.1 Coding (6)	4.6 Animation (3)
Year 5	5.1 Coding (6) 5.2 Online safety (3)	5.2 Online Safety 5. 6 3D Modelling (4)	5.4 Databases (4)	5.3 Spreadsheets (6)	5.5 Games creator (4)	Digital Media (6)
Year 6	6. 1 Coding (6)	6.7 Quizzing (6)	6.2 Online Safety 6.6 Networks (3)	6.4 Blogging (5)	6.9 Spreadsheets Excel (8)	6. 5 Text Adventures (5)

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