# Computing


SUMMIT LEARNING TRUST

Yarnfield Primary School

# Computing Curriculum Overview

| | | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|---|
| N | Unit Title | Although Technology is no longer an Early Learning Goal in the *Statutory framework for the early years foundation stage* (2021) it falls under the Educational Programme for Understanding the World. At Summit Learning Trust, we recognise that children require access to a range of technologies in their early lives. Children explore a range of technology in the early years foundation stage, supporting their later development in Computing. | | | | | |
| | Domain | | | | | | |
| | Weeks | *By the end of reception children should:* | | | | | |
| R | Unit Title | Know how to operate simple equipment, for example use a touch-screen device with support. | | | | | |
| | Domain | Know how to use ICT hardware to interact with age-appropriate software | | | | | |
| | Weeks | Know how to create content, such as a picture on screen | | | | | |
| | | Know that information can be retrieved from digital devices, such as the internet | | | | | |

| | | Autumn 1 | | | Autumn 2 | | | | Spring 1 | | | Spring 2 | | | Summer 1 | | | Summer 2 | | | |
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| Year 1 | Unit Title | 1.1 Online Safety & Exploring Purple Mash | Review | NOS | 1.2 Grouping and Sorting | 1.3 Pictograms | NOS | Review | 1.4 Lego Builders | NOS | Review | 1.5 Maze Explorers | NOS | Review | 1.6 Animated Story Books | NOS | Review | 1.8 Spread sheets | 1.9 Technology Outside School | NOS | Review |
| | Domain | Online Safety | | Relationships **L3** | Data | Data | Bullying **L3** | | Computational Thinking & Coding | Self-Image **L3** | | Computational Thinking & Coding | Reputation **L3** | | Presenting Information | Managing Information **L3** | | Data | Computer Systems & Networks; Internet Services & Tools | Health **L1** | |
| | Weeks | 4 | 2 | 1 | 2 | 3 | 1 | 1 | 3 | 1 | 1 | 3 | 1 | 1 | 5 | 1 | 1 | 3 | 2 | 1 | 1 |

| | | Autumn 1 | | Autumn 2 | | | | Spring 1 | Spring 2 | | | Summer 1 | | | Summer 2 | | |
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| Year 2 | Unit Title | 2.1 Coding | NOS | 2.3 Spreadsheets | NOS | NOS | Review | 2.4 Questioning | 2.5 Effective Searching | NOS | Review | 2.6 Creating Pictures | NOS | 2.7 Making Music | 2.8 Presenting Ideas | NOS | |
| | Domain | Computational Thinking & Coding | Relationships **L1** | Data | Bullying **L3** | Self- Image **L2** | | Data | Internet Services & Tools | Reputation **L1 & L2** | | Presenting Information | Privacy **L1** | Making Music | Presenting Information | Copyright **L2 & 3** | |
| | Weeks | 6 | 1 | 4 | 1 | 1 | 1 | 5 | 3 | 1 | 1 | 5 | 1 | 3 | 4 | 1 | |

| | | Autumn 1 | | Autumn 2 | | | Spring 1 | | | Spring 2 | | Summer 1 | | Summer 2 | |
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| Year 3 | Unit Title | NOS | 3.1 Coding | NOS | 3.4 Touch Typing | Review | NOS | 3.3 Spread sheets | Review | NOS | 3.6 Branching Data bases | NOS | 3.5 E-Mail | NOS | 3.9 Presenting (with MS PowerPoint) |
| | Domain | Relationships **L2** | Computational thinking & coding; Computer systems and networks | Bullying **LL1 & L2** | Presenting Information | | Self-image **L2 & L3** | Data | | Reputation **L2** | Data | Managing information **L2** | Online Safety; Internet services & tools. | Health **L3** | Presenting Information with MS PowerPoint |
| | Weeks | 1 | 6 | 1 | 4 | 2 | 1 | 3 | 1 | 1 | 4 | 1 | 6 | 1 | 6 |

| | | Autumn 1 | | Autumn 2 | | Spring 1 | Spring 2 | | Summer 1 | | | | Summer 2 | | |
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| Year 4 | Unit Title | NOS | 4.1 Coding | 4.3 Spreadsheets | NOS | 4.4 Writing for different audiences | 4.5 Logo | NOS | NOS | 4.6 Animation | Review | NOS | 4.7 Effective Search | 4.8 Hardwar Investigators | NOS | Review |
| | Domain | Relationships **L1** | Computational Thinking & Coding | Data | Bullying **L3** | Presenting Information | Computational Thinking & Coding | Self image **L1** | Reputations **L1** | Presenting information | | Privacy **L3** | Online Safety; Internet Services & Tools | Computer Systems & Networks | Copyright **L2** | |
| | Weeks | 1 | 6 | 6 | 1 | 5 | 4 | 1 | 1 | 3 | 2 | 1 | 3 | 2 | 1 | 1 |

| | | Autumn 1 | | Autumn 2 | | Spring 1 | | Spring 2 | | Summer 1 | Summer 2 | | |
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| Year 5 | Unit Title | NOS | 5.1 Coding | NOS | 5.3 Spreadsheets | NOS | 5.4 Databases | NOS | 5.6 3D Modelling | Unit 5.8 Word processing (with Microsoft Word) | NOS | NOS | 5.5 Game Creator Review |
| | Domain | Relationships **L1** | Computational Thinking & Coding | Bullying **L1 & 2** | Data | Self-image **L1** | Data | Reputation **L3** | Presenting Information | Presenting Information; Internet Services & Tools | Managing information **L1 & 3** | Health **L1** | Computational Thinking & Coding; Presenting Information |
| | Weeks | 1 | 6 | 1 | 6 | 1 | 4 | 1 | 4 | 7 | 1 | 1 | 5 |

| | | Autumn 1 | | Autumn 2 | | | Spring 1 | | Spring 2 | | | Summer 1 | Summer 2 | | | |
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| Year 6 | Unit Title | NOS | 6.1 Coding | NOS | 6.3 Spreadsheets (Excel) | Review | NOS | 6.4 Blogging | NOS | 6.6 Networks | Review | 6.5 Text adventures | NOS | 6.7 Quizzing | NOS | Review |
| | Domain | Relationships **L3** | Computational Thinking and Coding | Bullying **L1** | Data | | Self-image **L2** | Presenting information | Reputation **L1** | Computer Systems and Network | | Computational Thinking and Coding | Privacy L3 | Presenting Information: Computational Thinking and Coding | Copyright **L1** | |
| | Weeks | 1 | 6 | 1 | 5 | 1 | 1 | 4 | 1 | 3 | 1 | 7 | 1 | 2 | 1 | 3 |

# Computing Progression

| | Computing Progression Map<br>This progression map shows an overview of how key knowledge and skills progress in Computing in the primary age range. | | | | | | |
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| **End Points** | **EYFS** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **Computational Thinking and Coding** | Although Technology is no longer an Early Learning Goal in the *Statutory framework for the early years foundation stage* (2021) in falls under the Educational Programme for Understanding the World. At Summit Learning Trust, we recognise that children require access to a range of technologies in their early lives. Children explore a range of technology in the early years foundation stage which supports their later development in Computing.<br><br>*By the end of reception children should:*<br><br>Know how to operate simple equipment, for example use a | Know that an algorithm is a set of instructions and that an algorithm written for a computer is called a program.<br><br>Know how to identify what is wrong with a simple program<br><br>Know how to create a simple program<br><br>Know how to predict what a simple program will do | Recognise what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.<br><br>Know how to create a simple program that achieves a specific purpose and be able to identify and correct some errors<br><br>Know how to use logical reasoning to predict what a simple program will do | Know how to design and write a program for a specific goal that follows a simple sequence and know how to use selection, repetition and variables in code.<br><br>Know how to debug a simple error in an algorithm or program.<br><br>Know how to 'read' an algorithm or program with several steps and predict what it will do | Know how to design and write a program for a specific goal using logical reasoning and know how to use selection, repetition and variables in code.<br><br>Know how to debug code using different methods, for example stepping through each line of code.<br><br>Know how to 'read' programs with several steps and logically predict the outcome with increasing accuracy | Know how to design and write a program to accomplish more complex goals by decomposing them into smaller parts and by using selection, repetition and variables<br><br>Know how to use logical reasoning to debug algorithms and programs<br><br>Know how to 'read' more complex programs and logically predict the outcome with increasing accuracy | Know how to design and write a program to accomplish more complex goals by decomposition and abstraction and know how to nest coding structures within each other.<br><br>Know how to use logical reasoning to debug algorithms and programs<br><br>Know how to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole. |
| **Computer Systems and Networks** | | Know the meaning of information technology and know how to identify information technology used in school and at home. | Know that the technology they use in school is similar to applications in the adult world (e.g. software used to keep attendance data) | Know the meaning of 'input' and 'output' and know how to identify inputs and outputs in computer systems | Know the main components of a computer and their function. | Know what a computer network is and why it is important and how they enhance communication and collaboration | Know the difference between WAN and LAN and know how we access the internet in school<br><br>Know the difference between the internet and the World Wide Web |

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| **Internet Services and Tools** | touch-screen device with support.<br><br>Know how to use ICT hardware to interact with age-appropriate software<br><br>Know how to create content, such as a picture on screen<br><br>Know that information can be retrieved from digital devices, such as the internet | Know how to use links to websites to find information.<br><br>Know how to recognise ways we use different technology in the classroom. | Know how to find information using a search engine<br><br>Know how to share work and communicate electronically. | Know how to use a range of online systems to find digital content.<br><br>Know how to use email respectfully and use good etiquette. | Know how to identify key words to use when searching the World Wide Web.<br><br>Know how search results are selected and ranked.<br><br>Know how to make predictions about accuracy of information found online through online searches<br><br>Know how to share digital content using a range of systems. | Know how to search precisely when using a search engine and know which words to add or remove to find better results.<br><br>Know how explain in detail how accurate, safe and reliable content is on a webpage.<br><br>Know how to select the most appropriate online communication tool for a specific purpose.<br><br>Know how to find out who the information on a website belongs to. | Know how to use filters when searching for digital content.<br><br>Know how to compare a range of digital sources and rate them in terms of content quality and accuracy.<br><br>Know about copyright and know how to acknowledge the sources of information online. |
| **Presenting Information** | | Know how to name, save and find work.<br><br>Know how to add sound, pictures and text to a document<br><br>Know how to use a keyboard or a word bank to enter text. | Know how to name, save, organise and find work.<br><br>Know how to create and edit more complex digital data for a purpose, for example data in music composition Software. (E.g. 2sequence) | Know how to present data and information using a wider range of software. (E.g. 2Question & 2Calcualtye)<br><br>Know how to select the most appropriate technology for a given task.<br><br>Know how to use appropriate keyboard commands to amend text, including making use of spellchecker. | Know how to use and combine software to create, modify and present documents to accomplish a set goal<br><br>Know how to improve digital solutions based on feedback and give feedback to others using a checklist.<br><br>Know how to use photos, video and sound to create an atmosphere when presenting to different audiences. | Know how to select, use and combine the appropriate technology tools to create effects that will impact others.<br><br>Know how to make appropriate improvements to content and confidently give feedback to others on their digital solutions.<br><br>Know how to select an appropriate tool to create and share online work. | Know how to consider the intended audience when designing and creating digital content.<br><br>Know how to effectively evaluate the quality of own and others work and suggests refinements. |
| **Data** | | Know how to sort simple digital content (sound, pictures, text)<br><br>Know how to present data using a pictogram | Know how to organise data (for example database, binary tree, spreadsheet) and retrieve data using simple searches | Know how to collect, input, analyse and present data using features within software (e.g. 2Calculate, branching database, graphing tool) | Know how select and use software to collect, input, analyse and present data in order to accomplish specific goals | Know how select and use software to collect, input, analyse and present data in order to answer questions and accomplish specific goals<br><br>Know how to evaluate data for accuracy and plausibility | Know how to plan a data collection process and how to collect, input, analyse and present data to answer questions and accomplish more challenging goals<br><br>Know how to take into account the intended audience when presenting data<br><br>Know how to compare data and rate it for accuracy and plausability. |

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| **Online Safety**. | | Know the importance of keeping login information safe.<br><br>Know who to talk to if something worrying or upsetting is viewed online. | Know how to use technology safely and respectfully.<br><br>Know the consequences of not searching online safely.<br><br>Know who to talk to if something worrying or upsetting is viewed online and to explain why this is important. | Know what makes a safe password, how to keep them safe and what happens if you do not.<br><br>Know how to report inappropriate content and contact in more than one way.<br><br>Know how to use communication tools respectfully and use good etiquette. | Know how to follow online safety rules to stay safe, and to be responsible and respectful when using online services<br><br>Know the positive and negative influences of technology on health and the environment.<br><br>Know how to report inappropriate content and contact in more than one way and know immediate strategies to keep safe. | Know what personal information is and know strategies for keeping this private.<br><br>Know how to consistently follow online safety rules to stay safe, and to be responsible and respectful when using online services<br><br>Know strategies to protect mental wellbeing when using online services. | Know what personal information is, know strategies for keeping this private and know the risks of sharing personal information.<br><br>Know how to use critical thinking to stay safe, and to be responsible and respectful when using online services<br><br>Know how to identify behaviours online that put young people at risk, for example grooming. |
| | Additionally, see *KCSIE. Relationships Education, Relationships and Sex Education (RSE) and Health Education Statutory guidance for governing bodies, proprietors, head teachers, principals, senior leadership teams, teachers* (June 2019) contains additional requirements for teaching Online Safety which are covered in PHSE lessons. | | | | | | |

| End Point | National Curriculum Alignment | |
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| | **KS1** | **KS2** |
| **1. Computational Thinking and Coding**<br><br>Students can analyse a problem using computational thinking and can design, write and debug code to solve such problems. | • Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions<br>• Create and debug simple programs<br>• Use logical reasoning to predict the behaviour of simple programs | • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts<br>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output<br>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs |
| **2. Computer Systems and Networks**<br><br>Students understand purpose of main components of computer systems and understand the purpose of computer networks and how they work. | • Recognise common uses of information technology beyond school | • 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 |
| **3. Internet Services and Tools**<br><br>Students understand key internet services (e-mail, world wide web, search technology) and can choose the best internet tools for a specific purpose | • Recognise common uses of information technology beyond school<br>• Use technology purposefully to create, organise, store, manipulate and retrieve digital content | • 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<br>• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content |

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| | | • 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 |
| **4. Presenting information**<br><br>Students can select, use and combine software to prepare and present information in a range of forms. | • Use technology purposefully to create, organise, store, manipulate and retrieve 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 |
| **5. Data**<br><br>Students can collect, analyse evaluate and present data using databases and spreadsheets. | • Use technology purposefully to create, organise, store, manipulate and retrieve 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 |
| **6. Online Safety**.<br><br>Students are confident digital citizens and can use the internet and technology in a safe, considered and respectful way. | • 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 | • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. |