

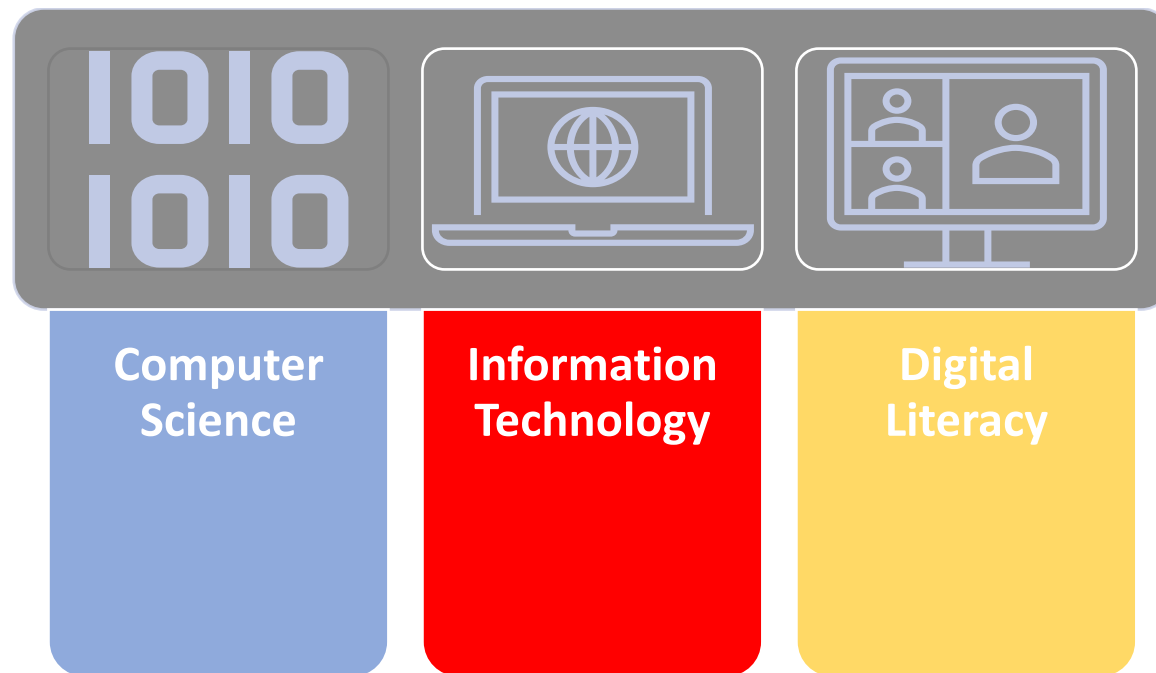
Computing Curriculum Overview



*“Learning, loving and growing; together as
God’s children.”*

Our Approach

We follow the **Purple Mash** Computing framework as the basis of our curriculum. Our **cyclical** curriculum focuses on the 3 aspects below and our pupils develop their knowledge and understanding of **computational concepts** through exploring the different applications of them within real world contexts. Each time they revisit an aspect within a theme, it is with **increasing complexity** and **depth** to build on their **prior knowledge**. It is **taught weekly** in a discreet 50 minute session to develop our pupils key knowledge and skills and our **pupils apply their learning across the curriculum** through the products they create in different subject disciplines. Computing is currently evidenced in a whole class floor book to document the learning process and range of pupil products. In addition, each unit has its own **knowledge organiser** and **vocabulary overview**.



EYFS Overview

Year	Autumn	Spring	Summer
EYFS	Introduction to use of the mouse/track pad & experimenting with drawing - To know how to 'hold' a mouse. - To be able to move the mouse purposefully. - To be able to click the left-hand mouse button to perform an action. - To be able to use click and drag to move objects purposefully. - To be able to use the scroll roller on a mouse. - To know how to use a laptop touchpad - To be able to select colours. - To be able to mark make purposefully on the screen. - To be able to control the pencil width. - To be able to choose tools to experiment with. - To be able to use the undo button. - To be able to erase parts of pictures. - To be able to draw using a touch screen. - To be able to draw using mouse control.	Introduction to Online Safety & looking after Hardware - To be able to explain what it means to own digital content. - To be able to explain what 'private' means when using technology. - To be able to express how it feels to be uncomfortable with something. - To be able to name 5 people who can help with negative feelings. - To be able to think about how to show kindness to others. - To begin to be aware of the impact of a lot of screen time. - To be able to take appropriate actions before using technology. - To be able to understand why food should be kept away from devices. - To be able to identify electrical safety as important. - To know safe ways to transport portable devices. - To be able to relate being gentle and sharing to the use of devices. - To be able to understand what technology is. - To be able to identify the main parts of a computer.	Introduction to Programmable Toys - To be able to describe a route that is in progress. - To be able to describe a route taken by another person while it is being enacted. - To be able to follow a route taken by another person after it has been enacted. - To plan routes for toy vehicles. - To follow a plan for a toy vehicle. - To use the buttons on a floor robot to make it move. - To purposefully use the buttons on a floor robot to make it move one step at a time. - To be able to input a program of 2 or 3 steps into a floor robot and then run the program to make it move. - To be able to interpret simple instructions to predict the outcome. - To be able to plan and input instructions for a floor robot one step at a time. - To be able to plan and input instructions for a floor robot more than one step at a time.
Continuous Provision To have role play opportunities for exploring technology around them: ➤ in the home such as toy microwave, cameras & clocks and use of Mash cams to talk about use of technology in role as a chef or refuse collector. ➤ in the outdoors such as traffic lights, walkie talkies and construction sites or magnifying tools and use of Mash cams to talk about outdoor technology such as a farmer or police officer. ➤ in the wider world such as a toy shopping till, calculator, barcode reader, QR code, spacecraft or doctors set and use Mash cams to talk about technology in different job roles. To develop keyboard skills through regular opportunities for children to find keys on the keyboard, identify the spacebar, delete, enter & arrows keys, type upper and lower case letters using caps lock and build up recognition of typing both on physical and tablet based keyboards. To experiment with creating and recording sound and or images through the use of Mash cams, 2Beat, 2Explore, Mini Mash, Digital Cameras & 2Create a story.			

KS1 Overview

Year	Autumn		Spring		Summer	
1	Online Safety & Exploring Purple Mash Creative Computing - To understand what a program is. - To learn how to open, save and print. - To be able to type own username and password to log in and out. - Making digital art - Making and sharing jigsaws - Making a drag and drop game	Grouping/Sorting & - To sort items using a range of criteria. - To sort items on the computer using the 'Grouping' activities in Purple Mash	Pictograms - To understand that data can be represented in picture format. - To contribute to a class pictogram and record results of an experiment.	Animated Story Books - 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.	Coding - To understand what instructions are and predict what will happen when instructions are followed. - To understand that computer programs work by following instructions called code. - To use code to make a computer program. - To understand what objects/actions are and understand what an event is. - To use an event to control an object. - To understand what an event is. - To begin to understand how code executes when a program is run. - To understand what backgrounds and objects are. - To understand how to use the scale property. - To plan and make a computer program.	Unit 1.8 & 1.9- Spreadsheets & Technology Outside School - To enter data into spreadsheet cells. - To use 2Calculate image tools to add clipart to cells. - To use 2Calculate control tools: lock, move cell, speak and count - To walk around the local community and find examples of where technology is used. - To record examples of technology outside school.

2	Unit 2.1-Coding - To understand what an algorithm is and that they follow a sequence. - To create a computer program using an algorithm. - To create a program using a given design. - To understand the collision detection event. - To design an algorithm that follows a timed sequence. - To understand what different events do in code. - To understand the function of buttons in a program. - To understand and debug simple programs.	The Internet - To know how to refine searches using the Search tool. - To have some knowledge and understanding about sharing more globally on the Internet. - 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. - To understand what the Internet and World Wide Web are and how websites and webpages are accessed.	Spreadsheets - 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.	Questioning - 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.	Creating Pictures - 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.	Presenting Ideas - 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
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		To know who to talk to and where to go for help if something online worries or upsets me.				
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KS2 Overview

Year	Autumn		Spring		Summer	
3	Spreadsheets & Touch Typing - 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. - 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	Presenting - To understand the uses of PowerPoint. - 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.	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.	Coding - 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. - To understand the importance of nesting.	Emails - To understand how people communicate with each other. - To understand and respond to an email. - To compose and send an email. - To send an email attachment. - To learn how to use email safely. - To explore simulated email scenarios.	Branching Databases - To understand what a branching database is. - To understand how branching databases use yes/no questions to sort information. - To ask appropriate questions to sort and identify objects. - To use a branching database to find information. - To create a branching database using appropriate questions and information. - To select appropriate images and information for a branching database. - To test and debug a branching database.

						To evaluate whether a branching database is effective and easy to use
4	Coding - To begin to understand selection in computer programming. - 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.	Online Safety - 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.	Sound Stories - To explore how font size and style can affect the impact of a text. - To use a simulated scenario to produce a news report. - To use a simulated scenario to write for a community campaign.	Logo & Hardware Investigators - To learn the structure of the coding language of Logo. - 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.	-Animation & Effective Searching - To locate information on the search results page. - To use search effectively to find out information. - To assess whether an information source is true and reliable	Introduction to AI - To understand what artificial intelligence (AI) is. - To recognise examples of AI in everyday life. - To understand how AI can be used to help people. - To explore how AI can learn from information and data. - To identify some of the positive and negative impacts of AI. - To understand that AI-generated information may not always be accurate or reliable. - To Consider how AI might be used in the future

		- 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.				
5	Coding - 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	Online Safety - 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.	Spreadsheets - 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.	Databases - To learn how to search for information in a database. - To contribute to a class database. - To create a database around a chosen topic	Game Creator - 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.	Concept Maps - 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.

		- 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.				
6	Unit 6.1-Coding - To understand how functions can be used to simplify and organise code. - To understand how functions are created and called. - To use flowcharts to plan, create and debug code. - To understand how user input can be used in a program. - To use selection and variables to create more complex programs. - To create a simulation using code. - To test and debug programs to identify and correct errors. - To use code efficiently by decomposing a problem into smaller parts	Online Safety - 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.	Spreadsheets - 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.	Blogging - To identify the purpose of writing a blog. - To identify the features of successful blog writing. - 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 the importance of commenting on blogs. - To peer-assess blogs against the agreed success criteria.	Networks - 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.	Binary - To understand that digital systems represent all types of data using binary. - To understand that binary uses 1s and 0s to represent data. - To understand how binary represents numbers. - To recognise how 1s and 0s can represent on and off states in digital systems. - To convert simple decimal numbers into binary. - To explore how binary is used to represent information in digital systems.

		To identify the positive and negative influences of technology on health and the environment.		To understand how and why blog posts and comments are approved by the teacher.		
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