



# Computing Curriculum

## Computing Overview

### **General:**

- (1) This document should be printed by each teacher and referred to during planning.
- (2) This scheme of work does not tell you how to teach a unit, this is at the discretion of the teacher. However, reference should be made to the progression of skills listed in this document and Classroom Monitor updated.
- (3) At the start of each year time must be given to online safety and to ensure that parents and pupils reflect on and then sign the schools Acceptable Use Agreement. This is sent out annually.
- (4) Teachers must make full use of the computers by providing continual opportunities for children to access material relevant to the current topic. Teachers should also be aware that valuable resources could be independently accessed by the children via Purplemash, Scratch Coedit and Espresso. Each term a topic home learning letter is sent to parents.

## The areas of the curriculum

The new Computing curriculum is divided into three areas, Digital Literacy, Information Technology and Computer Science.

**Digital Literacy:** Online Safety will be taught throughout the academic year. Where possible, parents will be involved with this learning. We will encourage children to be critically aware of information they find online and how to think about whether to accept it. As a school we will actively participate in Safer Internet Day each year.

**Information Technology:** The following areas are covered: Using a computer, keyboard skills, Digital Research, Data Handling, Modelling, Data Logging, Text and graphics and Multimedia / digital imaging

**Computer Science:** The core of computing is computer science, in which pupils are taught the principles of information and computation, and how digital systems work.



# Computing Curriculum

DL = Digital Literacy

CS= Computer Science

IT - Digital citizenship

## Objectives from the National Curriculum

### Key Stage 1

Pupils should be taught to:

- ✚ 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
- ✚ use technology purposefully to create, organise, store, manipulate and retrieve digital content
- ✚ use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet
- ✚ recognise common uses of information technology beyond school.

### Key Stage 2

Pupils should be taught to:

- ✚ 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
- ✚ 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; know a range of ways to report concerns and inappropriate behaviour
- ✚ select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.



## KEY SKILLS

### Computing Curriculum

	EYFS Purple Mash	Year 1 Purple Mash	Year 2 Purple Mash	Year 3	Year 4	Year 5	Year 6
<b>Key Skills</b>	<p><b>Early learning goal - technology</b></p> <p>Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.</p> <p>*Suggestion of Purple Mash EYFS curriculum with cross curricular links.</p>	<p>To log on &amp; off a computer.</p> <p>To type in my username and password.</p> <p>To control the mouse to draw lines or drag items.</p> <p>To save work into designated folders.</p> <p>To use forwards and backwards to explore websites.</p>	<p>To know own username and password to log on to the computer.</p> <p>To save work with an appropriate file name</p> <p>To retrieve my work from a saved folder.</p> <p>To use cut/copy/paste with text and images in a word document.</p> <p>To print work to a printer.</p> <p>To understand the difference between left and right click.</p> <p>To resize objects added to work.</p> <p>To use maximise and minimize.</p>	<p>To shut down computers correctly.</p> <p>To log on and off ready for the next person.</p> <p>To save work in the correct file.</p> <p>To know the difference between save and save as.</p> <p>To use backspace and delete.</p> <p>To print work on a selected printer.</p>	<p>To understand Complex Printing- and know different print option</p> <p>To change Password</p> <p>To take Screen Shots</p> <p>To resize Digital Images</p> <p>To create a folder</p>	<p>To save Work to appropriate Folders</p> <p>To use Complex Printing options</p> <p>To create and adapt folders</p> <p>To resize Windows</p>	<p>To save Work to appropriate Folders</p> <p>To use complex Printing options</p> <p>To create and adapt folders</p> <p>To change Passwords</p> <p>To take Screen Shots.</p> <p>To resize digital images</p>



## Computing Curriculum

	EYFS Purple Mash	Year 1 Purple Mash	Year 2 Purple Mash	Year 3	Year 4	Year 5	Year 6
<b>Key Skills - continued</b>		<p><b>Keyboard Knowledge</b></p> <p>To left click to select.</p> <p>To use backspace</p>	<p><b>Keyboard Knowledge</b></p> <p>To know the function of caps lock.</p>	<p><b>Keyboard Knowledge</b></p> <p>To introduce touch typing (10 minute starter)</p> <p>To understand the shift key.</p> <p>To understand arrow keys.</p> <p>To know how to undo and redo.</p> <p>To use different ways to highlight text.</p> <p>To <b>apply</b> changes to text e.g. bold, italic or underline it and <b>distinguish</b> when to use these</p> <p>To change font type, size and colour and to know when it is appropriate.</p>	<p><b>Keyboard Knowledge</b></p> <p>To competently touch type (10 minute starter)</p> <p>To create a simple text box.</p> <p>To use bullet points.</p> <p>To align text.</p> <p>To understanding what a spread sheet does.</p> <p>To know how to graph successfully.</p>	<p><b>Keyboard Knowledge</b></p> <p>To move a word sentence by lassoing the text and dragging it to a new position.</p> <p>To move a word or section of text within the document by cutting and pasting.</p> <p>To check spelling and grammar.</p> <p>To orient the page view and page size and print on different size paper.</p> <p>To insert a picture, Word Art or clip-art understanding that in a word-processor text is primary.</p> <p>To insert a table.</p>	<p><b>Keyboard Knowledge</b></p> <p>To indent manually or within a list and know when to use these skills.</p> <p>To know how to bring full menus when using MS Word.</p> <p>To copy and paste from the Internet into MS Word removing Web formatting.</p> <p>To save a copy of a document as a pdf file.</p> <p>To insert and manipulate Word art.</p> <p>To group and un-group objects.</p> <p>To select, copy and paste objects or groups of objects.</p> <p>To <b>recognise</b> how to mail merge.</p>



## Computing Curriculum

	EYFS Purple Mash	Year 1 Purple Mash	Year 2 Purple Mash	Year3	Year 4	Year 5	Year 6
<b>Key Skills - continued</b>						<p>To adjust a tables format by adding new columns or rows and merging cells.</p> <p>To <b>apply</b> a new style to a document.</p> <p>To insert and format Shapes.</p>	<p>To understand how to manipulate numbers using formulas and other techniques</p>



## Computing Curriculum

	EYFS- Purple Mash	Year 1 -Purple Mash	Year 2 -Purple Mash	Year 3	Year 4	Year 5	Year 6
Digital citizenship	<p><b>Acceptable Use Agreement</b></p> <p>To use technology safely and respectfully.</p>	<p><b>Acceptable Use Agreement</b></p> <p>To sign up to the Acceptable Use Agreement.</p> <p>To use technology safely and respectfully.</p>	<p><b>Acceptable Use Agreement</b></p> <p>To sign up to the Acceptable Use Agreement.</p> <p>To use technology safely and respectfully.</p>	<p><b>To use the Internet Legend programme (KS2)</b></p> <p>To <b>describe</b> ways of protecting their online reputation.</p> <p>To <b>identify</b> ways of working out whether online information is reliable.</p> <p>To understand how to be a critical consumer online</p>	<p><b>To use the Internet Legend programme (KS2)</b></p> <p>To <b>apply</b> the internet legend sharp alert secure kind brave</p> <p>To <b>recognise</b> and demonstrate ways of protecting their online reputation.</p> <p>To <b>identify</b> ways of working out whether online information is reliable.</p> <p>To understand how to be a critical consumer online</p>	<p><b>To use the Internet Legend programme (KS2)</b></p> <p>To know how to seek help if they feel unsafe online.</p> <p>To <b>identify</b> ways to secure information online by creating strong passwords.</p> <p>To <b>identify</b> what they can do to be kind online.</p> <p>To understand how to identify scams and what 'phishing' means.</p> <p>To develop safe habits online.</p>	<p><b>To use the Internet Legend programme (KS2)</b></p> <p>To know what having a positive digital footprint means and how to build this.</p> <p>To <b>recognise</b> and <b>evaluate</b> online privacy boundaries for themselves and others.</p> <p>To develop respectful, and healthy empathetic online relationships.</p> <p>To <b>describe</b> and <b>organise</b> how to be respectful in a healthy and safe way online.</p>



## Computing Curriculum

	EYFS- Purple Mash	Year 1 -Purple Mash	Year 2 -Purple Mash	Year 3	Year 4	Year 5	Year 6
<b>Digital Literacy</b>	<p><b><u>Presenting Skills</u></b> Not taught in EYFS</p>	<p><b><u>Presenting Skills</u></b> Not taught in KS1</p> <p>To learn and <b>remember</b> how to type my name and very simple sentences.</p> <p>To use a chosen programme such as 2Simple software.</p> <p>To <b>create</b> my own image on 2paint (e.g self-portrait) and make changes.</p>	<p><b><u>Presenting Skills</u></b> Not taught in KS1</p> <p>To <b>create</b> my own music/sound composition based on a story.</p> <p>To <b>compose</b> simple sentences and short stories into a text based software, focusing on the keyboard skills.</p> <p>To choose and copy and paste an appropriate image for a piece of text.</p> <p>To retell a story in my own words, planning and typing the text, creating the moving images and sounds that will go with each page of the story.</p> <p>To <b>create</b> pictograms.</p>	<p><b><u>Presenting Skills</u></b> To be able to use a number of functions to <b>create</b> a presentation on PowerPoint, clicker and Purple Mash</p> <p>To add and change slides to a presentation.</p> <p>To add and organise text and pictures to a presentation.</p>	<p><b><u>Presenting Skills</u></b> To be able to use a number of functions to <b>create</b> a presentation on PowerPoint, clicker and Purple Mash</p> <p>To understand how presentation mode works and the functions that can be used.</p>	<p><b><u>Presenting Skills</u></b> To be able to use a number of functions to <b>create</b> a presentation on PowerPoint, clicker and Purple Mash</p> <p>To know how to add a sound file to a slide as an object.</p> <p>To know how to <b>compose</b> your own simple sound clip as an object on a slide</p> <p>To <b>identify</b> and <b>apply</b> add a video to a slide</p> <p>To <b>recognise</b> that sometimes a presentation is run by the viewer without the creator being present and that some effects can enhance the viewer's enjoyment.</p> <p>To <b>create</b> and <b>apply</b> slide transitions.</p>	<p><b><u>Presenting Skills</u></b> To be able to use a number of functions to <b>create</b> a presentation on PowerPoint, clicker and Purple Mash</p> <p>To <b>explore</b> which transitions and animations enhance a viewer's enjoyment and which distract from the information presented.</p> <p>To <b>create</b> and <b>record</b> a commentary to go with a presentation.</p> <p>To <b>explore</b> and <b>compare</b> different web presentation tools such as Prezi and PowerPoint.</p>



## Computing Curriculum

	EYFS- Purple Mash	Year 1 -Purple Mash	Year 2 -Purple Mash	Year 3	Year 4	Year 5	Year 6
<b>Digital Literacy - continued</b>	<p><u>Internet Searches</u></p> <p>Not taught at EYFS</p>	<p><u>Internet Searches</u></p> <p>Not taught at KS1</p>	<p><u>Internet Searches</u></p> <p>Not taught at KS1</p>	<p><u>Internet Searches</u></p> <p>To perform One-word searches on a child friendly search engine.</p> <p>To bookmark a web page by creating a favourite</p> <p>To copy text and images from an internet page</p>	<p><u>Internet Searches</u></p> <p>To perform multiple word searches on Swiggle search engine</p> <p>To <b>analyse</b> the order of results returned.</p> <p>To open multiple web pages without leaving the original search.</p>	<p>To understand that if a presentation is run automatically that all information is needed on the slide.</p> <p><u>Internet Searches</u></p> <p>To perform a Google search using a substitute word. To <b>analyse</b> and understand that some search results are sponsored.</p> <p>To <b>identify</b> physical places with Google Maps and Google Street view.</p>	<p><u>Internet Searches</u></p> <p>To <b>apply</b> the advanced search options in google e.g. using a (-) to exclude words and a minus (-) to exclude words.</p> <p>To <b>identify</b> and <b>list</b> sources of information.</p>





## Computing Curriculum

	EYFS- Purple Mash	Year 1 -Purple Mash	Year 2 -Purple Mash	Year 3	Year 4	Year 5	Year 6
<p><b>Computer Science - General</b></p> <p>Purple Mash EYFS, Yr1 and Yr2</p> <p>Code-it Yr3, 4, 5 and 6</p>		<p>To understand computers are just following instructions that we give them.</p> <p>To know we can 'talk' instructions out loud.</p> <p>To know that debugging is when we look for mistakes.</p> <p>To understand instructions must be sequenced correctly in order for them to work.</p> <p>To give instructions to a friend and follow their instructions to move around.</p> <p>To <b>describe</b> what happens when I press a button on a robot.</p>	<p>To understand that algorithms are instructions for computers.</p> <p>To know we can change the order of instructions to make something react differently.</p> <p>To understand that we can give instructions to technology to make it do something.</p> <p>To know debugging is important to make our work better by correcting mistakes</p>	<p>To understand that bigger problems can be broken down into smaller chunks to make them easy to work with.</p> <p>To know to test programs to ensure they are working.</p> <p>To <b>identify</b> that repetition is where we send and follow any instruction a number of times.</p> <p>To <b>recognise</b> that algorithms can be created to solve simple problems.</p> <p>To understand that instructions must be in order if we want something to work.</p>	<p>To know programs can be more efficient by giving less instructions but which are more precise.</p> <p>To <b>recognise</b> testing throughout is essential to make debugging easier.</p> <p>To understand that sensors can be used to gather information around us to make technology act in a certain way.</p> <p>To <b>recognise</b> the more complicated the algorithm, the more complex the program.</p> <p>To understand that technology and algorithms can be used in a wide range of areas.</p>	<p>To understand that 'repeat' commands, 'if' statements and 'then' statements to make our programs more efficient.</p> <p>To know the use of variables will allow for a more open experience for the user.</p> <p>To <b>identify</b> that as technological experts we need to be creative and think outside the box to create solutions.</p> <p>To <b>apply</b> a range of inputs to control our programs.</p>	<p>To understand that evaluating our programs is essential in order to improve them.</p> <p>To <b>recognise</b> variables are needed in order for many real - world uses of technology to work.</p> <p>To understand it is important to plan and map out algorithms first to ensure the most effective order is created.</p>



## Computing Curriculum

	EYFS- Purple Mash	Year 1 -Purple Mash	Year 2 -Purple Mash	Year 3	Year 4	Year 5	Year 6
<p><b>Computer Science - Skills and Techniques</b></p> <p>Purple Mash EYFS, Yr1 and Yr2</p> <p>Code-it Yr3, 4, 5 and 6</p>		<p>To press buttons on the correct order to make my robot do what I want.</p> <p>To <b>predict</b> what will happen in a short sequence of instructions.</p> <p>To begin to use software and apps to create movement and patterns on screen.</p> <p>To <b>identify</b> and use the word debug when correcting mistakes in computing.</p> <p>To <b>describe</b> what actions I will need to do to make something happen.</p>	<p>To give instructions to a friend using forward, backward and turn, and physically follow their instructions.</p> <p>To share the order that things are to be done in order to make things happen and talk about this as an algorithm.</p> <p>To program a robot or software to do a particular task.</p> <p>To <b>evaluate</b> a friend's program and tell them what will happen.</p> <p>To program software to make objects move.</p> <p>To <b>evaluate</b> programs and spot where it goes wrong to debug it.</p>	<p>To break an open ended problem into smaller parts.</p> <p>To <b>sequence</b> programming commands to achieve a specific outcome.</p> <p>To test and <b>evaluate</b> programs and recognise the need to debug.</p> <p>To <b>apply</b> and use repeated commands.</p> <p>To <b>describe</b> the algorithm needed for a simple task.</p> <p>To <b>find</b> a problem in an algorithm which could result in an unsuccessful program.</p>	<p>To <b>apply</b> logical thinking to solve an open-ended problem by breaking it into smaller parts.</p> <p>To <b>apply</b> efficient procedures to simplify a program.</p> <p>To use a sensor to detect a change which can then select an action.</p> <p>To perform repeated testing of a program whilst building it to ensure it works.</p> <p>To <b>identify</b> a variety of tools to create a program.</p> <p>To <b>recognise</b> an error in a program and debug it.</p> <p>To <b>recognise</b> that an algorithm will help to sequence more complex programs.</p>	<p>To decompose a problem into smaller parts to design an algorithm for a specific outcome and use it to write a program.</p> <p>To refine a procedure using repeated commands to improve a program.</p> <p>To use a variable to increase programming possibilities.</p> <p>To change an input to a program to achieve a different output.</p> <p>To <b>apply</b> IF and THEN commands to select an action.</p> <p>To <b>analyse</b> how a computer model can simulate a physical system.</p>	<p>To deconstruct a problem into smaller steps, <b>recognising</b> similarities to solutions used before.</p> <p>To <b>justify</b> and program each of the steps in my algorithm.</p> <p>To <b>evaluate</b> the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm.</p> <p>To <b>recognise</b> the need to use a variable to achieve a required output.</p> <p>To <b>apply</b> a variable and operators to stop a program.</p> <p>To use different inputs including sensors to control a program.</p> <p>To use logical <b>reasoning</b> to detect and correct errors.</p>



## Computing Curriculum

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<b>Computer Science - Skills and Techniques-continued</b>  Purple Mash EYFS, Yr1 and Yr2   Code-it Yr3, 4, 5 and 6					To <b>apply</b> logical thinking, imagination and creativity to extend a program	To <b>apply</b> logical reasoning to detect and debug mistakes.	