



## Subject Area: Computing

Curriculum drivers: The curriculum is underpinned by the school's **Curriculum Driver**: Communication alongside our school values: Confidence, Compassion, Creativity and Curiosity. The spiritual, moral, social and cultural development of our pupils and their understanding of the core values of our society are woven through the curriculum. The curriculum also consolidates the fundamental British values of democracy, the rule of law, individual liberty, and mutual respect and tolerance of those with different faiths and beliefs.

The knowledge and skills children learn must be co-ordinated and coherent. In order to achieve this in our curriculum, we have identified the key concepts or overarching ideas within each subject. To enable the children to access them, we call these the 'Big Ideas'. In Computing these are: computer science, information technology, digital literacy.

### **EYFS**

Computing Objectives most closely linked to learning within the EYFS Development Matters (2021) come from;

#### Understanding the World

Children develop and understanding of the world through guidance in making sense of their physical world and their community. Children will learn through their own experiences and by listening to a broad selection of stories, non-fiction, rhymes and poems, which will foster their understanding of our culturally, socially, technologically and ecologically diverse world.

#### Personal, Social and Emotional Development

Children should be supported to manage emotions, develop a positive sense of self, set themselves simple goals, have confidence in their own abilities, to persist and wait for what they want and direct attention as necessary. Through adult modelling and guidance, they will learn how to look after their bodies, including healthy eating, and manage personal needs independently. Through supported interaction with other children, they learn how to make good friendships, co-operate and resolve conflicts peaceably.

#### Communication and Language

Children develop their knowledge though asking questions about the world around them and keeping safe online. Children will learn to express their views in a positive way with help from an adult or peers.

### **KS1 National Curriculum Aims (End of Key Stage expectations)**

From the Computing programmes of study: key stages 1 and 2 National curriculum in England;

The national curriculum for computing aims to ensure that all pupils:




- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

#### KS1 Pupils should be taught about:

- 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
- recognise common uses of information technology beyond school
- 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

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KS1 Computing curriculum 'Big Ideas'

<p><b>Computer Science</b></p>  <p>That programs are written to perform tasks.</p>	<p><b>Information Technology</b></p>  <p>That software is used to accomplish goals and hardware enables us to do this.</p>	<p><b>Digital Literacy</b></p>  <p>That the use of technology has both benefits and risks, and should be used responsibly</p>
<p>Taught through...</p> <p>Lego Builders            Maze Explorers            Coding</p>	<p>Taught through...</p> <p>Exploring Purple Mash            Creating pictures            Animated story books</p>	<p>Taught through...</p> <p>Online Safety            Exploring Purple Mash            Effective searching            Technology outside school</p>

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N.C SKILL:		EYFS (Computing link in the EYFS curriculum)	Year 1	Year 2
Computer Science	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Teach children to... - complete a simple program (UTW) (Sum 2) - <b>ask questions to find out more information. E.g. "how does it work?" (Spr 2) (C&amp;L)</b> e.g. Bee-bots, iPads, One Minute maths app <b>COMMUNICATION CURIOSITY</b>	Teach children... <i>Following Instructions</i> - <b>To emphasise the importance of following instructions.</b> <b>COMMUNICATION</b>  <i>Following and Creating Simple Instructions on the Computer.</i> - <b>To follow and create simple instructions on the computer.</b> <b>COMMUNICATION</b> - To consider how the order of instructions affects the result.  <i>Challenges 1 and 2</i> - <b>To understand the functionality of the basic direction keys.</b> <b>COMMUNICATION</b> - To be able to use the direction keys to complete the challenges successfully  <i>Challenges 3 and 4</i> - To understand the functionality of the basic direction keys. - <b>To understand how to create and debug a set of instructions (algorithm).</b> <b>COMMUNICATION CONFIDENCE</b>  <i>Challenges 5 and 6</i> - To use the additional direction keys as part of their algorithm. - To understand how to change and extend the algorithm list. - To create a longer algorithm for an activity.	Teach children...  Algorithms - <b>To understand what an algorithm is.</b> <b>COMMUNICATION</b> - <b>To create a computer program using an algorithm.</b> <b>COMMUNICATION CONFIDENCE</b>  <i>Collision Detection</i> - To create a program using a given design. - To understand the collision detection event.  <i>Using a Timer</i> - <b>To understand that algorithms follow a sequence.</b> <b>CONFIDENCE</b> - To design an algorithm that follows a timed sequence.  <i>Different Object Types</i> - To understand that different objects have different properties. - To understand what different events do in code.  <i>Buttons</i> - To create a program using a given design. - To understand the function of buttons in a program.  <i>'Smelly Code' Debugging</i> - <b>To know what debugging means.</b> <b>CONFIDENCE CURIOSITY</b> - To understand the need to test and debug a program repeatedly. - <b>To debug simple programs.</b> <b>CONFIDENCE</b>
	Create and debug simple programs.			
	Use logical reasoning to predict the behaviour of simple programs. (Taught in year 2)			

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Information Technology	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	<p>Teach children to...</p> <ul style="list-style-type: none"> <li>- <b>use tools competently and safely e.g. Bee-bots, iPads. (PD) COMMUNICATION</b></li> <li>- take a photo on a camera/ipad (UTW) (Aut 2)</li> </ul>	<p>Teach children ...</p> <p><i>Drawing and Creating</i></p> <ul style="list-style-type: none"> <li>- To understand the differences between traditional books and eBooks.</li> <li>- To explore the tools of 2Create a Story's 'My Simple Story' level.</li> <li>- <b>To save the page they have created. CONFIDENCE</b></li> </ul> <p><i>Animation</i></p> <ul style="list-style-type: none"> <li>- To add animation to a picture.</li> <li>- To play the pages created so far.</li> <li>- <b>To save the additional changes and overwrite the file. CONFIDENCE</b></li> </ul> <p><i>Sounds and Move!</i></p> <ul style="list-style-type: none"> <li>- <b>To add a sound effect to a picture. COMMUNICATION</b></li> <li>- To add a voice recording to the picture.</li> <li>- To add created music to the picture.</li> </ul> <p><i>Making a story</i></p> <ul style="list-style-type: none"> <li>- To add a background to the story.</li> <li>- To demonstrate a good understanding of all the tools they have used in 2Create a Story and use these successfully to create their own story.</li> </ul> <p><i>Copy and Paste</i></p> <ul style="list-style-type: none"> <li>- To use the copy and paste feature to create additional pages.</li> <li>- To continue and complete an animated story.</li> <li>- To create a class display board of the storybooks created by the class.</li> </ul>	<p><b>Teach children ...</b></p> <p><i>Introduction and Impressionism</i></p> <ul style="list-style-type: none"> <li>- To explore 2Paint A Picture.</li> <li>- To look at the work of Impressionist artists and recreate them using the Impressionism template.</li> </ul> <p><i>Pointillist Art</i></p> <ul style="list-style-type: none"> <li>- To look at the work of pointillist artists such as Seurat.</li> <li>- <b>To recreate pointillist art using the Pointillism template. COMMUNICATION CREATIVITY</b></li> </ul> <p><i>Piet Mondrian</i></p> <ul style="list-style-type: none"> <li>- To look at the work of Piet Mondrian and recreate it using the Lines template.</li> </ul> <p><i>William Morris and Pattern</i></p> <ul style="list-style-type: none"> <li>- To look at the work of William Morris and recreate it using the Patterns template.</li> </ul> <p><i>Surrealism and eCollage</i></p> <ul style="list-style-type: none"> <li>- To look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.</li> </ul> <p><b>Purple Mash - Christmas card competition</b> (2 Lessons to create a digital Christmas card for a completion.)</p> <ul style="list-style-type: none"> <li>- <b>To create an image, save and retrieve then manipulate (edit). COMMUNICATION CREATIVITY CONFIDENCE</b></li> <li>- To send to a safe shared blog. <b>(Digital Literacy)</b></li> </ul>
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Digital Literacy	<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>Recognise common uses of information technology beyond school.</p>	<p>Teach children to...</p> <ul style="list-style-type: none"> <li>- Name a range of technology used in places such as homes and schools (UTW) (Aut 1)</li> <li>- select and use technology for particular purposes e.g taking photos of objects and places (UTW) (Aut 2)</li> <li>- <b>Talk about the different factors that support their overall health and wellbeing:</b></li> <li>- <b>sensible amounts of 'screen time' (PSED)(Sp2) COMMUNICATION</b></li> <li>- Tell an adult in school if they are worried about something online. (UTW)</li> <li>- I should always ask someone's permission before taking their photograph (PSED)</li> <li>- <b>Be considerate towards others' feelings (PSED) COMPASSIONATE</b></li> <li>- <b>Follow rules, understanding why they are important. (PSED) COMMUNICATION</b></li> <li>- Know appropriate ways of being assertive in their play. E.g online gaming. (PSED)</li> <li>- <b>Recognise how they feel when they are angry, worried, excited (PSED) COMMUNICATION CONFIDENCE</b></li> <li>- <b>Identify reasons why they might feel angry, worried, excited (PSED) COMMUNICATION CONFIDENCE</b></li> <li>- <b>Know a challenge is something they might find a bit hard/tricky. (PSED) COMMUNICATION</b></li> <li>- <b>Negotiate which role they might have in their play. E.g.digital gaming (C&amp;L) COMMUNICATION</b></li> <li>- <b>Ask questions to check I understand what has been said to me. E.g. "What does that mean?" "Why did they do that?" e.g who to ask for help when online(C&amp;L) COMMUNICATION CURIOSITY</b></li> <li>- Express their views and to debate when they disagree with an adult or a friend, using words as well as actions. E.g when using an iPad, screen time, gaming (C&amp;L)</li> </ul>	<p>Teach children...</p> <p><i>Safe Logins</i></p> <ul style="list-style-type: none"> <li>- <b>To log in safely and understand why that is important. CONFIDENCE</b></li> <li>- To create an avatar and to understand what this is and how it is used.</li> <li>- To be able to create a picture and add their own name to it.</li> <li>- To start to understand the idea of 'ownership' of creative work.</li> <li>- <b>To save work to the My Work area and understand that this is private space. (I.T Link) CONFIDENCE</b></li> </ul> <p><i>My Work Area</i></p> <ul style="list-style-type: none"> <li>- To learn how to find saved work in the Online Work area.</li> <li>- To learn about what the teacher has access to in Purple Mash.</li> <li>- To learn how to see messages left by the teacher on their work.</li> <li>- To learn how to search Purple Mash to find resources.</li> </ul> <p><i>Purple Mash Topics</i></p> <ul style="list-style-type: none"> <li>- To become familiar with the types of resources available in the Topics section.</li> <li>- To become more familiar with the icons used in the resources in the Topics section.</li> <li>- To start to add pictures and text to work.</li> </ul> <p><i>Purple Mash Tools</i></p> <ul style="list-style-type: none"> <li>- To explore the Tools area of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New.</li> <li>- To explore the Games area on Purple Mash.</li> <li>- <b>To understand the importance of logging out when they have finished. CONFIDENCE</b></li> </ul> <p><i>What is Technology?</i></p> <ul style="list-style-type: none"> <li>- <b>To find and understand examples of where technology is used in the local community. COMMUNICATION CURIOSITY</b></li> </ul> <p><i>Technology outside school.</i></p> <ul style="list-style-type: none"> <li>- <b>To record examples of technology outside school. CURIOSITY</b></li> </ul>	<p>Teach children...</p> <p><i>Searching and Sharing</i></p> <ul style="list-style-type: none"> <li>- To know how to refine searches using the Search tool.</li> <li>- To know how to share work electronically using the display boards.</li> <li>- To use digital technology to share work on Purple Mash to communicate and connect with others locally.</li> <li>- To have some knowledge and understanding about sharing more globally on the Internet.</li> </ul> <p><i>Email Using 2Respond</i></p> <ul style="list-style-type: none"> <li>- To introduce Email as a communication tool using 2Respond simulations.</li> <li>- To understand how we talk to others when they are not there in front of us.</li> <li>- To open and send simple online communications in the form of email.</li> </ul> <p><i>Digital Footprint</i></p> <ul style="list-style-type: none"> <li>- <b>To understand that information put online leaves a digital footprint or trail. COMMUNICATION</b></li> <li>- <b>To begin to think critically about the information they leave online. CONFIDENCE</b></li> <li>- <b>To identify the steps that can be taken to keep personal data and hardware secure CONFIDENCE COMMUNICATION</b></li> </ul>
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Vocabulary	Receptive	technology, computer, program, camera,	avatar, tool, notification, collate, program algorithm, debug, font, file, code, code block, code design, coder, coding, collision detection, input, scale, command, columns, cells, count tool, lock tool, speak tool, move cell tool, spreadsheet, rows, image toolbox, cursor,	digital footprint, attachment, node, equals tool, lock tool, binary tree, search engine, template,
	Expressive	internet, button, screen, image, paint, photo, voice, click, iPad, touch	work, arrow, undo, rewind, forward, backwards, animation, e-book, sound effect, display, background, object, sound, key, arrow keys, backspace key, delete key, clipart,	when clicked, search, internet, sharing, email, copy and paste, question, avatar, database, digitally, quiz, presentation, audience