

# Our Lady's Bishop Eton Primary School



## COMPUTING HANDBOOK

### INTENT: COMPUTING CURRICULUM

*"If we teach today as we taught yesterday, we rob our children of tomorrow. John Dewey philosopher, psychologist, and educational reformer*

Computing is an integral part of our everyday life and will play an immeasurable part in our children's futures. As computing technology underpins today's modern lifestyle it is essential that all pupils gain the confidence and ability that they need in this subject, to prepare them for the challenge of a rapidly developing and changing technological world.

At Our Lady's Bishop Eton Catholic Primary School we have a clear and simple vision: our children should be **ONLINE-SAFE, ONLINE-INSPIRED** and **ONLINE-CONFIDENT** and our curriculum is planned so as to ensure our children:

- Have the skills they will need in a world of rapidly-changing technology
- Are able to use that technology safely and securely not only in computing but across the whole curriculum.
- Are confident in using code and can understand and apply the fundamental principles and concepts of computer science, including logic, algorithms and data representation, and that when coding, our children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can effectively communicate and can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are able to connect with others responsibly and are competent, confident and creative users of information and communication technology

### IMPLEMENTATION: CITIZEN OF THE WORLD CURRICULUM

Computing is part of our school's Citizen of the World Curriculum along with Art, Design & Technology, Geography, History, ICT, Modern Foreign Languages and Music. All of these subjects are maintained as valued and high profile aspects of our curriculum provision and we recognise their contribution to our children's Spiritual, Moral, Social and Cultural development and to their development as accountable, compassionate, resilient, responsible, resourceful, respectful and passionate stewards of our world, who can:

- Relate to people's place within the wider world, their relationships with others, their histories, their presents and their futures
- Connect the local to the global
- Advocate inter-connected, sustainable and thoughtful living
- Know the value of the arts and culture to society

### IMPLEMENTATION: PLANNING

Planning for Computing as part of this cohesive experience:

- Ensures that the teaching of all of the above subjects follows both the Early Years Foundation Stage and the National Curriculum programmes of study
- Maximizes cross curricular links whilst ensuring the development of subject specific vocabulary, knowledge and skills
- Contributes to curriculum enrichment and makes links to extra-curricular activities where appropriate
- Maximises the potential for our Computing curriculum to contribute to our children's Spiritual, Moral, Social and Cultural development

In order to widen and deepen pupils' essential knowledge, skills, understanding and behaviours, our children continuously return to key concepts and skills in order to gain a deeper and more insightful understanding.

In Reception we work within the EYFS 0-5 Curriculum which has its own distinct identity. It sets developmental stages leading to the Early Learning Goals with high expectations within a play based curriculum. The Reception Curriculum is planned around providing every child with opportunities to learn and develop through planned, purposeful play, exploration and problem solving in order to develop characteristics of effective learning and the skills required for learning as they continue to explore the Citizens of the World Curriculum. All areas are delivered through a balance of adult-led and child-initiated activities. Knowledge, skills and key vocabulary are taught through a mixture of cross-curricular Literacy topics and enhanced continuous provision. A great emphasis is put on experiential learning and learning through discovery, led by the child him/herself where possible. Understanding the world will include exploring, investigating, using computers, discovering the living world, people and nature around them, experiencing other cultures and beliefs and thinking about different life events.

	AUTUMN	SPRING 1	SPRING 2	SUMMER
REC	Digital Literacy including E-Safety	Data	Media	Technology in our lives
Y1				
Y2				
Y3				
Y4				
Y5				
Y6				
PROGRAMMING RUNS THROUGHOUT THE YEAR. UNITS ARE DLIVERED WITH THE SUPPORT OF MGL				

## IMPLEMENTATION: KNOWLEDGE & SKILLS PROGRESSION

Learning about technology starts from birth because it's the way the world works today. Technology is an integral part of all young children's environment and world. They are surrounded by technology just as they are surrounded by language, print and numbers. In the home, technology includes remote controls for television, DVDs and sound systems, toys that have buttons and buzzers, mobile phones, washing machines, microwave ovens and other machines that require programming, and of course, computers and mobile devices such as iPads. Outside the home, children are also immersed in the technological world: they see automatic doors, cash machines, bar code scanners, digital tills and weighing machines, and security cameras. Technology is something children are going to grow up with, learn about and master, and use as a tool to increase their understanding in all areas of learning. Many activities in the early years revolve around children developing an understanding of their environment. Settings encourage children to explore, observe, solve problems, predict, discuss and consider. ICT resources can provide tools for using these skills as well as being examined in their own right, with computers not the only resources. ICT equipment added to role-play reflects the real world, builds on children's experiences and allows them opportunities to understand how, why, when and where different forms of technology are used in everyday life. Early experiences form a foundation upon which KS1 and KS2 can build and the current early learning goals have specific objectives relating to ICT. By the end of the Foundation Stage most children will:

- Show an interest in ICT
- Know how to operate simple equipment
- Complete a simple program on the computer and / or perform simple functions on ICT equipment
- Find out about and identify the uses of everyday technology and use information and communication toys to support their learning

DIGITAL LITERACY INCLUDING E-SAFETY			
YEAR 1	YEAR 2	YEAR 3 & YEAR 4	YEAR 5 & YEAR 6
<p>Understand they need to follow certain rules to remain safe when visiting places online. Begin to understand that if you create something you own it.</p> <p>Learn that many websites ask for information that is private &amp; discuss how to responsibly handle such requests.</p> <p>Explore how email can be used to communicate with real people within their schools, families &amp; communities.</p> <p>Learn that directory sites with alphabetical listings offer one way to find things on the Internet</p>	<p>Stay safe online by choosing websites that are good for them to visit &amp; not inappropriate sites.</p> <p>Explore what cyber-bullying means &amp; what to do when they encounter it.</p> <p>Know that if they put information online it leaves a digital footprint or "trail" &amp; they need to manage it so it's not hurtful.</p> <p>Understand that keyword searching is an effective way to locate online information &amp; how to select keywords to produce the best search results.</p> <p>Discuss criteria for rating informational websites a site.</p> <p>Realise that not all websites are equally good sources of information.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Choose a secure password for age-appropriate websites.</p> <p>Discuss what actions could be taken if they are uncomfortable or upset online e.g. Report Abuse button.</p> <p>Talk about what games they enjoying playing and what good choices are when playing games e.g. content, screen time.</p> <p>Use a class blog to share information and talk about who can see it, and how to communicate safely and respectfully</p> <p>Comment and provide positive feedback on the work of classmates in school or online, or the work of others online.</p>	<p>Agree sensible e-safety rules for the classroom.</p> <p>Discuss their own personal use of the Internet and choices they make Discuss how to protect devices from virus threats.</p> <p>Discuss the importance of keeping an adult informed about what you're doing online, and how to report concerns.</p> <p>Explore using the safe and responsible use of online communication tools e.g. blogs, messaging</p>

## PROGRAMMING

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<p>Physically follow &amp; give each other instructions to move around</p> <p>Explore outcomes when buttons are pressed in sequences on a robot</p> <p>Begin to use software to create movement &amp; patterns on a screen</p> <p>Begin to identify an algorithm to achieve a specific purpose</p> <p>Execute a program on a floor robot to achieve an algorithm</p> <p>Use the word debug to correct any mistakes when programming a floor robot</p> <p>Begin to predict what will happen for a short sequence of instructions in a program</p>	<p>Physically follow and give each other forward, backward &amp; turn (right-angle) instructions</p> <p>Articulate an algorithm to achieve a purpose</p> <p>Plan and enter a sequence of instructions to achieve an algorithm, with a robot specifying distance &amp; turn and drawing a trail</p> <p>Explore outcomes when giving instructions in a simple Logo program</p> <p>Watch a Logo program execute &amp; debug any problems</p> <p>Predict what will happen &amp; test results</p> <p>Talk about similarities &amp; differences between floor robots and logo on screen</p>	<p>Plan &amp; enter a sequence of instructions on a robot specifying distance &amp; turn to achieve specific outcomes, debug the sequence where necessary.</p> <p>Test &amp; improve / debug programmed sequences.</p> <p>Begin to type logo commands to achieve outcomes.</p> <p>Explore outcomes when giving sequences of instructions in Logo software.</p> <p>Use repeat to achieve solutions to tasks.</p> <p>Solve open-ended problems with a floor robot &amp; Logo including creating simple regular polygons, making sounds &amp; planning movements such as a dance.</p> <p>Create an algorithm to tell a joke or a simple story.</p> <p>Sequence pre-written lines of programming into order</p> <p>Talk about algorithms planned by others &amp; identify any problems &amp; the expected outcome.</p>	<p>Create &amp; edit procedures typing logo commands including pen up, pen down &amp; changing the trail of the turtle.</p> <p>Use sensors to 'trigger' an action such as turning the lights on using Probot if it 'goes through a tunnel', or reversing if it touches something.</p> <p>Solve open-ended problems with a floor robot, Logo &amp; other software using efficient procedures to create shapes &amp; letters.</p> <p>Experience a variety of resources to extend knowledge &amp; understanding of programming.</p> <p>Create an algorithm &amp; a program that will use a simple selection command for a game.</p> <p>Begin to correct errors (debug) as they program devices &amp; actions on screen, &amp; identify bugs in programs written by others.</p> <p>Use an algorithm to sequence more complex programming into order</p> <p>Link the use of algorithms to solve problems to work in Maths, Science &amp; DT.</p>	<p>Explore procedures using repeat to achieve solutions to problems with Logo &amp; a floor robot</p> <p>Talk about procedures as parts of a program</p> <p>Refine procedures to improve efficiency</p> <p>Use a variable to replace number of sides in a regular shape</p> <p>Explore instructions to control software or hardware with an input &amp; using if... then... commands</p> <p>Explore a computer model to control a physical system</p> <p>Change inputs on a model to achieve different outputs</p> <p>Refine &amp; extend a program</p> <p>Identify difficulties &amp; articulate a solution for errors in a program</p> <p>Group commands as a procedure to achieve a specific outcome within a program</p> <p>Write down the steps required (an algorithm) to achieve the outcome that is wanted and refer to this when programming.</p>	<p>Record in some detail the steps (the algorithm) that are required to achieve an outcome &amp; refer to this when programming</p> <p>Predict the outputs for the steps in an algorithm</p> <p>Increase confidence in the process to plan, program, test &amp; review a program</p> <p>Write a program which follows an algorithm to solve a problem for a floor robot or other model</p> <p>Write a program which follows an algorithm to achieve a planned outcome for appropriate programming software</p> <p>Control on screen mimics &amp; physical devices using one or more input &amp; predict the outputs</p> <p>Understand how sensors can be used to measure input in order to activate a procedure or sequence &amp; talk about applications in society</p> <p>Create variables to provide a score/trigger an action in a game</p> <p>Link errors in a program to problems in the original algorithm</p>

## DATA HANDLING

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
<p>Take photographs, video and record sound to record learning experiences.</p> <p>Look at how data is representing digitally.</p> <p>Contribute to and interpret a pictogram.</p>	<p>Take and save photographs, video &amp; record sound to capture learning.</p> <p>Use microscopes or other devices to capture and save magnified images.</p> <p>Ask questions and consider how they will collect information.</p>	<p>Find out information from a pre-prepared database, asking straightforward questions.</p> <p>Contribute towards a database.</p> <p>Construct and use a branching database.</p> <p>Record data in a variety of ways.</p> <p>Present data for others.</p>	<p>Plan and create a database to answer questions.</p> <p>Identify different types of data.</p> <p>Ask questions carrying out simple searches on a database.</p> <p>Identify inaccurate data.</p> <p>Present data in appropriate format for an audience.</p>	<p>Collect and record information using spreadsheets and databases</p> <p>Carry out complex searches (e.g. using and/or; <math>\leq</math> / <math>\geq</math>)</p> <p>Solve problems and present answers using data tools.</p> <p>Analyse information and question data.</p> <p>Identify poor quality data.</p>	<p>Use the whole data process – generate, process, interpret, store, and present information – realising the need for accuracy and checking plausibility.</p> <p>Select appropriate data tool.</p> <p>Identify and present results.</p> <p>Interrogate a database, refining searches to provide answers to questions.</p>

	Collect data, generate graphs and charts to find answers. Save & retrieve the data to show to others. Create paper/ object decision trees & explore a branching database. Investigate different types of digital data e.g. online encyclopaedias	Use a data logger to monitor changes and talk about the outcomes seen.	Use a data logger to record and compare individual readings	Select appropriate use of a data logger for an investigation and interpret the findings.	Plan investigations using the outcomes from a data logger to show findings
--	---	--	---	--	--

### MEDIA

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Record their own voices and play back to an audience. Use a video or stills camera to record an activity. Create sounds and simple music phrases using ICT tools. Add text and images to a template document using an image & word bank Use index fingers (left and right hand) on a keyboard to build words & sentences. Know when & how to use the SPACE BAR (thumbs) to make spaces between words	Use an increasing variety of tools and effects in paint programs and talk about their choices. Use templates to make electronic books individually and in pairs. Explore the effects of sound and music in animation and video. Create own documents, adding text and images. Use keyboard to enter text (index fingers left & right hand). Know when and how to use the RETURN/ ENTER key. Use SHIFT & CAPS LOCK to enter capital letters. Use DELETE & BACKSPACE buttons to correct text. Create sentences, SAVE & edit later.	Explore & begin to evaluate the use of multimedia to enhance communication. Create & begin to edit presentation documents & text, experimenting with fonts, size, colour, alignment for emphasis & effect. Use a range of effects in art programs including brush sizes, repeats, reflections Explore the use of video, animation & green screening. Use ICT tools to create musical phrases. Amend text & save changes. Use individual fingers to input text & use SHIFT key to type characters. Amend text by highlighting & using SELECT/ DELETE & COPY/ PASTE. Look at own work & consider how it can be improved for effectiveness.	Explore how multimedia can create atmosphere & appeal to different audiences Be confident in creating & modifying text & presentation documents to achieve a specific purpose. Use art programs & online tools to modify photos for a specific purpose using a range of effects. Explore the use of video, animation, & green screening for a specific audience. Use ICT tools to create music phrases for a specific purpose Use a keyboard effectively, including the use of keyboard shortcuts. Use font sizes & effects such as bullet points appropriately. Know how to use a spell check. Look at their own, and a friend's work & provide feedback that is constructive & specific.	Select an appropriate ICT or online tool to create and share ideas. Explore the effects of multimedia (photos, video, sound) in a presentation or video and show how they can be modified. Develop skills using transitions and hyperlinks to enhance the structure of presentations. Use a wide range of effects in art programs and online tools, discussing the choices made and their effectiveness. Know how to use text and video editing tools in programs to refine their work. Use online tools to create and share presentations and films.	Identify the purpose for selecting an appropriate online tool. Discuss audience, atmosphere and structure of a presentation or video. Collect information and media from a range of sources (considering copyright issues) into a presentation for a specific audience. Use sound, images, text, transitions, hyperlinks and HTML code effectively in presentations. Store presentations and videos online where they can be accessed by themselves and shared with others. Evaluate the effectiveness of their own work and the work of others

### TECHNOLOGY IN OUR LIVES

YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Recognise uses of technology in their homes and in their community. Understand that there are online tools that can help them create and communicate.	Begin to understand there are a variety of sources of information and begin to recognise the differences. Begin to understand what the Internet is and the purposes that it is used for. Understand the different types of content on websites and that some things may not be true or accurate	Save work on the school network, on the Internet and on individual devices Talk about the parts of a computer. Use appropriate tools to collaborate on-line. Use appropriate tools to communicate on-line. Use simple search tools and find appropriate websites. Talk about the owner of information online.	Talk about the school network & the different resources they can access, including the Internet. Frame questions & identify key words to search for information on the Internet. Consider reliability of information & ways it may influence you. Check who the owner is before copying photos, clipart or text.	Identify different parts of computing devices. Identify different parts of the Internet. Choose appropriate tools for communication and collaboration and use them responsibly. Use effective strategies to search with appropriate search engines. Talk about the different elements on web pages. Find out who the information presented on a webpage belongs to.	Describe different services provided by the Internet & how information moves around the Internet. Describe different parts of a computing device & how it connects to the Internet. Connect a computing device to a keyboard, mouse or printer. Identify appropriate forms of online communication for different audiences. Use search engines as part of an effective research strategy. Describe how search results are selected & ranked. Acknowledge who resources belong to that they have found on the internet.

## IMPLEMENTATION: VOCABULARY PROGRESSION

DIGITAL LITERACY INCLUDING E-SAFETY					
Reception	Year 1	Year 2	Year 3 & Year 4	Year 5 & Year 6	
Choices Internet Website	Rules Online Private information Email	Appropriate/inappropriate sites Cyber-bullying Digital footprint Keyword searching	E-safety rules Secure passwords Report abuse button Gaming Blogs	Responsible online communication Informed choices Virus threats Blogs Messaging	

### PROGRAMMING

Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Equipment Buttons Movement	Instructions Buttons Robots Patterns Program	Forward Backward Right-angle turn Algorithm Sequence Debug Predict	Sequence instructions Sequence debugging Test + improve Logo commands Sequence programming	Type + edit logo commands Sensors Open-ended problems Bugs in programs Complex programming	Explore procedures Refine procedures Variable Hardware + software control Change inputs Different outputs Articulate solutions Commands	Predicting outputs Plan, program, test & review a program Program writing Control mimics + devices Sensors Measure input Create variables

						Link errors
DATA HANDLING						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Collect Set of photos Count Organise	Photographs Video Sound Data Pictogram Digitally	Capturing moments Magnified images Questions Data collection Graphs Charts Save Retrieve	Questioning Database Construct Contribute Recording data Data logger Present data	Database creation Database searches Inaccurate data	Spreadsheets Complex searches (and/or: </>) Problem solving Present answers Analyse information Question data Interpret	Generate Process Interpret Store Present information Plausibility Appropriate data tool Interrogate Investigations
MEDIA						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Screen Mouse Images Keyboard Paint	Videos Camera stills Sounds Image bank Word bank Space bar	Paint effects Templates Animation Documents Index finger typing Enter/return Caps lock Backspace	Multimedia Presentations Alignment Brush size Repeats Reflections Green screening Amend Copy Paste	Creating + modifying Specific purpose Photo modifying Keyboard shortcuts Bullet points Spell check Constructive feedback	Online sharing Multimedia effects Multimedia modification Transitions Hyperlinks Editing tools Refining Online sharing	Appropriate online tools Audience Atmosphere Structure Copyright Information collection HTML code Storing
TECHNOLOGY IN OUR LIVES						
Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Technology Share Create Internet	Purpose Online tools Communicate	Information sources Communication Purposes Website content	School network Devices Computer parts Collaborate Appropriate online communication Search tools Appropriate websites Owner	Different networks Information collection Reliability Owners	Computing devices Internet parts Collaboration Responsibility Searching strategies Webpages	Information movement Connecting devices Different audiences Research strategies Search result rankings Acknowledge resources

## IMPLEMENTATION: SPIRITUAL MORAL SOCIAL AND CULTURAL DEVELOPMENT

Our computing curriculum contributes to the spiritual, moral, social and cultural development of our children.

Spiritual Development	Moral Development	Social Development	Cultural Development
<ul style="list-style-type: none"> <li>Respect for self and others</li> <li>Increasing ability to reflect</li> <li>Empathy, Concern &amp; Compassion</li> <li>Expressive &amp; creative development</li> <li>Awareness and understanding of their own and others beliefs</li> <li>Ability to think in terms of the whole</li> <li>Readiness to challenge all that would constrain the human spirit: poverty of aspiration, lack of self-confidence and belief, indifference, force, aggression, injustice, self-interest, sexism and racism</li> <li>Courage and persistence in the defence of their aims, values, principles and beliefs</li> <li>Appreciation of the intangible</li> <li>Understanding of feelings and emotions and their likely impact</li> <li>Respect for insight as well as knowledge and reason</li> </ul>	<ul style="list-style-type: none"> <li>Ability to distinguish right from wrong</li> <li>Confidence to act consistently in accordance with their own principles</li> <li>Respect for others' needs, interests and feelings as well as their own</li> <li>Desire to explore their own and others' views</li> <li>A commitment to personal values in areas which are considered right by some and wrong by others</li> <li>Ability to make responsible and reasoned judgements on moral dilemmas</li> <li>Ability to think through consequences of their own and others' actions</li> <li>Considerate style of life</li> <li>Understanding of the need to review and reassess their values, codes and principles in the light of experience</li> </ul>	<ul style="list-style-type: none"> <li>Works successfully as a member of a group or team</li> <li>Appreciates the right and responsibilities of individuals within the wider social setting</li> <li>Takes advice offered by those in authority or counselling roles</li> <li>Participates in activities relevant to the community</li> <li>Exercises responsibility</li> <li>Resolves conflict</li> <li>Adjusts to a range of social contexts by appropriate and sensitive behaviour</li> <li>Challenges, when necessary and in appropriate ways, the values of a group or wider community</li> <li>Understands how societies function and are organised in structures such as the family, the school and local and wider communities</li> <li>Shares values and opinions with others and works towards consensus</li> <li>Reflects on their own contribution to society</li> <li>Relates well to other peoples' social skills and personal qualities</li> <li>Understands the notion of interdependence in an increasingly complex society</li> </ul>	<ul style="list-style-type: none"> <li>Appreciation of the diversity and interdependence of cultures</li> <li>Ability to appreciate cultural diversity and accord dignity and respect to other people's values and beliefs, thereby challenging racism and valuing race equality</li> <li>Ability to recognise and understand their own cultural assumptions and values</li> <li>Understanding of the influences which have shaped their own cultural heritage</li> <li>Understanding of the dynamic, evolutionary nature of cultures</li> <li>Sense of personal enrichment through encounter with cultural media and tradition from a range of cultures</li> <li>Regard for the rights of human achievement in all cultures and societies</li> <li>Openness to new ideas and a willingness to modify cultural values in the light of experience</li> </ul>

## IMPLEMENTATION: ASSESSMENT

We have high expectations of our learners and pupils are assessed regularly during lessons and following a unit of work. There is an expectation that a significant percentage of our children will exceed the end of Key Stage expectations in Computing.

RECEPTION				
DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I can ask an adult when I want to use the Internet.</li> <li>I can tell an adult when something worrying or unexpected happens while I am using the Internet.</li> <li>I can be kind to my friends.</li> <li>I can talk about the amount of time I spend using a computer / tablet / game device. I am careful with technology devices.</li> </ul>	<ul style="list-style-type: none"> <li>I can make a floor robot move.</li> <li>I can use simple software to make something happen.</li> <li>I can make choices about the buttons and icons I press, touch or click on.</li> </ul>	<p>I can tell you about different kinds of information such as pictures, video, text and sound.</p>	<ul style="list-style-type: none"> <li>I can move objects on a screen.</li> <li>I can create shapes and text on a screen.</li> <li>I can use technology to show my learning.</li> </ul>	<ul style="list-style-type: none"> <li>I can tell you about technology that is used at home and in school.</li> <li>I can operate simple equipment.</li> <li>I can use a safe part of the Internet to play and learn.</li> </ul>
YEAR 1				
DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I can keep my password private.</li> <li>I can tell you what personal information is.</li> <li>I can tell an adult when I see something unexpected or worrying online.</li> <li>I can talk about why it's important to be kind and polite.</li> <li>I can recognise an age appropriate website.</li> <li>I can agree and follow sensible e-Safety rules.</li> </ul>	<ul style="list-style-type: none"> <li>I can give instructions to my friend and follow their instructions to move around.</li> <li>I can describe what happens when I press buttons on a robot.</li> <li>I can press the buttons in the correct order to make my robot do what I want.</li> <li>I can describe what actions I will need to do to make something happen and begin to use the word algorithm.</li> <li>I can begin to predict what will happen for a short sequence of instructions.</li> <li>I can begin to use software/apps to create movement and patterns on a screen.</li> <li>I can use the word debug when I correct mistakes when I program.</li> </ul>	<ul style="list-style-type: none"> <li>I can talk about the different ways in which information can be shown.</li> <li>I can use technology to collect information, including photos, video and sound.</li> <li>I can sort different kinds of information and present it to others.</li> <li>I can add information to a pictograph and talk to you about what I have found out.</li> </ul>	<ul style="list-style-type: none"> <li>I can be creative with different technology tools.</li> <li>I can use technology to create and present my ideas.</li> <li>I can use the keyboard or a word bank on my device to enter text.</li> <li>I can save information in a special place and retrieve it again.</li> </ul>	<ul style="list-style-type: none"> <li>I can recognise the ways we use technology in our classroom.</li> <li>I can recognise ways that technology is used in my home and community.</li> <li>I can use links to websites to find information.</li> <li>I can begin to identify some of the benefits of using technology.</li> </ul>
YEAR 2				
DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I can explain why I need to keep my password and personal information private.</li> <li>I can describe the things that happen online that I must tell an adult about.</li> <li>I can talk about why I should go online for a short amount of time.</li> <li>I can talk about why it is important to be kind and polite online and in real life.</li> <li>I know that not everyone is who they say they are on the Internet.</li> </ul>	<ul style="list-style-type: none"> <li>I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions.</li> <li>I can tell you the order I need to do things to make something happen and talk about this as an algorithm.</li> <li>I can program a robot or software to do a particular task.</li> <li>I can look at my friend's program and tell you what will happen.</li> <li>I can use programming software to make objects move.</li> <li>I can watch a program execute and spot where it goes wrong so that I can debug it.</li> </ul>	<ul style="list-style-type: none"> <li>I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder.</li> <li>I can make and save a chart or graph using the data I collect.</li> <li>I can talk about the data that is shown in my chart or graph.</li> <li>I am starting to understand a branching database.</li> <li>I can tell you what kind of information I could use to help me investigate a question.</li> </ul>	<ul style="list-style-type: none"> <li>I can use technology to organise and present my ideas in different ways.</li> <li>I can use the keyboard on my device to add, delete and space text for others to read.</li> <li>I can tell you about an online tool that will help me to share my ideas with other people.</li> <li>I can save and open files on the device I use.</li> </ul>	<ul style="list-style-type: none"> <li>I can tell you why I use technology in the classroom.</li> <li>I can tell you why I use technology in my home and community.</li> <li>I am starting to understand that other people have created the information I use.</li> <li>I can identify benefits of using technology including finding information, creating and communicating.</li> <li>I can talk about the differences between the Internet and things in the physical world.</li> </ul>
YEAR 3				
DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I can talk about what makes a secure password and why they are important.</li> </ul>	<ul style="list-style-type: none"> <li>I can break an open-ended problem up into smaller parts.</li> <li>I can put programming commands into a sequence</li> </ul>	<ul style="list-style-type: none"> <li>I can talk about the different ways data can be organised.</li> <li>I can search a ready-made database to answer questions.</li> </ul>	<ul style="list-style-type: none"> <li>I can create different effects with different technology tools.</li> </ul>	<ul style="list-style-type: none"> <li>I can save and retrieve work on the Internet, the school network or my own device.</li> <li>I can talk about the parts of a computer.</li> </ul>

<ul style="list-style-type: none"> <li>I can protect my personal information when I do different things online.</li> <li>I can use the safety features of websites as well as reporting concerns to an adult.</li> <li>I can recognise websites and games appropriate for my age.</li> <li>I can make good choices about how long I spend online.</li> <li>I ask an adult before downloading files and games from the Internet.</li> <li>I can post positive comments online.</li> </ul>	<p>to achieve a specific outcome.</p> <ul style="list-style-type: none"> <li>I keep testing my program and can recognise when I need to debug it.</li> <li>I can use repeat commands.</li> <li>I can describe the algorithm I will need for a simple task.</li> <li>I can detect a problem in an algorithm which could result in unsuccessful programming.</li> </ul>	<ul style="list-style-type: none"> <li>I can collect data help me answer a question.</li> <li>I can add to a database.</li> <li>I can make a branching database.</li> </ul> <p>I can use a data logger to monitor changes and can talk about the information collected.</p>	<ul style="list-style-type: none"> <li>I can combine a mixture of text, graphics and sound to share my ideas and learning.</li> <li>I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker.</li> <li>I can evaluate my work and improve its effectiveness.</li> </ul> <p>I can use an appropriate tool to share my work online.</p>	<ul style="list-style-type: none"> <li>I can tell you ways to communicate with others online.</li> <li>I can describe the World Wide Web as the part of the Internet that contains websites.</li> <li>I can use search tools to find and use an appropriate website.</li> </ul> <p>I think about whether I can use images that I find online in my own work.</p>
--	---	---	---	--

**YEAR 4**

DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I choose a secure password when I am using a website.</li> <li>I can talk about the ways I can protect myself and my friends from harm online.</li> <li>I use the safety features of websites as well as reporting concerns to an adult.</li> <li>I know that anything I post online can be seen by others.</li> <li>I choose websites and games that are appropriate for my age.</li> <li>I can help my friends make good choices about the time they spend online.</li> <li>I can talk about why I need to ask a trusted adult before downloading files and games from the Internet.</li> <li>I comment positively and respectfully online.</li> </ul>	<ul style="list-style-type: none"> <li>I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts.</li> <li>I can use an efficient procedure to simplify a program.</li> <li>I can use a sensor to detect a change which can select an action within my program.</li> <li>I know that I need to keep testing my program while I am putting it together.</li> <li>I can use a variety of tools to create a program.</li> <li>I can recognise an error in a program and debug it.</li> <li>I recognise that an algorithm will help me to sequence more complex programs.</li> <li>I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.</li> </ul>	<ul style="list-style-type: none"> <li>I can organise data in different ways.</li> <li>I can collect data and identify where it could be inaccurate.</li> <li>I can plan, create and search a database to answer questions.</li> <li>I can choose the best way to present data to my friends.</li> <li>I can use a data logger to record and share my readings with my friends.</li> </ul>	<ul style="list-style-type: none"> <li>I can use photos, video and sound to create an atmosphere when presenting to different audiences.</li> <li>I am confident to explore new media to extend what I can achieve.</li> <li>I can change the appearance of text to increase its effectiveness.</li> <li>I can create, modify and present documents for a particular purpose.</li> <li>I can use a keyboard confidently and make use of a spellchecker to write and review my work.</li> <li>I can use an appropriate tool to share my work and collaborate online.</li> </ul> <p>I can give constructive feedback to my friends to help them improve their work and refine my own work.</p>	<ul style="list-style-type: none"> <li>I can tell you whether a resource I am using is on the Internet, the school network or my own device.</li> <li>I can identify key words to use when searching safely on the World Wide Web.</li> <li>I think about the reliability of information I read on the World Wide Web.</li> <li>I can tell you how to check who owns photos, text and clipart.</li> <li>I can create a hyperlink to a resource on the World Wide Web.</li> </ul>

**YEAR 5**

DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I protect my password and other personal information.</li> <li>I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult.</li> <li>I know that anything I post online can be seen, used and may affect others.</li> <li>I can talk about the dangers of spending too long online or playing a game.</li> <li>I can explain the importance of communicating kindly and respectfully.</li> <li>I can discuss the importance of choosing an age-appropriate website or game.</li> <li>I can explain why I need to protect my computer or device from harm.</li> <li>I know which resources on the Internet I can download and use.</li> </ul>	<ul style="list-style-type: none"> <li>I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program.</li> <li>I can refine a procedure using repeat commands to improve a program.</li> <li>I can use a variable to increase programming possibilities.</li> <li>I can change an input to a program to achieve a different output.</li> <li>I can use 'if' and 'then' commands to select an action.</li> <li>I can talk about how a computer model can provide information about a physical system.</li> <li>I can use logical reasoning to detect and debug mistakes in a program.</li> <li>I use logical thinking, imagination and creativity to extend a program.</li> </ul>	<ul style="list-style-type: none"> <li>I can use a spreadsheet and database to collect and record data.</li> <li>I can choose an appropriate tool to help me collect data..</li> <li>I can present data in an appropriate way.</li> <li>I can search a database using different operators to refine my search.</li> <li>I can talk about mistakes in data and suggest how it could be checked.</li> </ul>	<ul style="list-style-type: none"> <li>I can use text, photo, sound and video editing tools to refine my work.</li> <li>I can use the skills I have already developed to create content using unfamiliar technology.</li> <li>I can select, use and combine the appropriate technology tools to create effects that will have an impact on others.</li> <li>I can select an appropriate online or offline tool to create and share ideas.</li> <li>I can review and improve my own work and support others to improve their work.</li> </ul>	<ul style="list-style-type: none"> <li>I can describe different parts of the Internet.</li> <li>I can use different online communication tools for different purposes.</li> <li>I can use a search engine to find appropriate information and check its reliability.</li> <li>I can recognise and evaluate different types of information I find on the World Wide Web.</li> <li>I can describe the different parts of a webpage.</li> <li>I can find out who the information on a webpage belongs to.</li> </ul>

YEAR 6				
DIGITAL LITERACY & E-SAFETY	PROGRAMMING	HANDLING DATA	MULTIMEDIA	TECHNOLOGY IN OUR LIVES
<ul style="list-style-type: none"> <li>I protect my password and other personal information.</li> <li>I can explain the consequences of sharing too much about myself online.</li> <li>I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.</li> <li>I can explain the consequences of spending too much time online or on a game.</li> <li>I can explain the consequences to myself and others of not communicating kindly and respectfully.</li> <li>I protect my computer or device from harm on the Internet.</li> </ul>	<ul style="list-style-type: none"> <li>I can deconstruct a problem into smaller steps, recognising similarities to solutions used before.</li> <li>I can explain and program each of the steps in my algorithm.</li> <li>I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm.</li> <li>I can recognise when I need to use a variable to achieve a required output.</li> <li>I can use a variable and operators to stop a program.</li> <li>I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen.</li> <li>I can use logical reasoning to detect and correct errors in a algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>I can plan the process needed to investigate the world around me.</li> <li>I can select the most effective tool to collect data for my investigation.</li> <li>I can check the data I collect for accuracy and plausibility.</li> <li>I can interpret the data I collect.</li> <li>I can present the data I collect in an appropriate way.</li> <li>I use the skills I have developed to interrogate a database.</li> </ul>	<ul style="list-style-type: none"> <li>I can talk about audience, atmosphere and structure when planning a particular outcome.</li> <li>I can confidently identify the potential of unfamiliar technology to increase my creativity.</li> <li>I can combine a range of media, recognising the contribution of each to achieve a particular outcome.</li> <li>I can tell you why I select a particular online tool for a specific purpose.</li> <li>I can be digitally discerning when evaluating the effectiveness of my own work and the work of others.</li> </ul>	<ul style="list-style-type: none"> <li>I can tell you the Internet services I need to use for different purposes.</li> <li>I can describe how information is transported on the Internet.</li> <li>I can select an appropriate tool to communicate and collaborate online.</li> <li>I can talk about the way search results are selected and ranked.</li> <li>I can check the reliability of a website.</li> <li>I can tell you about copyright and acknowledge the sources of information that I find online.</li> </ul>

### IMPLEMENTATION: HEALTH & SAFETY AND SAFEGUARDING

Activities are Risk Assessed as appropriate. Evolve and Risk Assessments are completed for all off site activities. Appropriate staff supervision ratios are ensured. Approved venues and transport are used.

### IMPLEMENTATION: STAFF DEVELOPMENT

Our school maintains the culture, training, partnerships and levels of resources necessary to ensure the continuous development of all aspects of our Citizen of the World Art curriculum

### IMPACT

Our children:

- Have the skills they will need in a world of rapidly-changing technology
- Are able to use that technology safely and securely not only in computing but across the whole curriculum.
- Are confident in using code and can understand and apply the fundamental principles and concepts of computer science, including logic, algorithms and data representation, and that when coding, our children can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can effectively communicate and can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are able to connect with others responsibly and are competent, confident and creative users of information and communication technology

