

Curriculum Skills and Progression Map

Computing: 2025 to 2026





The Computing Curriculum and Christian Distinctiveness at Horsford CofE VA Primary School

At Horsford C of E Primary School, our values **compassion**, **courage** and **responsibility** are promoted and heavily featured in our Computing curriculum. Pupils are living within an increasingly technological world and aim to develop confidence and knowledge in this area and to share their Christian values through different elements of technology. In school we strive to take responsibility for our actions and learning attitudes using technology. We reflect on the story 'The wise and foolish man' and take responsibility by not always taking the easy option and try something that might challenge us but will broadly benefit ourselves and people around us. Online safety continues to be at the forefront of learning and we have a huge focus on online behaviour and how to have a positive online presence. We take courage from Esther who spoke out when she saw her people being treated unfairly (Esther 2-9) to help us report any online incidents or concerns children may have.

'Spirituality is the bitter-sweet yearning for beauty, truth, love and wonder beyond ourselves. It is a longing we pursue together and a treasure we glimpse in ourselves and one another and seek beyond us into eternity. It is life in all its fullness.'





The Computing Curriculum – National Curriculum Purpose & Aims

Purpose of Study:

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims:

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.



The Computing Curriculum and Provision for Pupils with SEND

At Horsford C of E VA Primary school, we believe all pupils should have the opportunity to learn to the best of their capabilities through a broad and balanced, inclusive curriculum. For our pupils with a Special Educational Need, we scaffold their learning to provide them with the strongest opportunities for success in our school. We believe firmly in the SEND Code of Practice's statement that 'every teacher is a teacher of SEN' and that our pupils with SEN should be provided with the same opportunities as their peers in our school. This means that, with their learning being personalised to meet their areas of need, they feel included in the classroom and make progress year on year. Reasonable adjustments are made in all lessons to enable this.

The Computing curriculum can be adapted to meet the needs of children with SEND in the following ways.

Word Banks for pre-learning and to support during topics and themes	Visual Timetables – class and individual
Breaking down lessons into short, manageable chunks	Fidget toys available
Mixed ability groups – using peers as support and role models	Word lists of key vocabulary for pre-learning and as prompts
Adult assistance nearby	Trying a 1:1 adult/adult nearby
Using another student as a reader/support	Checking seating position – sight problems – near the back for sensory needs
Knowledge map/Mind Maps	A safe/quiet space in or near the classroom
Recording devices to record their answers/sentences – talking tins, iPad	Extra time for the trickier tasks
Printing work larger and in smaller chunks	Use of a scribe
Breaks	Simplified work
Now/Next	

When planning for Computing class teachers should adapt their lessons where necessary using ideas taken from this list, however it is important to remember this list is not exhaustive and other adaptations may be needed for children with specific needs.



The Computing Curriculum – ‘The Golden Threads’

Computer Science	Information Technology	Digital Literacy
<p>How computers and computer systems work & how they are designed and programmed.</p>	<p>The purposeful use of existing programs to develop products and solutions.</p>	<p>The skills, knowledge and understanding needed in order to participate fully and safely in an increasingly digital world.</p>
<p><i>Foundations...</i></p>	<p><i>Applications...</i></p>	<p><i>Implications...</i></p>
<p>A typical school computer network</p> <p>What is the job of the firewall and the modem/router?</p> <p>Mapping a network</p>	<p>Text ABCDEF GHIJKL MNOPQR STUVWX YZ 1234 567890</p> <p>Images </p> <p>Audio </p> <p>Video </p> <p>3D Design </p> <p>Data </p> <p>Internet </p>	
<p><i>The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.</i></p>	<p><i>Pupils are equipped to use information technology to create programs, systems and a range of content.</i></p>	<p><i>Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.</i></p>

COMPUTING AGE RELATED STATUTORY COVERAGE		
Computer Science	Information Technology	Digital Literacy
EYFS	KEY STAGE ONE LEARNING	KEY STAGE TWO LEARNING
No statutory EYFS guidance and ELG for this area	<p>A. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>B. Create and debug simple programs.</p> <p>C. Use logical reasoning to predict the behaviour of simple programs.</p>	<p>A. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>B. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>C. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>
	<p>D. Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>	<p>D. Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>
	<p>E. Recognise common uses of information technology beyond school.</p> <p>F. 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>E. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p> <p>F. 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.</p> <p>G. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>
General Deeper Learning Ideas		
Using the Blooms Taxonomy Questions (See Appendix C) pyramid choose one of the words to form a deeper learning question for the children. These will vary all depending on the child, lesson outcomes and the skills taught within the lesson but as a starting point use the question words and question stems to support with this.		
<ul style="list-style-type: none"> • Odd one out • Sometimes, always, never • True or False 	<ul style="list-style-type: none"> • Convince me (Convince me that I need to be safe on the internet) • Prove it- Prove that algorithms need to be put in the correct order. • What's the same/difference? 	
<i>See individual year groups below for specific age-related deeper learning ideas.</i>		
Further Information		
<p>See Appendix A for long term plan for each single year groups.</p> <p>See Appendix B for Assembly plan overview.</p> <p>See Appendix C for Blooms Taxonomy Question Starters.</p>		

Computing Skills Map – EYFS Curriculum					
Inquiry					
Specific Computing skills are taught as a whole-class session or sessions during each half-term (see below). Alongside this, weekly enhanced provision is planned to ensure the children have the opportunity to explore computing skills independently throughout the year, and these will incorporate skills from across the year.					
Vocabulary					
Information Technology			Digital Literacy		
create		game	afraid	happy	sad
			safely	technology	worried
Coverage & Skills					
Information Technology			Digital Literacy		
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks
E-Safety 1. Understand how to stay safe when using technology. 2. Identify someone who can help if they find something they are unsure or worried about. 3. Understand some things are private.	Digital Technology to support Early Mathematics & Literacy 1. Begin to use technology to support their learning. 2. Begin to enjoy simple computer games.	E-Safety 1. Understand how to stay safe when using technology. 2. Identify someone who can help if they find something they are unsure or worried about. 3. Understand some things are private.		E-Safety 1. Understand how to stay safe when using technology. 2. Identify someone who can help if they find something they are unsure or worried about. 3. Understand some things are private.	
Digital Art & Design 1. Make marks using technology. 2. Begin to create their own content on available software.					
Early Years – Greater Depth					
<ul style="list-style-type: none"> • Can they follow, modify and evaluate a set of instructions? • Can they save or capture and retrieve their original content? 					

Computing Skills Map – Year 1									
Vocabulary									
Computer Science		Information Technology					Digital Literacy		
Algorithm Debug Execute	Predict Sequence	3D Arrange Custom colour Cursor	Delete Drag Fill Flip	Grid Home Row Left Button Mouse	Pixels Rotate Scale Scroll wheel	Text Trackpad Undo Zoom	E-Safety/Online Safety Log on/off Password Permission	Personal information Report Respect	Sharing SMART Trust Username
Coverage & Skills									
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks				
E-Safety (1-2 hours) <i>NC, KS1: F</i> 1. Understand what the internet is and how people use it. 2. Understand what personal information is and why we keep personal information private. 3. Why do websites want personal information. 4. Identify when and where to go for help when concerned. 5. Understand what 'SMART' means.	EYFS Digital Art & Design (2 hours) <i>NC, KS1: D</i> 1. Use digital software to explore colours and re-create a style. 2. Use digital software to move objects on the screen for a purpose. 3. Use digital software to select objects and use tools to create 2D and 3D designs. 4. Use digital software to experiment with the fill bucket tool to colour a picture.	E-Safety (1 hour) <i>NC, KS1: F</i> 1. Understand what the internet is and how people use it. 2. Understand what personal information is and why we keep personal information private. 3. Why do websites want personal information. 4. Identify when and where to go for help when concerned. 5. Understand what 'SMART' means.	Comic Creation (1-2 hours) <i>NC, KS1: D</i> 1. Add, resize and organise colour or picture backgrounds. 2. Add, resize, organise characters/object to different panels. 3. Add narration using text and direct speech using speech bubbles. 4. Save comic with name and title.	E-Safety (1 hour) <i>NC, KS1: F</i> 1. Understand what the internet is and how people use it. 2. Understand what personal information is and why we keep personal information private. 3. Why do websites want personal information. 4. Identify when and where to go for help when concerned.	Introduce Programming (5-7 hours) <i>NC, KS1: A, B & C</i> 1. Place instructions into the correct order (sequence) to make something work. 2. Use direction arrows to move an on-screen object (character/sprite) to achieve an objective. 3. Predict a route and sequence direction commands (algorithm) to achieve an objective. Correct the errors if necessary (debug). 4. Predict a route and sequence distance commands to program an on-screen object to achieve an objective. 5. Predict and sequence movement and pen commands to program the drawing of different 2D shapes. 6. Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective.				
Mouse & Keyboard Skills (4-6 hours) <i>NC, KS1: D</i> 1. Move the mouse or trackpad and left click to select an object. 2. Drag and drop with mouse or trackpad to move objects around the screen. 3. Use double click or double tap. 4. Find letters or numbers on keyboard. 5. Begin touch typing with home row keys.	Digital Art (1-2 hours) <i>NC, KS1: D</i> 1. Change the colour of individual pixels to accurately re-create basic artwork. 2. Make changes where required. 3. Change the colour of individual pixels to accurately re-create detailed artwork. 4. Use zoom controls to help fill small shapes. Early 3D Design (1-2 hours) <i>NC, KS1: D</i> 1. Change the colour and pattern of elements. 2. Position and rotate objects on a design. 3. Position objects in relation to each other. 4. Use custom colours to make digital art your own. 5. Resize, rotate, flip and arrange objects behind/in front of each other.	Text & Images (3-4 hours) <i>NC, KS1: D</i> 1. Change the background colour of a page. 2. Add, resize and position images (pictures) on a page. 3. Type and position text on a page, if possible, using capital letters and punctuation. 4. Label pictures with text. 5. Use word-banks for writing sentences about pictures.	Music Creation (2 hours) <i>NC, KS1: D</i> 1. Understand the advantages and disadvantages of making music on a computer. 2. Understand that different instruments make their own sound and that instruments can be divided into groups. 3. Create a rhythm using a pattern of beats. 4. Create digital sounds using patterns and shapes. 5. Create a simple melody using patterns and adjust tempo.	EYFS Early Programming (3 hours) <i>NC, KS1: A, B & C</i> 1. Identify technology around them. 2. Sequence things in the correct order. 3. Follow instructions. 4. Plan instructions. 5. Test & improve instructions.					
Year 1 – Greater Depth									
<ul style="list-style-type: none"> • Can they use and apply logical thinking to solve a problem involving programming? (e.g. programming a Beebot with a 'missing' direction button) • Can they use digital technology to organise and edit content? (e.g. text in an app, editing images) 									

Computing Skills Map – Year 2									
Vocabulary									
Computer Science			Information Technology			Digital Literacy			
Algorithm Debug Execute	Inputs Loops Outputs	Predict Selection Sequence	Bar Chart Clone Delete Fill Frame Frame rate	GIF Images New page Onion skin Pictogram Pie Chart	Pixels PNG Record Share Table Text	Analogue Bullet points Digital Internet browser Keywords Microprocessor	Permission Personal information Report Respect Sharing Trust	Video transcript Webpage	
Coverage & Skills									
Computer Science		Information Technology			Digital Literacy				
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks	Summer 2 – 7 Weeks	
E-Safety (1-2 hours) <i>NC, KS1: F</i> 1. Understand what the dangers are of sharing photos online. 2. Understand that people online are not always who they say they are. 3. Know not to always trust information online. 4. Use the Internet responsibly. 5. Be respectful.	Recognise Uses of IT (1-2 hours) <i>NC, KS1: E</i> 1. Understand what makes a computer a computer. 2. Understand computers store and follow instructions. 3. Spot digital technology in school. 4. Understand how different technology helps us.	Develop Programming (4-5 hours) <i>KS1, NC: A, B & C</i> 1. Create and debug simple programs by selecting code blocks, placing them in the correct sequence and executing a program. 2. Use logical reasoning to predict the behaviour of simple programs. 3. Simplify a program by using a loop.	E-Safety (1-2 hours) <i>NC, KS1: F</i> 1. Understand what the dangers are of sharing photos online. 2. Understand that people online are not always who they say they are. 3. Know not to always trust information online. 4. Use the Internet responsibly. 5. Be respectful.	Programming with Scratch Jr (3-4 hours) <i>NC, KS1: A, B & C</i> 1. Program movements. 2. Program outputs for audio or text. 3. Find errors in a program. 4. Program inputs. 5. Program selection/conditions (if one sprite hits another).	Introduce Data Handling (2-3 hours) <i>NC, KS1: D</i> 1. Understand what data is and collect it as a tally. 2. Use software to label a pictogram and add data to each column. 3. Edit a table with correct titles and numbers. 4. Use software to create a bar chart/pie chart/line chart suitable for the data. 5. Interpret a pictogram/bar chart/line chart.	Internet Research (1-2 hours) <i>NC, KS1: E & F</i> 1. Understand how a webpage displays information in different ways; text, images, videos and interactive elements. 2. Use a webpage to answer questions.	eBook Creation (3-4 hours) <i>NC, KS1: D</i> 1. Add a book cover with title, author, colour and image. 2. Add multiple pages based on a theme. 3. Add text on different pages. 4. Add images on different pages to match the theme/text. 5. Add voice recordings to match the text and theme.	Digital Art (3-4 hours) <i>NC, KS1: D</i> 1. Use lines and fill tools to make interesting patterns. 2. Add a variety of shapes (outlines and fill) and label them with text. 3. Re-create graphics using pixels with different colours.	Introduction to Animation (2-4 hours) <i>NC, KS1: D</i> 1. Add a background and objects to a frame (including text) 2. Copy/clone a frame and move objects to create an animation, including flipping objects. 3. Create an animation with multiple objects moving simultaneously. 4. Create screen-recording animation (<i>optional, requires iPad</i>). 5. Create stop-motion animation with photos (<i>optional, requires iPad</i>). 6. Create animated drawings of characters by cropping photos and adjusting points of movement.
Year 2 – Greater Depth									
<ul style="list-style-type: none"> • Can they appreciate that some algorithms are more efficient than others and use methods of efficiency to test these? (e.g. most efficient method to enable a sprite to move left and right along the x axis or up and down along the y axis) • Can they use digital technology to create, organise and edit a range of content for a specific purpose using an appropriate app? • Can they consider how text is presented and formatted and adapt this to suit the purpose of a document? 									

Computing Skills Map – Year 3								
Vocabulary								
Computer Science		Information Technology				Digital Literacy		
Debug Inputs Kodu Loops or repetition Operators Selection Sensing	Sequence Sprite Stage Terrain Tiles	3D Arpeggio Arrange Bars and beats Branching database Bucket Bullet Points	Chisel, hammer & trowel Chords Classify Data Effects Find & replace Flip	Format GIF Graphic elements Grid Infographics Keyboard shortcuts Narration	Panel Rotate/Rotation Sampled sound Scale Scales (music) Sort Spray	Stamp Stickers Symmetry Text Text Wrapping Word processor Zoom	Acceptable Avatar Permission Personal information Report Respect Responsibility	Sharing Social media Trust Unacceptable
Coverage & Skills								
Computer Science		Information Technology			Digital Literacy			
Autumn 1 – 7 Weeks		Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks		Summer 1 – 6 Weeks	Summer 2 – 7 Weeks	
E-Safety (1-2 hours) NC, KS2: G Begin to... 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term ‘sharing online’ & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check. 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them.		Digital Art (4-6 hours) NC, KS2: D 1. Use various lines and fill tools plus copy/paste and rotation to create pattern effects. 2. Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. 3. Use stamps, copy/paste, layers and multiple frames to create animated GIF computer game graphics. Document Editing & Creation (1-2 hours) NC, KS2: D 1. Copy and Paste text & images. 2. Find and replace words. 3. Format text for a purpose. 4. Add bullet points to make lists. 5. Experiment with keyboard shortcuts.	Programming in Scratch (4-6 hours) NC, KS2: A & B 1. Design, write and debug programs that accomplish specific goals. (Including outputs) 2. Use repetition in programs. 3. Work with various forms of inputs; keyboard, mouse and touch screen. 4. Write programs to simulate physical systems.	E-Safety (1-2 hours) NC, KS2: G Begin to... 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term ‘sharing online’ & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them.		Programming in Kodu (3-5 hours) NC, KS2: A & B 1. Create a 3D place using various design tools 2. Write a program to control a character using inputs 3. Write a program with conditions to create an if statement (If the character touches an object it will disappear) 4. Add a multi-player aspect 5. Write a program with variables (scoring system) 6. Program operators (equals) to achieve a score and win a game.	3D Design (3-5 hours) NC, KS2: D 1. Understand and use 3D space on a grid. 2. Design cities/towns for a purpose and to a budget. 3. Re-create or design familiar 3D models using cubes, such as tables and chairs. 4. Use chisel tool to improve and adapt models. 5. Colour individual blocks or whole models.	
Comic Creation (3 hours) NC, KS2: D 1. Add, resize and organise colour or picture backgrounds. 2. Add, resize, organise characters/objects to different panels. 3. Add narration using text and direct speech using speech bubbles. 4. Save comic with name and title. 5. Add audio recordings (optional).				Music Creation (2-3 hours) NC, KS2: D 1. Create ascending and descending scales. 2. Add chords evenly across the scales. 3. Add arpeggios and melodies. 4. Add a steady and even rhythm. 5. Use sampled sounds to create an effective mix. 6. Build beats, melody (tones) and effects.		Branching Databases (1 hour) NC, KS2: D 1. Add and label objects within a branching database. 2. Ask questions to sort (classify) objects.	Infographics (1-2 hours) NC, KS2: D 1. Understand what an infographic is and why we use them. 2. Search for and add suitable graphic elements. 3. Add and format suitable titles and text. 4. Label an image using arrows.	
Storyboards (1-2 hours) NC, KS2: D 1. Add and edit backgrounds. 2. Add and edit characters, including changing posture, expression and clothing. 3. Add narration and speech bubbles, including formatting text. 4. Duplicate objects to match scenes. 5. Search for objects to use.								
Year 3 – Greater Depth								
<ul style="list-style-type: none"> • Can they recognise the impact of keyword choice on search engine results? (e.g. results ranked according to relevance or reliability of content and credibility of sources) • Can they evaluate content (created/researched) against a given goal? 								

Computing Skills Map – Year 4

Vocabulary

Computer Science	Information Technology					Digital Literacy		
Debug Inputs Selection Sensing Variables	3D Add content Arrange Bar Chart Cell Clips Duplicate/Clone	Export Fill Frame Frame rate GIF Hyperlinks Inspector	Line Graph Masking Onion skin Orthographic mode Page shape Perspective mode Pie Chart	Preview Shapes Special bricks Split Spreadsheet Text Timeline	Titles Transition Transparency/opacity Voiceover Workplane Zoom	Acceptable Address bar Core Processing Unit (CPU) Digital citizen Fan Graphics card Hard Drive	Internet browser Permission Personal information Random Access Memory (RAM) Ranking Report Respect	Responsibility Search engine Sharing Trust Unacceptable Web-address www.

Coverage & Skills

Computer Science		Information Technology		Digital Literacy	
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks
E-Safety (1-2 hours) NC, KS2: G 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term 'sharing online' & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them.	Animation (5-7 hours) NC, KS2: D 1. Create a stop-motion video by duplicating slides that include backgrounds and shapes. 2. Create animation using transition and animation effects (morph, motion paths, pulse etc), including taking and editing a screenshot. 3. Animate individual elements of objects. 4. Create animated GIF files by animating pixels.	Programming in Scratch (6-8 hours) NC, KS2: A, B & C 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks.	E-Safety (1-2 hours) NC, KS2: G 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term 'sharing online' & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them.	3D Design (6-8 hours) NC, KS2: D <u>3D Village Pupil Activity skills:</u> 1. Understand 3D spacial awareness. 2. Add 3D shapes, resize, adjust height, duplicate and use the different perspective. 3. Re-create different types of buildings using 3D shapes. 4. Create roads/paths by adjusting the height of 3D shapes. 5. Add windows and door shapes.	Internet Research (3-4 hours) NC, KS2: E 1. Use search technologies to find specific pieces of information. 2. Understand features of an Internet Browser. 3. Reference the correct source of information. 4. Be discerning in evaluating digital content. 5. Check the internet for fake news by cross-referencing facts.
Data Handling (3-4 hours) NC, KS2: D 1. Change appearance of cells in a spreadsheet (fill colour and border) then add and align text. 2. Find and add data to a spreadsheet, resize cells and use the software to create a suitable chart with a title.			Video Editing (2-3 hours) NC, KS2: D 1. Add scene images. 2. Add scripted voiceover audio, adjust the volume and crop clips (including splitting a clip). 3. Add more clips and use transition effects. 4. Add titles. 5. Use elements such as shapes. 6. Add music background music and adjust the volume. 7. Export a project.	<u>Lego Modelling Pupil Activity skills:</u> 1. Add, move, change colour and duplicate a brick. 2. Rotate bricks. 3. Use sloping bricks and special bricks for a purpose. 4. Change the transparency of bricks.	eBook Creation (3-5 hours) NC, KS2: D 1. Choose a suitable page shape and add a title and subtitle. 2. Change the background colour/texture of a page. 3. Add, resize and change the colour of a shape then copy and paste it. 4. Search for and add suitable images then resize and position them. 5. Create another page with a background, image, shapes and text. 6. Add an audio recording of the page text, including hiding it behind an object. 7. Use hyperlinks for navigation between the pages.
Graphic Design (1 hour) NC, KS2: D 1. Create an icon using different shapes and fill tools. 2. Combine shapes and lines, then arrange them in front/behind each other. 3. Combine shapes, colour and text to re-create an icon. 4. Change the colour, size and style of text to match an icon, then arrange images and use masking and opacity tools.			Inside a Computer (1 Hour) NC, KS2: E 1. Understand what important parts of inside a computer or mobile device do to help with the performance (CPU, Fan, Hard Drive, RAM, Graphics Card). 2. Understand that memory is measured in bytes and gigabytes. 3. Use search filters on websites to find suitable information.		

Year 4 – Greater Depth

- Can they give reasons for errors in programs and explain how they have corrected these through decomposition and debugging?
- Can they explain an algorithm using sequence, repetition and selection in their own words?

Computing Skills Map – Year 5									
Vocabulary									
Computer Science		Information Technology				Digital Literacy			
Accelerometer Debug Inputs Microbit Outputs	Processor Selection Sensing Variables	Accessibility Add content Applications (Apps) Cell Database Duplicate	Field File manager Formula Hyperlinks Icons Inspector	Layer Multi-tasking Navigation Operating system Page shape Preview	Record Screen dimensions Settings Sort Spreadsheet Tracks	@ email address Acceptable Address book Attachments CC and BCC Cloud computing	Consent Digital footprint Firewall Inbox IP address Junk	Outbox Phishing Report Respect Responsibility Router	Server Scam Sharing Trust Unacceptable Wireless Access Point (WAP)
Coverage & Skills									
Computer Science		Information Technology				Digital Literacy			
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks				
E-Safety (1-2 hours) NC, KS2: G 1. Keep personal information private. 2. Respect and protect again online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How and where and who can we report concerns we have to. 7. Understand the pitfalls of in-app purchases.	Programming in Scratch (5-7 hours) NC, KS2: A, B & C 1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer. 2. Program distance sensing and movement. 3. Program Inputs, outputs, loops, conditions, sensing and variables. 4. Program list variables that chooses randomly.	App Design (4-6 hours) NC, KS2: D 1. Adjust slide size to mimic a phone/tablet size. 2. Add text and images to a slide. 3. Add icons and text to use as navigation. 4. Duplicate slides to create multiple pages of the app. 5. Create hyperlinks to create navigation.	E-Safety (1-2 hours) NC, KS2: G 1. Keep personal information private. 2. Respect and protect again online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How and where and who can we report concerns we have to. 7. Understand the pitfalls of in-app purchases.	E-Book Creation (3-5 hours) NC, KS2: D 1. Add page colour and style. 2. Add, position and format text on different pages. 3. Add and position images. 4. Add audio, including hiding it behind an object. 5. Add hyperlinks to text and images. 6. Search for shapes. 7. Lock and arrange shapes (extension task).	Music Creation (2-3 hours) NC, KS2: D 1. Layer tracks using sounds and effects. 2. Use various online samplers and sequencers to create drums patterns and scales. 3. Create effective instrument tracks. 4. Edit tracks and effectively adjust volume and add effects.				
Data Handling (3-4 hours) NC, KS2: D 1. Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. 2. Use formulae to find totals, averages and maximum/minimum numbers. 3. Find data and create a spreadsheet to suit it. 4. Search a database for specific information.			Computer Networks & the Internet (2-3 hours) NC, KS2: F 1. Understand Computer Networks, Internet and Cloud Computing and how they help us. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging).			Physical Devices (Microbits) (1-3 hours) NC, KS2: A & B 1. Understand that computers use physical inputs and outputs and give examples. 2. Program physical inputs, outputs (e.g program LED lights) and random variables. 3. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.			
Operating Systems (1-2 hours) NC, KS2: D 1. Understand the importance of an operating system and its key features. 2. Demonstrate important operating system skills (organising files etc), if possible, across multiple operating systems.									
Year 5 – Greater Depth									
<ul style="list-style-type: none"> • Can they create a multimedia project that contains an appropriately selected range of media? (e.g. audio, video clips) • Can evaluate content according to its effectiveness and impact on a target audience? • Do they consider audience when editing media and justify their choices? 									

Computing Skills Map – Year 6						
Vocabulary						
Computer Science		Information Technology			Digital Literacy	
Animate Broadcasts Grouping Hexadecimal colours Hyperlinks Immersive Inputs	Interactions (conditions) Operators Scenes Sensing Tags Variables Virtual Reality (VR)	<a> HTML Code Arrange Aspect ratio Brightness Cell Colour picker Conditional formatting	Contrast Crop Divider Domain name Drag & drop elements Exposure Filter	Gradient Grouping Highlight Hyperlinks Navigation Saturation Shadows Spacer	Spreadsheet Temperature Theme Tint Transparency/opacity Vibrance	Consent Personal information Phishing Report Respect Scam Sharing Trust
Coverage & Skills						
Computer Science		Information Technology		Digital Literacy		
Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks	
E-Safety (1-2 hours) NC, KS2: G 1. Keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How, where and who can we report concerns we have to. 7. Use suitable usernames and passwords for online accounts. 8. Understand the pitfalls of in-app purchases. 9. Understand how and why companies/people track our online behaviour and how we can prevent it. 10. Understand how clones, trojans and hackers can steal your online identity.	Programming in Scratch (7-9 hours) NC, KS2: A, B & C 1. Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators). 2. Program inputs, selection, sensing, random variables, operators for direction and data variables for scoring. 3. Use inputs, selection, loops, sensing, costume changes and broadcasts. 4. Work with multiple sprites to send broadcast messages between them.	E-Safety (1-2 hours) NC, KS2: G 1. Keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How, where and who can we report concerns we have to. 7. Use suitable usernames and passwords for online accounts. 8. Understand the pitfalls of in-app purchases. 9. Understand how and why companies/people track our online behaviour and how we can prevent it. 10. Understand how clones, trojans and hackers can steal your online identity.	Data Detectives (1-2 hours) NC, KS2: D 1. Use comprehension skills to find clues that match the column headings of a spreadsheet. 2. Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues.	HTML (3-4 hours) NC, KS2: A & D 1. Add and align text and change colour. 2. Program background colour. 3. Add and align images. 4. Add hyperlinks to other websites. 5. Add an iframe (such as a Google Map) and adjust the height and width.	Web Design (5-8 hours) NC, KS2: D 1. Create a static homepage. 2. Choose a suitable theme for your website. 3. Change the site identity to a suitable title, tagline and website icon. 4. Upload a suitable header and/or background image. 5. Adjust the website sidebar and add suitable widgets. 6. Add text and images to a page and edit them. 7. Add multiple pages and edit the navigation, including sub-menus. 8. Provide constructive feedback for your classmates' websites.	
Computers: Past, Present & Future (2-3 hours) NC, KS2: D 1. Show awareness of how computers and digital technology helps us today. 2. Understand how technology has changed over time and represent it as an interactive timeline. 3. Understand the impact (positive/negative) technological changes have on society. 4. Predict how technology will change in the future.		Photograph & Imaging Editing (3-4 hours) NC, KS2: D 1. Adjust the colours, brightness and contrast to improve a photo. 2. Create a before and after slide in presentation software. 3. Take and crop a screenshot. 4. Add drawing and text layers. 5. Import new images as layers and resize them to fit. 6. Add colour elements to a black and white image using layers and eraser tools. 7. Use Artificial Intelligence (AI) to remove objects from photographs and expand them.	Machine Learning & Artificial Intelligence (1-2 Hours) NC, KS2: D 1. Understand how computers use information to learn by solving new problems and following new instructions. 2. Understand and use examples of machine learning. 3. Understand how artificial intelligence is used to perform tasks often only performed by humans. 4. Discuss and show awareness of potential dangers of AI.			
Graphic Design (2 hours) NC, KS2: D 1. Add, adjust and fill shapes. 2. Group shapes to improve accuracy and speed. 3. Add and customise gradient effects. 4. Adjust transparency/opacity for a purpose. 5. Use a colour picker correctly. 6. Accurately rotate shapes.						
Year 6 – Greater Depth						
<ul style="list-style-type: none"> • Can they incorporate images within a document or project where appropriate, using the most effective text wrapping formats within documents? (e.g. selecting 'wrap to text' or layering images in the Photoshop app) • Can they compare the information provided on two tabbed websites looking for bias and perspective? (e.g. evaluating the source of content, reliability and credibility of content, sharing information on secure and encrypted websites) 						

Appendix A – Long-term Plan for individual year groups

Computer Science		Information Technology			Digital Literacy	
	Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks
EYFS	E-Safety	Digital Photos & Videos <i>Green Screen by Do Ink</i>	E-Safety	Early Programming <i>What is programming?</i> <i>Wonderblocks lessons.</i>	E-Safety	Computer Discovery <i>Parts of a computer song.</i>
	Digital Art & Design <i>'Jackson Pollock colouring'</i> <i>Plus... 'Dress Up', 'Design a Robot' or 'Make a Cake'...</i>		Digital Technology to support Early Mathematics & Literacy <i>Introduce ICT Games, Phonics Bloom etc.</i>		Early Programming <i>Wonderblocks lessons.</i> <i>Exploration with Beebots etc.</i>	
Year 1	E-Safety (1-2 hours) <i>Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.</i>	EYFS Digital Art & Design (2 hours) <i>Use technology purposefully to create digital content.</i>	E-Safety (1-2 hours) <i>Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.</i>	Comic Creation (1-2 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>	E-Safety (1-2 hours) <i>Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.</i>	Introduce Programming (5-7 hours) <i>Understand what algorithms are; how they are implemented as programs on digital devices; & that programs execute by following precise & unambiguous instructions.</i> <i>Create & debug simple programs.</i> <i>Use logical reasoning to predict the behaviour of simple programs.</i>
	Mouse & Keyboard Skills (4-6 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>		Digital Art (1-2 hours) <i>Use technology purposefully to create digital content.</i>		Text & Images (3-4 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>	
		Early 3D Design (1-2 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>				
Year 2	E-Safety (1-2 hours) <i>Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.</i>	Recognise Uses of IT (1-2 hours) <i>Recognise common uses of information technology beyond school.</i>	Developing Programming (4-5 hours) <i>Understand what algorithms are; how they are implemented as programs on digital devices; & that programs execute by following precise & unambiguous instructions.</i> <i>Create & debug simple programs.</i> <i>Use logical reasoning to predict the behaviour of simple programs.</i>	E-Safety (1-2 hours) <i>Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.</i>	Programming with Scratch Jr (3-4 hours) <i>Understand what algorithms are; how they are implemented as programs on digital devices; & that programs execute by following precise & unambiguous instructions.</i> <i>Create & debug simple programs.</i> <i>Use logical reasoning to predict the behaviour of simple programs.</i>	Introduce Data Handling (2-3 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>
	Digital Art (3-4 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>					Introduction to Animation (2-4 hours) <i>Use technology purposefully to create, organise, store, manipulate & retrieve digital content.</i>

Computer Science		Information Technology			Digital Literacy	
	Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks
Year 3	E-Safety (1-2 hours) Use technology safely & respectfully, keeping personal information private; identify where to go for help & support when they have concerns about content or contact on the internet or other online technologies.	Digital Art (4-6 hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.	Programming in Scratch (4-6 hours) Design, write and debug programs that accomplish specific goal, including simulating physical systems. Use sequence and repetition in programs; work with various forms of input.	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	Programming in Kodu (3-5 hours) Design, write & debug programs that accomplish specific goal, including simulating physical systems. Use sequence, selection, & repetition in programs; work with various forms of input.	3D Design (3-5 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.
	Comic Creation (3 hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.	Document Editing & Creation (1-2 hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.		Music Creation (2-3 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.		
	Storyboards (1-2 hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.			Branching Databases (1 hour) Collect, classify and present data.		
Year 4	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	Animation (5-7 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	Programming in Scratch (6-8 hours) Design, write & debug programs that accomplish specific goals. Use sequence, selection, & repetition in programs; work with various forms of input & output. Use logical reasoning to explain how some simple algorithms work & to detect & correct errors in algorithms & programs.	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	3D Design (6-8 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	Internet Research (3-4 hours) Use search technologies effectively, appreciate how results are selected & ranked, & be discerning in evaluating digital content.
	Data Handling (3-4 hours) Collecting, analysing, evaluating & presenting data & information.			Video Editing (2-3 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.		
	Graphic Design (1 hour) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.			Inside a Computer (1 Hour) Use search technologies effectively, appreciate how results are selected & ranked, & be discerning in evaluating digital content.		eBook Creation (3-5 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.

Computer Science		Information Technology			Digital Literacy		
	Autumn 1 – 7 Weeks	Autumn 2 – 7 Weeks	Spring 1 – 6 Weeks	Spring 2 – 5 Weeks	Summer 1 – 6 Weeks	Summer 2 – 7 Weeks	
Year 5	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	Programming in Scratch (5-7 hours) Design, write & debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, & repetition in programs; work with variables & various forms of input & output. Use logical reasoning to explain how some simple algorithms work & to detect & correct errors in algorithms & programs.	App Design (4-6 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	E-Book Creation (3-5 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	Music Creation (2-3 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of content that accomplish given goals.	
	Data Handling (3-4 hours) Select, use & combine a variety of software (including internet services). Collecting, analysing, evaluating & presenting data & information.			Computer Networks & the Internet (2-3 hours) Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, & the opportunities they offer for communication & collaboration.			Physical Devices (Microbits) (1-3 hours) Design, write & debug programs that accomplish specific goals, including controlling or simulating physical systems. Use sequence, selection, & repetition in programs; work with variables & various forms of input & output.
	Operating Systems (1-2 hours) Select, use & combine a variety of software on a range of digital devices to create content that accomplish given goals.						
Year 6	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	Programming in Scratch (7-9 hours) Design, write & debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, & repetition in programs; work with variables & various forms of input & output. Use logical reasoning to explain how some simple algorithms work & to detect & correct errors in algorithms & programs.	E-Safety (1-2 hours) Use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content & contact.	Data Detectives (1-2 hours) Select, use & combine a variety of software (including internet services). Collecting, analysing, evaluating & presenting data & information.	HTML (3-4 hours) Design, write & debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals, presenting data & information.	Web Design (5-8 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	
	Computers: Past, Present & Future (2-3 hours) Design & create digital content to accomplish goals. Use search technologies effectively & be discerning in evaluating digital content.		Photograph & Imaging Editing (3-4 hours) Select, use & combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals.	Machine Learning & Artificial Intelligence (1-2 Hours) Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.			
	Graphic Design (2 hours) Design & create digital content to accomplish goals.						

Appendix B – Skills Progression Ladder

		SKILLS						
Year	Computer Science	Information Technology				Digital Literacy		
	Programming	Text & Image Editing	Digital Art & Design	Music & Video Editing	Handling Data	Internet Safety & Awareness	How Do Computers Work & Help Us?	
Reception			Digital Art & Design 1. Make marks using technology. 2. Begin to create their own content on available software.			E-Safety 1. Understand how to stay safe when using technology. 2. Identify someone who can help if they find something they are unsure or worried about. 3. Understand some things are private.		
Year 1	EYFS Early Programming 1. Identify technology around them. 2. Sequence things in the correct order. 3. Follow instructions. 4. Plan instructions. 5. Test & improve instructions. Introduce Programming 1. Place instructions into the correct order (sequence) to make something work. 2. Use direction arrows to move an on-screen object (character/sprite) to achieve an objective. 3. Predict a route and sequence direction commands (algorithm) to achieve an objective. Correct the errors if necessary (debug). 4. Predict a route and sequence distance commands to program an on-screen object to achieve an objective. 5. Predict and sequence movement and pen commands to program the drawing of different 2D shapes. 6. Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective	Mouse & Keyboard Skills 1. Move the mouse or trackpad and left click to select an object. 2. Drag and drop with mouse or trackpad to move objects around the screen. 3. Use double click or double tap. 4. Find letters or numbers on keyboard. 5. Begin touch typing with home row keys. Text & Images 1. Change the background colour of a page. 2. Add, resize and position images (pictures) on a page. 3. Type and position text on a page, if possible, using capital letters and punctuation. 4. Label pictures with text. 5. Use word-banks for writing sentences about pictures.	EYFS Digital Art & Design 1. Use digital software to explore colours and re-create a style. 2. Use digital software to move objects on the screen for a purpose. 3. Use digital software to select objects and use tools to create 2D and 3D designs. 4. Use digital software to experiment with the fill bucket tool to colour a picture. Digital Art 1. Change the colour of individual pixels to accurately re-create basic artwork. 2. Make changes where required. 3. Change the colour of individual pixels to accurately re-create detailed artwork. 4. Use zoom controls to help fill small shapes. Early 3D Design 1. Change the colour and pattern of elements. 2. Position and rotate objects on a design. 3. Position objects in relation to each other. 4. Use custom colours to make digital art your own. 5. Resize, rotate, flip and arrange objects behind/in front of each other.	Music Creation 1. Understand the advantages and disadvantages of making music on a computer. 2. Understand that different instruments make their own sound and that instruments can be divided into groups. 3. Create a rhythm using a pattern of beats. 4. Create digital sounds using patterns and shapes. 5. Create a simple melody using patterns and adjust tempo.			E-Safety 1. Understand what the internet is and how people use it. 2. Understand what personal information is and why we keep personal information private. 3. Why do websites want personal information. 4. Identify when and where to go for help when concerned. 5. Understand what 'SMART' means.	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Year 2</p>	<p>Develop Programming</p> <ol style="list-style-type: none"> 1. Create and debug simple programs by selecting code blocks, placing them in the correct sequence and executing a program. 2. Use logical reasoning to predict the behaviour of simple programs. 3. Simplify a program by using a loop. <p>Programming with Scratch Jr</p> <ol style="list-style-type: none"> 1. Program movements. 2. Program outputs for audio or text. 3. Find errors in a program. 4. Program inputs. 5. Program selection/conditions (if one sprite hits another). 	<p>eBook Creation</p> <ol style="list-style-type: none"> 1. Add a book cover with title, author, colour and image. 2. Add multiple pages based on a theme. 3. Add text on different pages. 4. Add images on different pages to match the theme/text. 5. Add voice recordings to match the text and theme. 	<p>Digital Art</p> <ol style="list-style-type: none"> 1. Use lines and fill tools to make interesting patterns. 2. Add a variety of shapes (outlines and fill) and label them with text. 3. Re-create graphics using pixels with different colours. 	<p>Introduction to Animation</p> <ol style="list-style-type: none"> 1. Add a background and objects to a frame (including text) 2. Copy/clone a frame and move objects to create an animation, including flipping objects. 3. Create an animation with multiple objects moving simultaneously. 4. Create screen-recording animation (optional, requires iPad). 5. Create stop-motion animation with photos (optional, requires iPad). 6. Create animated drawings of characters by cropping photos and adjusting points of movement. 	<p>Introduce Data Handling</p> <ol style="list-style-type: none"> 1. Understand what data is and collect it as a tally. 2. Use software to label a pictogram and add data to each column. 3. Edit a table with correct titles and numbers. 4. Use software to create a bar chart/pie chart/line chart suitable for the data. 5. Interpret a pictogram/bar chart/line chart. 	<p>E-Safety</p> <ol style="list-style-type: none"> 1. Understand what the dangers are of sharing photos online. 2. Understand that people online are not always who they say they are. 3. Know not to always trust information online. 4. Use the Internet responsibly. 5. Be respectful. <p>Internet Research</p> <ol style="list-style-type: none"> 1. Understand how a webpage displays information in different ways; text, images, videos and interactive elements. 2. Use a webpage to answer questions. 	<p>Recognise Uses of IT</p> <ol style="list-style-type: none"> 1. Understand what makes a computer a computer. 2. Understand computers store and follow instructions. 3. Spot digital technology in school. 4. Understand how different technology helps us.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Year 3</p>	<p>Programming in Scratch</p> <ol style="list-style-type: none"> 1. Design, write and debug programs that accomplish specific goals. (Including outputs) 2. Use repetition in programs. 3. Work with various forms of inputs; keyboard, mouse and touch screen. 4. Write programs to simulate physical systems. <p>Programming in Kodu</p> <ol style="list-style-type: none"> 1. Create a 3D place using various design tools 2. Write a program to control a character using inputs 3. Write a program with conditions to create an if statement (If the character touches an object it will disappear) 4. Add a multi-player aspect 5. Write a program with variables (scoring system) 6. Program operators (equals) to achieve a score and win a game. 	<p>Comic Creation</p> <ol style="list-style-type: none"> 1. Add, resize and organise colour or picture backgrounds. 2. Add, resize, organise characters/objects to different panels. 3. Add narration using text and direct speech using speech bubbles. 4. Save comic with name and title. 5. Add audio recordings (optional). <p>Storyboards</p> <ol style="list-style-type: none"> 1. Add and edit backgrounds. 2. Add and edit characters, including changing posture, expression and clothing. 3. Add narration and speech bubbles, including formatting text. 4. Duplicate objects to match scenes. 5. Search for objects to use. <p>Document Editing & Creation</p> <ol style="list-style-type: none"> 1. Copy and Paste text & images. 2. Find and replace words. 3. Format text for a purpose. 4. Add bullet points to make lists. 5. Experiment with keyboard shortcuts. <p>Infographics</p> <ol style="list-style-type: none"> 1. Understand what an infographic is and why we use them. 2. Search for and add suitable graphic elements. 3. Add and format suitable titles and text. 4. Label an image using arrows. 	<p>Digital Art</p> <ol style="list-style-type: none"> 1. Use various lines and fill tools plus copy/paste and rotation to create pattern effects. 2. Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. 3. Use stamps, copy/paste, layers and multiple frames to create animated GIF computer game graphics. <p>3D Design</p> <ol style="list-style-type: none"> 1. Understand and use 3D space on a grid. 2. Design cities/towns for a purpose and to a budget. 3. Re-create or design familiar 3D models using cubes, such as tables and chairs. 4. Use chisel tool to improve and adapt models. 5. Colour individual blocks or whole models. 	<p>Music Creation</p> <ol style="list-style-type: none"> 1. Create ascending and descending scales. 2. Add chords evenly across the scales. 3. Add arpeggios and melodies. 4. Add a steady and even rhythm. 5. Use sampled sounds to create an effective mix. 6. Build beats, melody (tones) and effects. 	<p>Branching Databases</p> <ol style="list-style-type: none"> 1. Add and label objects within a branching database. 2. Ask questions to sort (classify) objects. 	<p>E-Safety</p> <p>Begin to...</p> <ol style="list-style-type: none"> 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term 'sharing online' & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check. 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them. 	

Year 4	<p>Programming in Scratch</p> <ol style="list-style-type: none"> 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks. 	<p>eBook Creation</p> <ol style="list-style-type: none"> 1. Choose a suitable page shape and add a title and subtitle. 2. Change the background colour/texture of a page. 3. Add, resize and change the colour of a shape then copy and paste it. 4. Search for and add suitable images then resize and position them. 5. Create another page with a background, image, shapes and text. 6. Add an audio recording of the page text, including hiding it behind an object. 7. Use hyperlinks for navigation. 	<p>Graphic Design</p> <ol style="list-style-type: none"> 1. Create an icon using different shapes and fill tools. 2. Combine shapes and lines, then arrange them in front/behind each other. 3. Combine shapes, colour and text to re-create an icon. 4. Change the colour, size and style of text to match an icon, then arrange images and use masking and opacity tools. <p>3D Design</p> <p>Village Pupil Activity skills:</p> <ol style="list-style-type: none"> 1. Understand 3D spacial awareness. 2. Add 3D shapes, resize, adjust height, duplicate and use the different perspective. 3. Re-create different types of buildings using 3D shapes. 4. Create roads/paths by adjusting the height of 3D shapes. 5. Add windows and door shapes. <p>Lego Modelling Pupil Activity skills:</p> <ol style="list-style-type: none"> 1. Add, move, change colour and duplicate a brick. 2. Rotate bricks. 3. Use sloping bricks and special bricks for a purpose. 4. Change the transparency of bricks. 	<p>Animation</p> <ol style="list-style-type: none"> 1. Create a stop-motion video by duplicating slides that include backgrounds and shapes. 2. Create animation using transition and animation effects (morph, motion paths, pulse etc), including taking and editing a screenshot. 3. Animate individual elements of objects. 4. Create animated GIF files by animating pixels. <p>Video Editing</p> <ol style="list-style-type: none"> 1. Add scene images. 2. Add scripted voiceover audio, adjust the volume and crop clips (including splitting a clip). 3. Add more clips and use transition effects. 4. Add titles. 5. Use elements such as shapes. 6. Add music background music and adjust the volume. 7. Export a project. 	<p>Data Handling</p> <ol style="list-style-type: none"> 1. Change appearance of cells in a spreadsheet (fill colour and border) then add and align text. 2. Find and add data to a spreadsheet, resize cells and use the software to create a suitable chart with a title. 	<p>E-Safety</p> <ol style="list-style-type: none"> 1. Understand what to do if something upsets you online. 2. Understand why & how people can be nasty online. 3. Describe the term 'sharing online' & why we need to get permission to share photos and videos of other people. 4. Understand why people pretend to be someone else online. 5. Understand why we only talk to people we know in the real world, when online. 6. Understand why we should not always trust what we read online & how to check 7. Understand the importance of being kind in the real world & also online. 8. Understand how to protect digital content with a strong password. 9. Understand the importance of using avatars & how to make them. <p>Internet Research</p> <ol style="list-style-type: none"> 1. Use search technologies to find specific pieces of information. 2. Understand features of an Internet Browser. 3. Reference the correct source of information. 4. Be discerning in evaluating digital content. 5. Check the internet for fake news by cross-referencing facts. 	<p>Inside a Computer</p> <ol style="list-style-type: none"> 1. Understand what important parts of inside a computer or mobile device do to help with the performance (CPU, Fan, Hard Drive, RAM, Graphics Card). 2. Understand that memory is measured in bytes and gigabytes. 3. Use search filters on websites to find suitable information.
Year 5	<p>Programming in Scratch</p> <ol style="list-style-type: none"> 1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer. 2. Program distance sensing and movement. 3. Program Inputs, outputs, loops, conditions, sensing and variables. 4. Program list variables that chooses randomly. 	<p>E-Book Creation</p> <ol style="list-style-type: none"> 1. Add page colour and style. 2. Add, position and format text on different pages. 3. Add and position images. 4. Add audio, including hiding it behind an object. 5. Add hyperlinks to text and images. 6. Search for shapes. 7. Lock and arrange shapes (extension task). 	<p>App Design</p> <ol style="list-style-type: none"> 1. Adjust slide size to mimic a phone/tablet size. 2. Add text and images to a slide. 3. Add icons and text to use as navigation. 4. Duplicate slides to create multiple pages of the app. 5. Create hyperlinks to create navigation. 	<p>Music Creation</p> <ol style="list-style-type: none"> 1. Layer tracks using sounds and effects. 2. Use various online samplers and sequencers to create drums patterns and scales. 3. Create effective instrument tracks. 4. Edit tracks and effectively adjust volume and add effects. 	<p>Data Handling</p> <ol style="list-style-type: none"> 1. Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. 2. Use formulae to find totals, averages and maximum/minimum numbers. 3. Find data and create a spreadsheet to suit it. 4. Search a database for specific information. 	<p>E-Safety</p> <ol style="list-style-type: none"> 1. Keep personal information private. 2. Respect and protect again online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How and where and who can we report concerns we have to. 7. Understand the pitfalls of in-app purchases. 	<p>Operating Systems</p> <ol style="list-style-type: none"> 1. Understand the importance of an operating system and its key features. 2. Demonstrate important operating system skills (organising files etc), if possible, across multiple operating systems. <p>Computer Networks & the Internet</p> <ol style="list-style-type: none"> 1. Understand Computer Networks, Internet and Cloud Computing and how they help us. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging).

<p>Year 6</p>	<p>Programming in Scratch 1. Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators). 2. Program inputs, selection, sensing, random variables, operators for direction and data variables for scoring. 3. Use inputs, selection, loops, sensing, costume changes and broadcasts. 4. Work with multiple sprites to send broadcast messages between them.</p> <p>HTML 1. Add and align text and change colour. 2. Program background colour. 3. Add and align images. 4. Add hyperlinks to other websites. 5. Add an iframe (such as a Google Map) and adjust the height and width.</p>	<p>Photograph & Image Editing 1. Adjust the colours, brightness and contrast to improve a photo. 2. Create a before and after slide in presentation software. 3. Take and crop a screenshot. 4. Add drawing and text layers. 5. Import new images as layers and resize them to fit. 6. Add colour elements to a black and white image using layers and eraser tools. 7. Use Artificial Intelligence (AI) to remove objects from photographs and expand them.</p> <p>Web Design 1. Create a static homepage. 2. Choose a suitable theme for your website. 3. Change the site identity to a suitable title, tagline and website icon. 4. Upload a suitable header and/or background image. 5. Adjust the website sidebar and add suitable widgets. 6. Add text and images to a page and edit them. 7. Add multiple pages and edit the navigation, including sub-menus. 8. Provide constructive feedback for your classmates' websites.</p>	<p>Graphic Design 1. Add, adjust and fill shapes. 2. Group shapes to improve accuracy and speed. 3. Add and customise gradient effects. 4. Adjust transparency/opacity for a purpose. 5. Use a colour picker correctly. 6. Accurately rotate shapes.</p>		<p>Data Detectives 1. Use comprehension skills to find clues that match the column headings of a spreadsheet. 2. Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues.</p>	<p>E-Safety 1. Keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. How can we check online content is trustworthy. 6. How, where and who can we report concerns we have to. 7. Use suitable usernames and passwords for online accounts. 8. Understand the pitfalls of in-app purchases. 9. Understand how and why companies/people track our online behaviour and how we can prevent it. 10. Understand how clones, trojans and hackers can steal your online identity.</p>	<p>Computers: Past, Present & Future 1. Show awareness of how computers and digital technology helps us today. 2. Understand how technology has changed over time and represent it as an interactive timeline. 3. Understand the impact (positive/negative) technological changes have on society. 4. Predict how technology will change in the future.</p> <p>Machine Learning & Artificial Intelligence 1. Understand how computers use information to learn by solving new problems and following new instructions. 2. Understand and use examples of machine learning. 3. Understand how artificial intelligence is used to perform tasks often only performed by humans. 4. Discuss and show awareness of potential dangers of AI.</p>
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Appendix C – E-Safety Assembly Overview

Key Stage 1			
	Term	Assembly idea/plan	Resources
National Curriculum 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.	Autumn 1	Online Safety: <ul style="list-style-type: none"> • Explain that every half term we will be having an internet safety assembly about how we keep safe on the internet. Discuss what we know about the internet. Show some pictures of websites the children might know. Discuss how we must make sure we are safe on the internet. • Show the different posters and have a discussion about them. Children to put thumbs up if they always do this. Encourage thumbs up etc. 	Pictures of websites Internet safety posters
	Autumn 2	Buddy the dog internet safety story: <ul style="list-style-type: none"> • Explain that today's assembly is continuing to think about internet safety. Explain that you have a story to tell them. Before you do that teach them the 'Buddy 'use your tablet safely' song. • Ask for 4 volunteers to be the different characters (they just need to stand their holding the character). • Read the story and when the characters are being talked about stand behind them speaking for the character. When the song comes up get all the children to sing and join in. 	Buddy the dog power point Twinkl Character pictures
	Spring 1	Safer internet day: <ul style="list-style-type: none"> • Go through this year's safer internet day PowerPoint (https://saferinternet.org.uk/) and either follow up with the quiz from the site or do this in class. 	PowerPoint
	Spring 2	Chicken Clicking: <ul style="list-style-type: none"> • Remind children about keeping safe on the internet. Go through the poster cards quickly. • Read the story of Chicken Clicking and discuss what happens in the story. • What can we learn from this story? What must we make sure we do? 	Internet safety posters Chicken Clicking book
	Summer 1	Troll Stinks: <ul style="list-style-type: none"> • Remind the children of keeping safe on the internet. Go through the poster cards quickly. • Then read the story 'Troll Stinks'. Discuss the story. What can we learn from this story? What must we make sure we do? 	Troll Stinks book
	Summer 2	Introduce SMART (This then continues on into KS2): <ul style="list-style-type: none"> • Explain how we can keep safe on games and enjoy them. • Ask 5 children to hold the letters in a row to spell out SMART. • Go through the words. Ch to turn the letters over. Discuss each one briefly but explain over the year we will discuss each word in more detail to help us stay safe. • Use the PPT definitions to explain the meaning. 	Letters and words of SMART PPT slides print out

Key Stage 2			
Curriculum	Term	Assembly idea/plan	Resources
National Curriculum Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Autumn 1	Introduce SMART: <ul style="list-style-type: none"> Show pictures of different websites children go on. Explain that the internet is great because of all these different things. Get the children to name the different pictures. Explain how we can keep safe on games and enjoy them. Ask 5 children to hold the letters in a row to spell out SMART. Go through the words. Ch to turn the letters over. Explain over the year we will discuss each word in more detail to help us stay safe. Use the PPT definitions to explain the meaning. Focus on S from SMART- Safe: <ul style="list-style-type: none"> Show the S Discuss the definition for safe. Keep your personal information safe! If you wouldn't say it to a stranger on the street, don't share it with strangers on the internet. Discuss real life examples. Discuss different scenarios. Is that safe? Why? Why not? 	Pictures of different internet websites Letters and words of SMART SMART PPT slides print out (or show if access to a board). The letter S from the SMART letters.
	Autumn 2	Focus on M from SMART- Meeting: <ul style="list-style-type: none"> Hold up S and remind children of what Safe means. Then get someone else to hold the M up. Discuss the definition of 'meeting'. Don't meet up! Online games can be a great place for chatting to your friends. Always know who you are talking to. If an adult who you don't know ever asks you to meet up, say no and report it... <i>(Perhaps pre-plan a role play scenario with Y6 showing a conversation with a stranger asking to meet up). Discuss scenario. Did they do the right thing? Why? Why not?</i> 	The letter for S and M from the SMART letters.
	Spring 1	Safer internet day: <ul style="list-style-type: none"> Go through this year's safer internet day PowerPoint (https://saferinternet.org.uk/) and either follow up with the quiz from the site or do this in class. 	PowerPoint
	Spring 2	Focus on A from SMART- Accepting: <ul style="list-style-type: none"> Hold up S and M and remind children of what Safe and meeting means. Then get someone else to hold the A up. Discuss the definition of 'accepting'. Think before you accept something from someone online e.g. a file, a download, a picture etc. It may contain a virus. If you don't know who it's from, and it has an attachment... DELETE IT! Come up with different files the children may be able to download. Give out different adult roles and children to put thumbs up or down whether they would accept a file from them. E.g- Mum, dad, someone you met on Minecraft etc. 	The letter for S, M and A from the SMART letters.
	Summer 1	Focus on R from SMART- Reliable: <ul style="list-style-type: none"> Hold up S, M and A remind children of what safe, meeting and accepting means. Then get someone else to hold the R up. Discuss the definition of 'Reliable'. Not everyone online is trustworthy. Somebody may be lying about their age and who they are. Make sure you know who you are talking to and use reputable sites and services to protect you and your computer. Children to come up with reliable people that they can trust. How can we check who we are talking to? What can we do if we are unsure? 	The letter for S, M, A and R from the SMART letters.
	Summer 2	Focus on T from SMART- Tell: <ul style="list-style-type: none"> Hold up S, M, A, R and T reminding children of safe, meeting, accepting, reliable. Then get someone else to hold the T up. Discuss the definition of 'tell'. Tell a parent, carer or trusted adult if someone, or something makes you feel worried or uncomfortable online. Also, tell someone if a friend of yours needs help online too. After discussing and thinking about who they can tell. Read some of the different scenarios and the children can discuss what they would do and what part of SMART would that come under. 	The letter for S, M, A, R and T from the SMART letters. Scenario cards

