Upham CE Primary School Curriculum & Progression Overview – Computing

Overview of Computing Curriculum

Year B

	Autumn Term I	Autumn Term II	Spring Term I	Spring Term II	Summer Term I	Summer Term II
Class 4 (Years 5 & 6)	(CS) Scratch perimeter • Understand how to follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; • Know how to decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; • Know how to keep testing a program and recognise when it needs to be debugged;	(ICT 1) Word processing, publishing reports for Vikings some internet use (DL) • Understand the WWW as a one service on the internet which is hosted as a network of connected servers holding webpages of information • Know how to use the skills already developed to create content using unfamiliar technology; • Understand how to select, use and combine the appropriate technology tools to create effect; • Know how to review and improve their own work and support others to improve their work; • Know how to save, retrieve and evaluate their work, making amendments; making amendments; • Know how to insert a picture/text/graph/hyperlink from the internet or personal file; • Understand and be able to make judgements about digital content when evaluating and repurposing for another audience •	(ICT 3) Spreadsheets – recording science • Know how to construct data on the most appropriate application; • know how to interpret data, including spotting inaccurate data and comparing data; • Know keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; • Understand how to add data to an existing database;	(DL) – internet • Know how to search for information using appropriate websites and advanced search functions within Google; • Know strategies to check the reliability of information (cross-check with another source such as books); • Know how search results are selected and ranked; • Know how to seek help across a range of digital platforms; • Discuss scenarios involving online risk; • Dev point for 23/24 (ICT 2) Music recording and production • Know that computers share data from various inputs, such as sensors and application software • Collect audio from a variety of resources including own recordings and internet clips; • Know how to use a digital device to record sounds and present audio; • Know how to trim, arrange and edit audio levels to improve quality;	(DL) evaluating content • Know how to search for information using appropriate websites and advanced search functions within Google; • Know strategies to check the reliability of information (cross-check with another source such as books); • Know how search results are selected and ranked; • Understand how to check the reliability of a website, including photos; • Know about copyright and acknowledge the sources of information; • Know how to be a good online citizen and friend; • Know how to protect their password and other personal information; • Know what sort of privacy settings might be relevant to reducing different risks; • Know how to seek help across a range of digital platforms; • Discuss scenarios involving online risk; • Understand unacceptable and acceptable behaviour whilst using technologies and online services	(CS) Scratch design game • Know that external triggers and infinite loops are used to demonstrate control; • Understand how to follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; • Know that algorithms can have two way selections and design their use – if, then, also with loops • Know how to decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; • Know how to keep testing a program and recognise when it needs to be debugged;
Class 3 (Years 3 & 4)	• (ICT 1) Desktop publishing • Know how to create different effects with different technological tools, demonstrating control; • Know how to use applications and devices in order to communicate ideas, work, and messages; • Know how to save, retrieve and evaluate work; • Know how to insert a picture/text/graph from the internet or a personal file;	• (DL) Internet use • Understand how to navigate the web and carry out searches to collect digital content • Know how to use search tools to find and use an appropriate website and content; • Know how to organise digital content independently; • Understand and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; • Know how to seek help when they experience something worrying; • Dev point for 23/24 (CS) Scratch • Know how to solve an open-ended problem by using logical thinking to break it up into smaller parts; • Know how to write a program, putting commands into a sequence to achieve a specific outcome;	During 2021/22 Across Whole Term Dev point 23/24 (ICT 2) creating film clips and joining • Know how to use software to record, create and edit sounds and capture still images; • Know how to change recorded sounds, volume, duration and pauses;	(CS) Scratch maze • Know how to solve an open-ended problem by using logical thinking to break it up into smaller parts; • Know and begin to use two way selection algorithms are – if, then. • Understand how to give a set of instructions to follow and use logical reasoning to predict what will happen; • Know how to test a program and recognise when it needs to be debugged; • Know which variables create an effect, e.g. repetition, if, when, loop;	• (DL) Internet research (Egyptians) • Understand how to navigate the web and carry out searches to collect digital content • Know how to add websites to a favourites list; • Know how to use search tools to find and use an appropriate website and content; • Know strategies to improve results when searching online; • Know how to organise digital content independently; • Understand and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; • Know how to seek help when they experience something worrying; • Know how to recognise age-appropriate websites and adverts	• (ICT 1) Brochure Publishing of Upham study • Know how to use appropriate keyboard commands to amend text on a device; • Know how to use applications and devices in order to communicate ideas, work, and messages; • Know how to save, retrieve and evaluate work; • Know how to insert a picture/text/graph from the internet or a personal file;

		• Know and begin to use two way selection algorithms are – if, then. • Know how to test a program and recognise when it needs to be debugged;	• Know how to use software to capture video for a purpose; • Know how to crop and arrange clips to create a short film; •		• knows a range of ways to report unacceptable or uncomfortable content and whilst online	
Class 2 (Years 1 & 2)	(DL) Logging in, using tech safely • Know how to open webpages and use links to websites to find information; • Know how to save, retrieve and organise work; • Understand what is appropriate and inappropriate behaviour on the internet; • Know what things count as personal information; • Understand and follow sensible online safety rules, e.g. taking pictures & sharing information; • Know how to seek help from an adult when they see something that is unexpected or worrying;	(ICT 3) using different programmes eg reading scheme/ maths games • Understand different types of data: text & number • Know that different programmes work with different types of data	(CS) Human Crane Algorithms • Understand that programs execute by following precise instructions. • Understand how to control the nature of events: repeat, loops, single events and add and delete features; • Know how to give a set of instructions to follow and show understanding by predicting what will happen; • Understand linear algorithms symbolically • Know how to improve/change their sequence of commands by debugging;	(CS) Beebots • Understand that programs execute by following precise instructions. • Know to give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; • Know how to give a set of instructions to follow and show understanding by predicting what will happen; • Understand linear algorithms symbolically • Know how to improve/change their sequence of commands by debugging;	(DL) Technology around the home • Understand that computers do not think for themselves, they follow instructions given • Know how to open webpages and use links to websites to find information; • Understand age-appropriate websites; • Know ways that technology is used in the home and community, e.g. taking photos, blogs, shopping;	(ICT 1) Art Attack – creating artwork using ICT • Know how to use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape; • Understand applications and devices in order to communicate ideas, work, messages and demonstrate control; • Know how to save, retrieve and organise work;
Class 1 (Year R)	**Autumn**		**Spring**		**Summer**	
	Using whiteboard applications to make marks, control games and interact with stories, songs and numbers Use simple hardware to record sounds and speech and replay Take photographs of play/ things they have made using different hardware Use ipads to play games and view on-line content Use laptops to record words and numbers using keyboard keys Read stories/ watch multimedia materials across all areas of learning Identify computers in their environment • Understand that computers do things people ask them to do. • Understand cause and effect where clicking, touching or actioning (to select) results in a movement/ opening/ sound • Know and recognise where computers are in the classroom • Know how to use simple mark making tools software across devices • Listen to and watch multimedia material across a range of devices • Understand numbers and quantities across stories and multimedia contexts • Understand that the internet can be used to show information, stories and material and recognise when this is being used. • Know to share with an adult if anything worries them • Know that computers are used around the school and at home		Using whiteboard applications to make marks, control games and interact with stories, songs and numbers Use simple hardware to record sounds and speech and replay Take photographs of play/ things they have made using different hardware Use ipads to play games and view on-line content Use laptops to record words and numbers using keyboard keys Read stories/ watch multimedia materials across all areas of learning Identify computers in their environment • Understand that computers do things people ask them to do. • Understand cause and effect where clicking, touching or actioning (to select) results in a movement/ opening/ sound • Know and recognise where computers are in the classroom • Know how to use simple mark making tools software across devices • Listen to and watch multimedia material across a range of devices • Understand numbers and quantities across stories and multimedia contexts • Understand that the internet can be used to show information, stories and material and recognise when this is being used. • Know to share with an adult if anything worries them • Know that computers are used around the school and at home		ELG People, Culture and Communities Explain some similarities and differences between life in this country and life in other countries ELG Writing Spell words by identifying sounds in them and representing the sounds with a letter or letters; ELG Experimenting with Materials Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; ELG Number Have a deep understanding of number to 10, including the composition of each number; ELG Numerical Patterns Compare quantities up to 10 in different contexts, ELG Managing Self Explain the reasons for rules, know right from wrong and try to behave accordingly;	

Overview of Computing Curriculum

Year A

	Autumn Term I	Autumn Term II	Spring Term I	Spring Term II	Summer Term I	Summer Term II
Class 4 (Years 5 & 6)	(DL) Internet use safe • Know how to search for information using appropriate websites and advanced search functions within Google; • Know strategies to check the reliability of information (cross-check with another source such as books); • Know how search results are selected and ranked; • Understand how to check the reliability of a website, including photos; • Know about copyright and acknowledge the sources of information; • Know how to be a good online citizen and friend; • Know how to protect their password and other personal information; • Know what sort of privacy settings might be relevant to reducing different risks; • Know how to seek help across a range of digital platforms; • Discuss scenarios involving online risk; • Understand unacceptable and acceptable behaviour whilst using technologies and online services	(ICT 1) 3D modelling • Know how to use the skills already developed to create content using unfamiliar technology; • Understand how to select, use and combine the appropriate technology tools to create effect; • Know how to review and improve their own work and support others to improve their work; • Know how to save, retrieve and evaluate their work, making amendments; making amendments; • Know how to insert a picture/text/graph/hyperlink from the internet or personal file;	(ICT 2) Mayans animation • Collect audio from a variety of resources including own recordings and internet clips; • Know how to publish their animation and use a movie editing package to edit/refine and add titles;	(CS) scratch link with internet to research electrical lighting systems (DL) • Understand the difference between hardware and application software. • Know that external triggers and infinite loops are used to demonstrate control; • Understand how to follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; • Know that algorithms can have two way selections and design their use – if, then, also with loops • Know what conditional statements and edit variables are; • Know how to keep testing a program and recognise when it needs to be debugged; • Understand and be able to make judgements about digital content when evaluating and repurposing for another audience •	(ICT 3) Databases • Know how to construct data on the most appropriate application; • know how to interpret data, including spotting inaccurate data and comparing data; • Know keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; • Understand how to add data to an existing database;	(CS) Scratch dinosaur game • Understand how to follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; • Know that algorithms can have two way selections and design their use – if, then, also with loops • Know how to decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; • Know how to keep testing a program and recognise when it needs to be debugged;
Class 3 (Years 3 & 4)	(DL) Internet digital footprint • Know that a range of devices can be considered a computer • Know that different operating systems eg windows and IOS, can offer different things to users • Understand how to navigate the web and carry out searches to collect digital content • Know how to add websites to a favourites list; • Know strategies to improve results when searching online; • Know they have a digital footprint and think about their behaviour online; • Understand what is appropriate and inappropriate behaviour on the internet, • Understand the term cyberbullying; • Understand and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; • Know how to seek help when they experience something worrying;	(CS) Scratch quiz about mountains and rivers • Know how to solve an open-ended problem by using logical thinking to break it up into smaller parts; • Know how to write a program, putting commands into a sequence to achieve a specific outcome; • Know and begin to use two way selection algorithms are – if, then. • Know how to test a program and recognise when it needs to be debugged;	(ICT 1) Publishing re Romans • Know how to create different effects with different technological tools, demonstrating control; • Know how to use appropriate keyboard commands to amend text on a device; • Know how to use applications and devices in order to communicate ideas, work, and messages; • Know how to save, retrieve and evaluate work; • Know how to insert a picture/text/graph from the internet or a personal file; • Know how to use search tools to find and use an appropriate website and content; • Know how to organise digital content independently;	(CS) Scratch • Know how to solve an open-ended problem by using logical thinking to break it up into smaller parts; • Know how to write a program, putting commands into a sequence to achieve a specific outcome; • Understand how to give a set of instructions to follow and use logical reasoning to predict what will happen; • Know how to test a program and recognise when it needs to be debugged; Know which variables create an effect, e.g. repetition, if, when, loop;	(ICT 3) Data handling • Know the different ways data can be organised; • Know how to sort and organize information to use; • Know how to search a ready-made database to answer questions;	(ICT 2) Animation – stop frame Lego Characters • Plan an animation and move items within each animation for playback; • Know how to create different effects with different technological tools, demonstrating control; • Know how to use applications and devices in order to communicate ideas, work, and messages; • Know how to save, retrieve and evaluate work;

	• Know how to recognise age-appropriate websites and adverts • knows a range of ways to report unacceptable or uncomfortable content and whilst online					
Class 2 (Years 1 & 2)	(DL) Logging in, using tech safely • Know how to open webpages and use links to websites to find information; • Know how to save, retrieve and organise work; • Understand what is appropriate and inappropriate behaviour on the internet; • Know what things count as personal information; • Understand and follow sensible online safety rules, e.g. taking pictures & sharing information; • Know how to seek help from an adult when they see something that is unexpected or worrying;	(ICT 1) word making labels for toys • Know how to add text strings, text boxes and show and hide objects and images, manipulating the features; • Understand applications and devices in order to communicate ideas, work, messages and demonstrate control; • Know how to save, retrieve and organise work;	(CS) Logo • Understand that programs execute by following precise instructions. • Know to give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; • Know how to give a set of instructions to follow and show understanding by predicting what will happen; • Understand linear algorithms symbolically • Know how to improve/change their sequence of commands by debugging;	(DL) Selecting info from search engines • Know how to open webpages and use links to websites to find information; • Understand and follow sensible online safety rules, e.g. taking pictures & sharing information; • Know how to seek help from an adult when they see something that is unexpected or worrying; Dev point for 22/23 (ICT 2) Recording and making sounds • Know how to use software to record sounds; • Know how to change recorded sounds; • Know how to save, retrieve and organise work;	(DL) being safe on the internet – using search filters • Know how to open webpages and use links to websites to find information; • Understand age-appropriate websites; • Know how to use safe search filters; • Know what things count as personal information; • Understand and follow sensible online safety rules, e.g. taking pictures & sharing information; • Know how to seek help from an adult when they see something that is unexpected or worrying; • Know how to safely open and close applications and log on and log off from websites; •	(CS) Junior scratch • Understand that programs execute by following precise instructions. • Understand how to control the nature of events: repeat, loops, single events and add and delete features; • Know how to improve/change their sequence of commands by debugging;

Overview of Progression Within Upham CE Primary School Computing Curriculum

	x Aspect		Foundations in Year R within EYFS ELG xxx	KS1	Lower KS2	Upper KS2
Computer Science	**Programming**		• Understand that computers do things people ask them to do. • Understand cause and effect where clicking, touching or actioning (to select) results in a movement/ opening/ sound • Know and recognise where computers are in the classroom ELG People, Culture and Communities • Explain some similarities and differences between life in this country and life in other countries,	• Understand that programs execute by following precise instructions. • Know to give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; • Understand how to control the nature of events: repeat, loops, single events and add and delete features; • Know how to give a set of instructions to follow and show understanding by predicting what will happen; • Understand linear algorithms symbolically • Know how to improve/change their sequence of commands by debugging;	• Know how to solve an open-ended problem by using logical thinking to break it up into smaller parts; • Know how to write a program, putting commands into a sequence to achieve a specific outcome; • Know and begin to use two way selection algorithms are – if, then. • Understand how to give a set of instructions to follow and use logical reasoning to predict what will happen; • Know how to test a program and recognise when it needs to be debugged; • Know which variables create an effect, e.g. repetition, if, when, loop;	• Know that external triggers and infinite loops are used to demonstrate control; • Understand how to follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; • Know that algorithms can have two way selections and design their use – if, then, also with loops • Know what conditional statements and edit variables are; • Know how to decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; • Know how to keep testing a program and recognise when it needs to be debugged;
	Digital Systems			• Understand that computers do not think for themselves, they follow instructions given	• Know that a range of devices can be considered a computer • Know that different operating systems eg windows and IOS, can offer different things to users	• Know that computers share data from various inputs, such as sensors and application software • Understand the difference between hardware and application software. • Understand the WWW as a one service on the internet which is hosted as a network of connected servers holding webpages of information
Information & Communication Technology	**Creating Content**	Multimedia Text & Images	• Know how to use simple mark making tools software across devices ELG Writing • Spell words by identifying sounds in them and representing the sounds with a letter or letters;	• Know how to add text strings, text boxes and show and hide objects and images, manipulating the features; • Know how to use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape; • Understand applications and devices in order to communicate ideas, work, messages and demonstrate control; • Know how to save, retrieve and organise work;	• Know how to create different effects with different technological tools, demonstrating control; • Know how to use appropriate keyboard commands to amend text on a device; • Know how to use applications and devices in order to communicate ideas, work, and messages; • Know how to save, retrieve and evaluate work; • Know how to insert a picture/text/graph from the internet or a personal file;	• Know how to use the skills already developed to create content using unfamiliar technology; • Understand how to select, use and combine the appropriate technology tools to create effect; • Know how to review and improve their own work and support others to improve their work; • Know how to save, retrieve and evaluate their work, making amendments; making amendments; • Know how to insert a picture/text/graph/hyperlink from the internet or personal file;
		Multimedia Sound and Motion	• Listen to and watch multimedia material across a range of devices ELG Experimenting with Materials • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;	• Know how to use software to record sounds; • Know how to change recorded sounds; • Know how to save, retrieve and organise work;	• Know how to use software to record, create and edit sounds and capture still images; • Know how to change recorded sounds, volume, duration and pauses; • Know how to use software to capture video for a purpose; • Know how to crop and arrange clips to create a short film; • Plan an animation and move items within each animation for playback;	• Collect audio from a variety of resources including own recordings and internet clips; • Know how to use a digital device to record sounds and present audio; • Know how to trim, arrange and edit audio levels to improve quality; • Know how to publish their animation and use a movie editing package to edit/refine and add titles;
		Handling Data	• Understand numbers and quantities across stories and multimedia contexts ELG Number • Have a deep understanding of number to 10, including the composition of each number; ELG Numerical Patterns • Compare quantities up to 10 in different contexts,	• Understand different types of data: text & number • Know that different programmes work with different types of data	• Know the different ways data can be organised; • Know how to sort and organize information to use; • Know how to search a ready-made database to answer questions;	• Know how to construct data on the most appropriate application; • know how to interpret data, including spotting inaccurate data and comparing data; • Know keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; • Understand how to add data to an existing database;
	Searching Content		• Understand that the internet can be used to show information, stories and material and recognise when this is being used.	• Know how to open webpages and use links to websites to find information; • Understand age-appropriate websites; • Know how to use safe search filters;	• Understand how to navigate the web and carry out searches to collect digital content • Know how to add websites to a favourites list; • Know how to use search tools to find and use an appropriate website and content;	• Know how to search for information using appropriate websites and advanced search functions within Google; • Know strategies to check the reliability of information (cross-check with another source such as books); • Know how search results are selected and ranked;

				• Know strategies to improve results when searching online; • Know how to organise digital content independently;	• Understand how to check the reliability of a website, including photos; • Know about copyright and acknowledge the sources of information; •
Digital Literacy	**Online Safety**	• Know to share with an adult if anything worries them • Know that computers are used around the school and at home ELG Managing Self • Explain the reasons for rules, know right from wrong and try to behave accordingly;	• Know what things count as personal information; • Understand and follow sensible online safety rules, e.g. taking pictures & sharing information; • Know how to seek help from an adult when they see something that is unexpected or worrying; • Know how to safely open and close applications and log on and log off from websites;	• Understand and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords; • Know how to seek help when they experience something worrying; • Know how to recognise age-appropriate websites and adverts • knows a range of ways to report unacceptable or uncomfortable content and whilst online	• Know how to protect their password and other personal information; • Know what sort of privacy settings might be relevant to reducing different risks; • Know how to seek help across a range of digital platforms; • Discuss scenarios involving online risk; • Understand unacceptable and acceptable behaviour whilst using technologies and online services
	Digital Citizen		• Understand what is appropriate and inappropriate behaviour on the internet; • Know ways that technology is used in the home and community, e.g. taking photos, blogs, shopping;	• Know they have a digital footprint and think about their behaviour online; • Understand what is appropriate and inappropriate behaviour on the internet, • Understand the term cyberbullying; • Know ways to communicate with others online; • Know that the world wide web is the part of the internet that contains websites; • Begin to show understanding of the quality of digital content collected	• Know how to be a good online citizen and friend; • Understand and be able to make judgements about digital content when evaluating and repurposing for another audience
Vocabulary use to demonstrate knowledge & Understanding		Use key vocabulary to demonstrate knowledge and understanding: • Computer, ipad, whiteboard, camera, click, on, off, screen, button, website	Use key vocabulary to demonstrate knowledge and understanding in the above strands: • algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise. • filter, Google, search engine, image, keyboard, email, internet, address, safe, settings, undo, text, file, image, window, minimise, click, drag, log on, log off, keyboards, keys, mouse, button, double click, drag. • safe, meet, accept, online, internet.	Use key vocabulary to demonstrate knowledge and understanding in the above strands: • decompose, sequence, flowchart, sprite, algorithm, correct, errors, program, commands, forward, clear screen. • fill colour, group, ungroup, font, format, wrap text, hyperlink, folder, exit, password, screenshot, snip, redo, menu, highlight, cursor, toolbar, embed, link, frame, loop, stop motion, subject, secure, internet, world wide web • reliable, personal, world wide web, message, social media, email, password, cyberbullying/bullying, account, private, public.	Use key vocabulary to demonstrate knowledge and understanding in the above strands: • control, output, symbol, delay, loop, repeat, sequence. • spreadsheet, cell, row, column, formula, insert, ascending, descending, input, output, digital content, upload browser, bias, source, secure, https, domain, • spam, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, adverts, reporting, anonymous, victim, fraud, policy.