



Earlham Primary School
Computing Long Term Plan
Knowledge and Skills Overview 2023/24

EYFS				
		Knowledge	Skills	Key Vocabulary
	Autumn Boats Ahoy	Children know about similarities and differences in relation to places, objects, materials and living things.	Children develop their own narratives and explanations by connecting ideas or events. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. Children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events.	boat float sink heavy light predict instructions test
	Busy Bodies	Children know about similarities and differences in relation to places, objects, materials and living things. Talk about their bodies including the similarities and differences in relation to each other, the effect of emotions, physical activity and their surroundings. Children talk about the changes they have gone through since they were younger.	They make observations of animals and plants and explain why some things occur, and talk about changes. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. Follow instructions involving several ideas or actions.	grow baby younger older body parts rehearse perform movement instruction first next

			Sing songs, make music and dance, and experiment with ways of changing them. Represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories.	
		Knowledge	Skills	Vocabulary
	Summer Summer Fun	Name some shapes and colours. Use language that describes the position of objects on a map.	Talk about how they collect, group and organise items they have collected on their walk. Children begin to understand how to group objects based on their colour and begin to represent this as a pictogram. Discover how shapes can be placed together to form a picture called a tangram. Combine, turn and place shapes to create familiar seaside features. Recount a journey using models, characters or toys to develop a map.	shape names colour names rotate positional language map road
Year 1				
	Creating Media: Digital Writing	Knowledge	Skills	Vocabulary
	Autumn Using a computer to create and format text, before comparing to writing non-digitally.	To identify that the look of text can be changed on a computer To explain why I used the tools that I chose To compare typing on a computer to writing on paper	To use a computer to write To add and remove text on a computer To make careful choices when changing text	program type text select delete upper/ lower case
	Data and Information: Grouping Data	Knowledge	Skills	Vocabulary

	Spring Exploring object labels, then using them to sort and group objects by properties.	To identify that objects can be counted To describe objects in different ways	To label objects To count objects with the same properties To compare groups of objects To answer questions about groups of objects	data information object count compare group property
	Programming: Moving a robot	Knowledge	Skills	Vocabulary
	Summer Writing short algorithms and programs for floor robots, and predicting program outcomes.	To explain what a given command will do	To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem	algorithm instruction code command debug direction forwards backwards turn left / right

Year 2

	Computing Systems and Networks: Technology around us	Knowledge	Skills	Key Vocabulary
	Autumn 1 Recognising technology in school and using it responsibly	To identify technology To identify a computer and its main parts To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology	To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text	computer information technology mouse keyboard
	Creating Media: Making Music	Knowledge	Skills	Vocabulary
	Spring Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	To identify that there are patterns in music To show how music is made from a series of notes	To say how music can make us feel To create music for a purpose To review and refine our computer work	music adjective rhythm pattern pitch notes sequence
	Programming: Scratch Jr Algorithms	Knowledge	Skills	Vocabulary
	Designing and programming the movement of a character on screen to tell stories.	To choose a command for a given purpose To explain that each sprite has its own instructions	To join a series of commands together To identify the effect of changing a value To design the parts of a project To use my algorithm to create a program in Scratch Jr	algorithm instruction code command debug program run

Year 3

Year 3				
	Creating Media: Stop-frame Animation	Knowledge	Skills	Vocabulary
	Autumn Capturing and editing digital still images to produce a stop-frame animation that tells a story.	To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images	To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation	animate/animation sequence frame
	Data and Information: Branching databases	Knowledge	Skills	Vocabulary
	Spring Building and using branching databases to group objects using yes/no questions.	To identify the object attributes needed to collect relevant data To explain why it is helpful for a database to be well structured	To create questions with yes/no answers To create a branching database To identify objects using a branching database To compare the information shown in a pictogram with a branching database	data database object compare group property attribute classify
	Programming: An Introduction to Quizzes	Knowledge	Skills	Vocabulary
	Summer Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome	To create a program in Scratch Jr using a given design To change a given design To create a program using my own design To decide how my project can be improved	algorithm instruction code command debug program run

Year 4

	Computing Systems and Networks: The Internet	Knowledge	Skills	Key Vocabulary
	Autumn Identifying that digital devices have inputs, processes, and outputs, and how devices can be	To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To recognise the physical components of a network To describe how networks physically connect to other networks To recognise how networked devices make up the internet	To explore how digital devices can be connected To explain how digital devices function To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To evaluate the impact of unreliable information	input output device digital network server switch

	Creating Media: Photo editing	Knowledge	Skills	Key Vocabulary
	Spring Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	To explain that digital images can be changed To describe how images can be changed for different uses To recognise that not all images are real	To change the composition of an image To make good choices when selecting different tools To evaluate how changes can improve an image	tool composition

	Programming: Repetition in games	Knowledge	Skills	Vocabulary
	Summer Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	To explain that in programming there are infinite loops and count controlled loops	To develop the use of count-controlled loops in a different programming environment To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design and create a project that includes repetition	command sequence algorithm code debug loop count-controlled infinite decomposition

Year 5

	Creating Media: Video editing	Knowledge	Skills	Key Vocabulary
	Autumn Planning, capturing, and editing video to produce a short film.	To explain what makes a video effective To identify digital devices that can record video To identify that video can be improved through reshooting and editing	To capture video using a range of techniques To create a storyboard To consider the impact of the choices made when making and sharing a video	store retrieve export storyboard edit camera angle
	Data and Information: Flat-file databases	Knowledge	Skills	Vocabulary

	Spring Using a database to order data and create charts to answer questions.	To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually	To use a form to record information To apply my knowledge of a database to ask and answer real-world questions	form field record sort question value selection filter
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	Programming: Selection in quizzes	Knowledge	Skills	Vocabulary
	Summer Exploring selection in programming to design and code an interactive quiz.	To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program	To design a program which uses selection To create a program which uses selection To evaluate my program	infinite loop condition conditional loop statement flow algorithm debug setup code

Year 6

	Computing Systems and Networks: Communication (Search Engines)	Knowledge	Skills	Key Vocabulary
	Autumn Recognising how the WWW can be used to communicate and be searched to find information.	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology	To evaluate different methods of online communication	search engine web crawler index rank relevance
	Creating Media: Web page creation	Knowledge	Skills	Key Vocabulary
	Spr i n g Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	To review an existing website and consider its structure To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people	To plan the features of a web page To consider the ownership and use of images (copyright)	media HTML feature layout copyright fair-use preview navigation path hyperlink
	Programming: Variables in games	Knowledge	Skills	Vocabulary

	Summer Exploring variables when designing and coding a game.	To define a 'variable' as something that is changeable To explain why a variable is used in a program	To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project	variable placeholder memory value
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			To evaluate my project	algorithm debug
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Computers systems and networks

Data

Creating media

Programming

Appendix 1: National Curriculum coverage in each unit

Foundation Stage	Boats Ahoy!	Busy Bodies	Summer Fun
Early Learning Goal and Development Matters links	Communication and Language – Speaking • 40-60+ months: Extends vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words Literacy – Reading • 30-50 months: Knows information can be relayed in the form of print • 40-60+ months: Knows that information can be retrieved from books and computers Understanding • 40-60+ months: Responds to instructions involving a 2 part sequence Understanding the world – Technology • 30-50 months: Knows that information can be retrieved from computers • 40-60+ months: Interacts with age-appropriate computer software Understanding the world – People and Communities • 30-50 months: Remembers and talks about significant events in their own experiences. Recognises and describes special times or events for family or friends Understanding the World – The world (specific area) • 30-50 months: Talks about why things happen and how things work • 40-60+ months: Looks closely at similarities, differences	Understanding the World – The world (specific area) • 30-50 months: Can talk about some of the things they have observed such as plants, animals, natural and found objects • 40-60+ months: Looks closely at similarities, differences, patterns and change Literacy – Reading (specific area) • 30-50 months: Knows information can be relayed in the form of print • 40-60+ months: Knows that information can be retrieved from books and computers Expressive Arts and Design Being Imaginative (specific area) • 40-60+ months: Create simple representations of events, people and objects Understanding the world – People and Communities (specific area) • 30-50 months: Knows some of the things that make them unique, and can talk about some of the similarities and differences in relation to friends or family Understanding the World – The world (specific area) • 40-60+ months: Looks closely at similarities, differences, patterns and change Mathematics – Shape, space and measures (specific area) • 40-60+ months: Order and sequences familiar events	Active Learning • Children will become more deeply involved when you provide something that is new and unusual for them to explore, especially when it is linked to their interests. Creative and Critical Thinking • Sustained shared thinking helps children to explore ideas and make links. Follow children's lead in conversation, and think about things together. Personal, Social and Emotional • 40-60 months: Encourage children to explore and talk about what they are learning, valuing their ideas and ways of doing things • 40-60 months: Model and involve children in finding solutions to problems and conflicts. Communication and Language (Understanding) • 40-60 months: Ask children to think in advance about how they will accomplish a task. Talk through and sequence the stages together. Encourage children to explain, predict and speculate. Communication and Language (Speaking) • 40-60 months: Value children's contributions Mathematics • 40-60 months: Ensure that children are involved in making displays, e.g. making their own pictograms of lunch choices. Develop this as a 3D representation using bricks and discuss the most popular choices.

	Expressive arts and design – Being imaginative (specific area) • 30-50 months: Uses available resources to create props to support role play • 40-60+ months: Creates simple representation of events, people and objects PSED – Making relationships (prime area) • 30-50 months: Can play in a group, extending and elaborating play ideas	Communication and Language – Understanding (prime area) • 40-60+ months: Responds to instructions involving a 2 part sequence Expressive arts and design – Exploring and using media and materials (specific area) • 40-60+ months: Begins to build a repertoire of songs and dances Expressive arts and design – Being imaginative (specific area) • 40-60+ months: Initiates new combinations of movement and gesture in order to express and respond to feelings, ideas and experiences	• 40-60 months: Encourage use of mathematical language. For example – triangle, rotate, rectangle, etc. .Natural World • Explore the natural world around them, making observations and drawing pictures of animals and plants .Expressive Arts and Design • 40-60 months: Talk to children about ways of finding out what they can do with different media and what happens when they put different things together.
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Appendix 2: Glossary of Computing terms

Term	Key Stage	Definition
Algorithm	1&2	A precise set of ordered steps that can be followed by a human or a computer to achieve a task
Attribute (property)	1&2	A word or a phrase that can be used to describe an object such as its colour, size, or price
Browser	2	SEE: Web browser
Code	1&2	The commands that a computer can run
Code snippet	1&2	A section of a program viewed in isolation

Term	Key Stage	Definition
Command	1&2	A single instruction that can be used in a program to control a computer
Computer	1&2	A programmable machine that accepts and processes inputs and produces outputs
Computer network	2	A group of interconnected computing devices
Computer system	2	A combination of hardware and software that can have data input to it, which it then processes and outputs. It can be programmed to perform a variety of tasks
Condition	2	A statement that can be either True or False
Condition-controlled	2	SEE: Loop (condition-controlled)
Count-controlled loop	2	SEE: Loop (count-controlled)
Data	1&2	A letter, word, number etc. that has been collected for a purpose, but stored without context
Data set	2	A collection of related data
Debugging	1&2	The process of finding and correcting errors in a program

Term	Key Stage	Definition
Decompose	2	To break down a task into smaller, more achievable steps
Digital device	2	A computer or a device with a computer inside that has been programmed for a specific task
Domain name	2	The part of a website's URL that is user friendly and identifies that it is under the control of a particular person or organisation e.g. raspberrypi.org
Execute (run)	2	SEE: Run
Hardware	2	The physical parts of a computer system
HTML (HyperText	2	A standardised language used to define the structure of web pages
Hyperlink	2	(Also: link, weblink) Text or media that when clicked, takes the user to another specified location (URL)
Infinite loop	2	SEE: Loop (infinite)
Information	1&2	Data put into a context that provides meaning
Information technology	1	The study, use, and development of computer systems for storing, processing, retrieving, and sending information

Term	Key Stage	Definition
Input	2	Data that is sent to a program to be processed
Input device	2	A piece of hardware used to control, or send data to, a computer
Internet	2	The global system of interconnected computer networks
Loop	2	(Count-controlled, condition-controlled, or infinite) Commands that repeatedly run a defined section of code
Loop (condition-controlled)	2	A command that repeatedly runs a defined section of code until a condition is met
Loop (count-controlled)	2	A command that repeatedly runs a defined section of code a predefined number of times
Loop (infinite)	2	A command that repeatedly runs a defined section of code indefinitely
Network	2	SEE: Computer network
Object	1	Something that can be named and has other attributes (properties), which can be labelled
Object	2	Something that is uniquely identifiable and has attributes

Term	Key Stage	Definition
Output	2	The result of data processed by a computer
Output device	2	A piece of hardware that is controlled by outputs from a computer
Procedure	2	A named set of commands that can be called multiple times throughout a program. This type of subroutine does not return a value.
Process	2	A program, or part of a program, that is running on a computer
Program	1&2	A set of ordered commands that can be run by a computer to complete a task
Property (attribute)	1	A word or a phrase that can be used to describe an object such as its colour, size, or price
Repetition	2	Part of a program where one or more commands are run multiple times in a loop
Router	2	A device that manages the flow of data between computer networks
Run (execute)	1&2	To action the commands in a program
Selection	2	Part of a program where if a condition is met, then a set of commands is run

Term	Key Stage	Definition
Server	2	A networked computer that manages, stores , and provides data such as files to other computers
Software	2	The programs used to control computers and perform specific tasks
Stored (data)	2	Data kept digitally so that it can be accessed by a computer
Subroutine	2	A named sequence of commands designed to perform a specific task
Switch (network)	2	A device that manages the flow of data packets within a computer network
Technology	1	The use of scientific knowledge for practical purposes
URL (Uniform Resource	2	The address of a file on the internet
Variable	2	A named piece of data (often a number or text) stored in a computer's memory, which can be accessed and changed by a computer program
Web	2	SEE: WWW (World Wide Web)

Term	Key Stage	Definition
Web address	2	SEE: URL (Uniform Resource Locator)
Web browser	2	A program used to view, navigate, and interact with web pages
Web page	2	A HTML document viewed using a web browser
Website	2	A collection of interlinked web pages , stored under a single domain
WiFi	2	A technology that allows devices to wirelessly access a network and transfer data
WAP (Wireless Access Point)	2	A network device that allows wireless computing devices to connect to a wired network
WWW (World Wide Web)	2	A service provided via the internet that allows access to web pages and other shared files