COMPUTING
at Roydon Primary School

Objectives from the National Curriculum:	
EYFS Early Learning Goals can be found by clicking here The technology **Early Learning Goal** is: Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	**Key Stage 1 and Key Stage 2:** National Curriculum objectives can be found by clicking here The overall aim at Roydon Primary School is to ensure that all pupils: • will use technology respectfully and safely • will be able to solve problems using technology • will be able to communicate digitally in different ways

Progression of Skills:

Computer Science

		Reception/Year 1	Year 1/Year 2		Year 3/Year 4		Year 5/Year 6	
LO		Complete a simple program on a computer. Create and debug simple programs.	Create and debug simple programs.		Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.		Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	
SC		Children can speculate on the reasons why things happen or how things work. Children can work out what is wrong with a simple algorithm when the steps are out of order.	Children can work out what is wrong with a simple algorithm when the steps are out of order. Children can create a simple program that achieves a specific purpose. Children can also identify and correct some errors. Children's program designs display a growing awareness of the need for logic.		Children can turn a simple real-life situation into an algorithm for a program. Children are using coding structures for selection and repetition. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it. They show initiative debug and fix errors in their own program.		Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. Moving on to doing this unaided.	
		Icons that cause things to happen	*Year A: Espresso coding (Y1)* *Login: student23417 Roydon*	*Year A: Espresso coding (Y1)* *Login: student23417 Roydon*	*Year B: Espresso coding (Y2)* *Login: student23417 Roydon*	*Year A: Espresso Coding (Y3)* *Login: student23417 Roydon*	*Year B: Espresso Coding (Y4)* *Login: student23417 Roydon*	*Year A: Espresso Coding (Y5)* *Login: student23417 Roydon*	*Year B: Espresso Coding (Y6)* *Login: student23417 Roydon*

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LO	Show skills in achieving effects by pressing parts or lifting flaps Use logical reasoning to predict the behaviour of simple programs.		Use logical reasoning to predict the behaviour of simple programs.		Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.		Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
SC	Children can make sounds, movements or new images When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program.		When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Then, children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.		Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this.		When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later. Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.
	Battery-powered toys, books, etc.	*Year A: Scratch Jr (app)*	*Year A: Scratch Jr (app)*	*Year B: BeeBot*	*Year A: Sketch nation (app)*	*Year B: Hour Of Code (Grades 2-5)*	*Year A: Hour Of Code (Grades 6-8)* — *Year B: Mozilla Hackasaurus*
LO	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.		Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.		To explain how some simple algorithms, work and to detect and correct errors in algorithms and programs. 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.		To explain how some simple algorithms, work and to detect and correct errors in algorithms and programs. 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.
SC	Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective.		Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program. Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms.		Children can list a range of ways that the internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails. Children recognise the main component parts of hardware which allow computers to join and form a network. Ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.		Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content Children know what a WAN and LAN are and can describe how they access the internet in school.
		Year A: Daisy Dino (app) *Monster Physics (app)* *Bee Bot (app)*	*Year A: Daisy Dino (app)* *Monster Physics (app)* *Bee Bot (app)*	*Year B: Cato's Hike (app)* *Pettson's Inventions (app)* *A.L.E.X. (app)*	*Year A: Class email address*	*Year B: BBC Bitesize – How the internet/ email/search engine works*	*Year A: Office 365 email Office 365 Shared work drives* — *Year B: Kidblog*

				Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
LO					
SC				Children demonstrate the ability to design and code a program that follows a simple sequence. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing. They understand 'if' statements for selection & try to combine these with other coding structures including variables to achieve the effects they design in their programs.	Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task. Coding shows an understanding of variables in coding, outputs such as sound & movement, inputs from the user of the program such as button clicks and the value of functions.
			Year A: BYOB snap (app)	*Year B: Hopscotch (app)*	*Year A: Scratch*	*Year B: Kodu*

Information Technology							
LO	Know how to operate simple equipment Use technology purposefully to create, organise, store, manipulate and retrieve digital content.		Use technology purposefully to create, organise, store, manipulate and retrieve digital content.		Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.		Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
SC	Children extend their skills as they become familiar with simple equipment, such as twisting a knob. Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources.		Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources. Children demonstrate an ability to organise data using, for example, a database. Children use a range of media in their digital content including photos, text and sound.		Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine. They can appraise selected webpages for credibility and information at a basic level. .		Children search with greater complexity for digital content when using a search engine. Children apply filters when searching for digital content. They explain the credibility of a webpage and its content. They compare a range of digital content sources & rate them in terms of quality & accuracy.
	Use of sound recording devices	*Year A: Basic keyboard skills. Understand getting on internet. Search engines for topic*	*Year A: Basic keyboard skills. Understand getting on internet. Search engines for topic*	*Year B: Understand public/saving work. Search engine, images, saving/copy/paste*	*Year A: Search engines– opening multiple tabs Welcome to the Web 1 – 3 (website)*	*Year B: Search engines for topic – studying reliability*	*Year A: Welcome to the Web 4 – 7 (website)*	*Year B: Search engines for topic – studying reliability e.g. Wikipedia*

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				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, including collecting, analysing, evaluating and presenting data and information.		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, including collecting, analysing, evaluating and presenting data and information.	
LO	Show an interest in technological toys.						
SC	Children explore pieces of ICT apparatus they see or that they use with adult supervision			Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software		Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. They review solutions from others. Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the internet. They are able to use criteria to evaluate the quality.	
	Investigating real objects such as cameras or mobile phones.			*Year A: Textease Branching Database* *iCan Animate (app)*	*Year B: PowerPoint presentations* *iMovie (trailers)* *iMotion (app)*	*GarageBand* *KidBlog*	*iMovie (films)* *Prezi (app/website)*

Digital Literacy

LO	Recognise technology used for particular purposes.	Recognise common uses of information technology beyond school.		
SC	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. They make links between technology around them, coding and multimedia work they do in school.		
	Object sorting e.g. a microwave vs. a chair.	*Year A: Puppet Pals (app)*	*Year A: Puppet Pals (app)*	*Year B: iPads to photograph and record.*

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LO	Use ICT hardware to interact with age-appropriate computer software		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		Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.		Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concern about content and contact.
SC	Children coordinate actions to use technology Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder.		Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder. Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically. They know ways of reporting inappropriate behaviours and content to a trusted adult.		Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct. They know more than one way to report unacceptable content and contact. Children can explore key concepts relating to online safety. They can help others to understand the importance of online safety.		Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others. They recognise the value in preserving their privacy when online for their own and other people's safety.
	Dialling a telephone number	*Year A: Think You Know 5-7 (website) Sending messages to friends.*	*Year A: Think You Know 5-7 (website) Sending messages to friends.*	*Year B: Internet Safety Rules Email a story character National Online Safety Interactive Lessons*	*Year A: E-safety posters (Book creator) National Online Safety Interactive Lessons*	*Year B: E-safety posters (Comic Life) Think u know 8-10 (website)*	*Year A: Google 'Be An Internet Legend'*
							Year B: Social Media analysis and presentation

EYFS Key: **30 – 50 months**   **40 – 60+ months**   **Early Learning Goals**