Cedars Primary School
Breadth of Study in Computing

		Nursery 30-50 Months	Reception 40-60 Months	Phase 1 Key Stage 1 Year 1 & 2	Phase 2 Lower Key Stage 2 Year 3 & 4	Phase 3 Upper Key Stage 2 Year 5 & 6
Programme of Study		Knows that information can be retrieved from computers Knows how to operate simple equipment Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phonics. Show skill in making toys work by pressing parts or lifting flaps to effects such as sound, movements or new images.	Recognise that a range of technology is used in places such as homes and schools Select and use technology for particular purposes Complete a simple program on a computer Use ICT hardware to interact with age appropriate computer software	**National Curriculum Aims** ➢ 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.		

National Curriculum Subject Content			
- Seeking, finding out and operating technology within a school setting - Connecting what is seen at home to what is seen at school - Asking an adult for help to stay safe	- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions – Recording instructions to outline a route or a journey. - create and debug simple programs – See CO1 above – if the journey goes wrong, how can you correct it? - use logical reasoning to predict the behaviour of simple programs – Using a floor robot (disguise as an animal) – programme a set of instructions so that the robot moves to and from points (Y1, D P - use technology purposefully to create, organise, store, manipulate and retrieve digital content – Make a short stop motion animation – create a background and take photographs to use on video editing software - WMM. (Y1, DP). Copy and paste a cropped photograph of themselves	- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs. - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - recognise common uses of information technology beyond school Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns	- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - Sourcing images of art, setting up a digital portfolio,

			into a picture of the royal family (Y1, BLBC) 🞣 use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet 🞣 recognise common uses of information technology beyond school.	about content and contact: Y4 T & R – Create a stop motion animation to create a moving and talking King Arthur – adding audio. 🞣 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	download images, saving and printing. Hyperlinking images (GR, Y6). 🞣 use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour 🞣 select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Create a surrealist film, moving an inanimate object or objects using stop-frame animation techniques (Y6, GR)

Computer Science					
	❖ Using programmable toys such as beebots – experimenting with it such as turning it on and off, listening to the noises it makes, watching the lights, watching where it goes and clearing its memory.	❖ Using beebots to navigate very simple routes ❖ Independently use the beebot app to explore simple routes	❖ program a basic floor turtle such as a BeeBot to navigate increasingly complex routes and are able to debug their instructions when the turtle does not reach the intended destination ❖ program an onscreen app such as BeeBot or Kodable to complete a set task and are able to debug their instructions when the turtle does not reach the intended destination ❖ use a more complex turtle with standard units to navigate increasingly	❖ use graphical programming language, such as Scratch or Logo to draw regular 2D shapes. Pupils add loops or procedures to create a repeating pattern ❖ sequence instructions, for instance to create an animation using Scratch, or by using the timing features in PowerPoint ❖ write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to create a simple program to control an onscreen icon ❖ Extension - create a simple game using a graphical language such as Kodu or Scratch ❖ collaborate electronically by blogging - mailing and working on shared documents using the pupil sites of the DLG	❖ write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to create a simple program to control an onscreen icon. They are able to explain how their program works. ❖ create a computer game, using a graphical language such as Scratch or Kodu ❖ Extension –learn to use and program a raspberry pi to complete a basic task ❖ collaborate electronically by blogging -mailing, and working on shared documents using the pupil sites of the DLG. This can be extended to working with other schools ❖ know that connected devices exchange packets of data and this can convey a range of information from a text to a video call

			complex routes, and are able to debug their instructions when the turtle does not reach the intended destination ❖ Extension - learn to use a simple graphical programming language such as Logo, Scratch or Turtle to navigate around the screen ❖ Extension create a 3D environment, using a graphical language such as Kodu. They link this to a story such as an island adventure.		

			❖ Know some of the uses of the internet		

Digital Literacy					
	❖ Learning that we use a computer to find out information ❖ Asking adults to find out information on a computer ❖ Children use apps and talk about their likes and dislikes ❖ Adult role model and use language connected with searching, finding and accessing websites and information. ❖ Children are exposed to adults using digital recording of their experience for their learning journeys	❖ Teach internet safety through song ❖ Begin to understand what the internet is ❖ Exposure to different websites and talk about their uses, eg cbeebies, games, the weather etc.	❖ know that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information ❖ introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. Recognise that it may be difficult to	❖ know that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information ❖ know how to make good passwords for their accounts, learn about spam and how to deal with it. Begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge ❖ introduced to their roles as digital citizens in an online community, where they reflect on how they are responsible not only for themselves but for others, in order to create a safe and comfortable environment ❖ know that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others	❖ know that the internet is a great place where online relationships can be developed. They compare and contrast online friends and real life, face to face friends and learn how to respond if an online friend asks them a personal question. ❖ Know how to create secure passwords for their accounts, learn about spam and how to deal with it, and decode website privacy policies, understanding the implications for the info that they share online. ❖ explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world ❖ begin to explore the nature of online audiences and permanency of

				distinguish between someone who is real and someone who is not ❖ introduced to the basics of online searching ❖ to explore websites and to say whether they like them or not and why		information online. Beegin to understand the significance of published information and personal information ❖ understand what it means to be a good digital citizen as they interact with others online by understanding how to prevent and respond to cyberbullying. They also learn how to communicate effectively to prevent miscommunication in order to be a responsible member of a connected culture ❖ begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile ❖ know the 'do's and don'ts' of copying and pasting information to avoid plagiarism. Know how to avoid plagiarism by putting information in

					their own words, putting excerpted information into quotes, and providing citations. To show respect for other people's creations by giving them credit

| ICT | ❖ Pupils are exposed to adults using presentation and word ❖ Pupils use colouring apps on the touch screen | ❖ Pupils learn to use simple programmes such as paint to create pictures | ❖ Digital Publishing: to use basic word processing package and to write and illustrate a short story ❖ Presentation: to make simple presentations ❖ Graphics: to create a simple digital painting ❖ Animations: to make a simple animation for instance in Puppet Pals ❖ Media: to use digital cameras and microphones for a purpose ❖ Working with data: to create and use a pictogram ❖ Modelling: to explore online simulations such as Charlie Chimp | ❖ Digital Publishing: know how to use software to create an e-book, brochure or poster on a given subject ❖ Presentations: to write and deliver a presentation on a given subject ❖ Graphics: know how to take, adapt or create images to enhance or further develop their work ❖ Animations: know how to develop a storyboard and then create a simple animation using for instance 'Puppet Pals' or 'Stop Motions' Animation' ❖ Sound and video: record and edit media to create a short sequence ❖ Working with data: to search, sort and graph information | ❖ Digital Publishing: know how to use software to create an e-book, brochure or poster on a given subject, incorporating a range of media ❖ Presentations: to write and deliver a presentation, incorporating a range of media ❖ Graphics: how to take, adapt or create images to enhance or further develop their work and incorporate it in a wider project ❖ Animations: how to develop a storyboard and then create a simple animation using for instance Puppet pals' or 'Stop Motions Animation' - this may be extended by editing the final product in using video editing software ❖ Sound and video: record and edit media to create a short sequence - extended by editing the |

					final product in using video editing software
					❖ Working with data: to search, sort and graph information
					❖ Modelling: how to use a spreadsheet to model data