Churcham Primary School

Progression in Computing

Children should be taught:		Progression of knowledge, skills and understanding by end of Phase Children will be able to:		
		Year 2	**Year 4**	**Year 6**
To code (using Scratch)	Motion	• Control motion by specifying the number of steps to travel, direction and turn.	• Use specified screen coordinates to control movement.	• Set IF conditions for movements. Specify types of rotation giving the number of degrees.
	Looks	• Add text strings, show and hide objects and change the features of an object.	• Set the appearance of objects and create sequences of changes.	• Change the position of objects between screen layers (send to back, bring to front).
	Sound	• Select sounds and control when they are heard, their duration and volume.	• Create and edit sounds. Control when they are heard, their volume, duration and rests.	• Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation.
	Draw	• Control when drawings appear and set the pen colour, size and shape.	• Control the shade of pens.	• Combine the use of pens with movement to create interesting effects.

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	Events	• Specify user inputs (such as clicks) to control events.	• Specify conditions to trigger events.	• Set events to control other events by 'broadcasting' information as a trigger.
	Control	• Specify the nature of events (such as a single event or a loop).	• Use IF THEN conditions to control events or objects.	• Use IF THEN ELSE conditions to control events or objects.
	Sensing	• Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).	• Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions).	• Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.
	Variables and lists	• From Year 3 onwards.	• Use variables to store a value. • Use the functions define, set, change, show and hide to control the variables.	• Use lists to create a set of variables.

For more information or to arrange a visit to our school please contact:

Michelle Kelly (Headteacher)   tel: 01452 750467   admin@churcham.gloucs.sch.uk

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	Year 2		**Year 4**	**Year 6**
	Operators	• From Year 3 onwards.	• Use the Reporter operators () + () () - () () * () () / () to perform calculations.	• Use the Boolean operators () < () () = () () > () ()and() ()or() Not() to define conditions. • Use the Reporter operators

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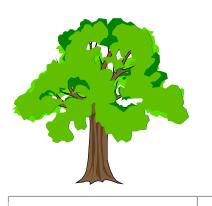|				() + ()
				() - ()
				() * ()
				() / ()
				to perform calculations.
				Pick Random () to ()
				Join () ()
				Letter () of ()
				Length of ()
				() Mod () This reports the remainder
				after a division calculation
				Round () () of ().

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	Year 2	**Year 4**	**Year 6**
To connect	• Participate in class social media accounts. • Understand online risks and the age rules for sites.	• Contribute to blogs that are moderated by teachers. • Give examples of the risks posed by online communications. • Understand the term 'copyright'. • Understand that comments made online that are hurtful or offensive are the same as bullying. • Understand how online services work.	• Collaborate with others online on sites approved and moderated by teachers. • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. • Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.

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				• Understand the effect of online comments and show responsibility and sensitivity when online. • Understand how simple networks are set up and used.

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Children should be taught:		Progression of knowledge, skills and understanding by end of Phase Children will be able to:		
		Year 2	Year 4	Year 6
To communicate		• Use a range of applications and devices in order to communicate ideas, work and messages.	• Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally.	• Choose the most suitable applications and devices for the purposes of communication. • Use many of the advanced features in order to create high quality, professional or efficient communications.
To collect		• Use simple databases to record information in areas across the curriculum.	• Devise and construct databases using applications designed for this purpose in areas across the curriculum.	• Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner.

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Computing opportunities	Coding	Connecting	Communicating	Collecting
• Use a range of devices and applications across all curriculum subjects. • Further develop coding skills and applications. • Communicate a wide range of ideas to a variety of audiences. • Collect, manipulate and analyse data.	• Design and use computer abstractions that model real world problems and physical systems. • Understand some key algorithms for sorting and searching. • Use a number of programming languages to solve a variety of computational problems. • Use data structures such as tables or arrays. • Use procedures to write modular programs. • Understand Boolean logic (such as AND, OR and NOT) and its use in determining which parts of a program are executed. • Explain how instructions are stored and executed within a computer system.	• Understand the devices and applications that make up networked computer systems and how they interact. • Explain how networks such as the internet work. • Understand how computers can monitor and control physical systems.	• Undertake creative projects that involve selecting, using and combining multiple applications, across a range of devices, to achieve goals. • Create, reuse, revise and repurpose digital information and content with attention to design, intellectual property and audience.	• Explain how data of various types can be represented and manipulated in the form of binary digits including numbers, text, sounds and pictures. • Collect and analyse data.