

SKILLS DEVELOPMENT IN COMPUTING

LO: TO CODE, TO CONNECT, TO COMMUNICATE, TO COLLECT

Key stage 1

Pupils should be taught to:

- ♣ understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- ♣ create and debug simple programs
- ♣ use logical reasoning to predict the behaviour of simple programs
- ♣ use technology purposefully to create, organise, store, manipulate and retrieve digital content
- ♣ recognise common uses of information technology beyond school
- ♣ 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.

Key stage 2

Pupils should be taught to:

- ♣ 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
- ♣ 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

♣ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	1	2	3	4	5	6
To code (use Scratch)	Control motion by specifying the number of steps to travel, direction and turn.	Use logical reasoning to predict the behaviour of simple programs.	Use specified screen coordinates to control movement.		Set IF conditions for movements. Specify types of rotation giving the number of degrees.	
Motion						
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.	
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	Create and debug simple programs. Save, organise and retrieve information.	Specify the nature of events (such as a single event or a loop). Create and debug simple programs		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			Use variables to store a value.	Use the functions define, set, change, show and hide to control the	Use lists to create a set of variables.	

				variables.		
Operators				Use the Reporter operators () + () () - () () * () () / () to perform calculations.		Use the Boolean operators () < () () = () () > () ()and() ()or() Not() to define conditions. • Use the Reporter operators () + () () - () () * () () / () to perform calculations. Pick Random () to () Join () () Letter () of () Length of () () Mod () This reports the remainder after a division calculation Round () () of ().
To connect	Understand online risks and the age rules for sites.	Participate in class social media accounts.	Contribute to blogs that are moderated by teachers.	Understand the term 'copyright'.	Collaborate with others online on sites approved and moderated by teachers.	Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder.
			Give examples of the risks posed by online communications.	Understand how online services work.	Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems.	Understand how simple networks are set up and used.
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		Choose the most suitable applications and devices for	Use many of the advanced features in order to create

		messages professionally.	the purposes of communication.	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.	