ROKEBY PRIMARY SCHOOL
PART OF STOWE VALLEY MULTI ACADEMY TRUST

Stowe Valley
MULTI ACADEMY TRUST

Level Expected at the End of EYFS

Pupils should be taught to: Know how to operate simple equipment, e.g. turn on a CD player and use a remote control. Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Know that information can be retrieved from computers •Complete a simple program on a computer.	Use ICT hardware to interact with age-appropriate computer software. Recognise that a range of technology is used in places such as homes and schools. Select and use. Know that information can be retrieved from computers. Complete a simple program on a computer. Use ICT hardware to interact withage-appropriate computer software Select and use technology for particular purposes.

Key Stage 1 National Curriculum Expectations

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 National Curriculum Expectations

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

- 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

Intent

At Rokeby Primary School we believe that Computing and the use of ICT is central to the education of all children. We aim to give each pupil the opportunity to apply and develop their technological understanding and skills across a wide range of situations and tasks.

Pupils are encouraged to develop a confident and safe approach to Computing and the use of ICT, with the understanding of the capabilities and flexibility of their resources. With the knowledge that Computing and ICT will undoubtedly continue to form a major part in the children's life at home, in further education and places of work, we ensure the Computing and ICT experiences and abilities that the children are equipped with at Rokeby, are effective and transferrable life skills.

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.

Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate –able to use, and express themselves and develop their ideas through, information and communication technology –at a level suitable for the future workplace and as active participants in a digital world.

Implementation

At Rokeby computing is taught using a blocked Rainbow curriculum. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. We have a class set of laptops to ensure that all year groups have the opportunity to use a range of programs for many purposes across the wider curriculum, as well as in discrete computing lessons. Employing cross-curricular links motivates pupils and supports them to make connections and remember the steps they have been taught.

The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon.
- A Rokeby programmer can design, write and debug programs that accomplish specific goals.
- A Rokeby computational thinker can Use logical reasoning to predict the behaviour of simple programs.
- A Rokeby computer user can select, use and combine a variety of software to solve a given problem.
- All Rokeby computer users know how to use technology safely and respectfully.

Impact

Principles of Computing WALT's

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Learn how data can be structured as records with fields for information.	Develop presentation skills	Understand some elements of survey design	Develop a link between geometry and art	Be familiar with semaphore and morse code	Manage or contribute to large collaborative projects.
Learn how data can be organised into groups and subgroups	Use mind mapping to improve note taking.	Understand some legal and ethical aspects of data collection	Develop some awareness of computer generated art.	Understand the need for data encryption	Write and review content
Learn how data can be constructed into a tree	Create basic graphs and charts using Microsoft Excel	Use charts to analyse data		Appreciate the use of complex passwords	Design and produce a high quality print document.
Learn how data can be organised into a table		Interpret their results.			Consider the ethical principals of AI
Learn how data in a table can be filtered and searched					Judge the reliability of an online source

Programming WALT's

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
that a programmable robot can be controlled by inputting a series of instructions	Plan a sequence of instructions to move a character in Scratch.	Plan and create an algorithm for an animated scene	Develop and educational computer game using selection and repetition.	Create original artwork and sound for a game	Learn how computers use stored programs to connect input and output
To develop and record sequences of instructions as an algorithm	Create test and debug programs in Scratch	Use Scratch to create animation	Understand and use variables	Design a computer game that uses sequence, repetition and variables.	Plan a complex project by decomposing it into smaller parts.
To produce a robot to follow their algorithm	Work with input and output in Scratch Jr	Review animation program and correct mistakes	Start to debug computer programs	Detect and correct errors in computer games	Design and write a program for an embedded system.
To debug programs	Use repetition in their programs		Recognise the importance of user interface design.	Use iterative development techniques	Develop the ability to think logically about algorithms
To predict how their programs will work	Create a sequence of instructions for a virtual robot.		Learn about inputs and outputs	Create their own VR scene	Understand that some algorithms are more efficient than others
Use Scratch to create repeating rhythms	Use logical reasoning to make predictions of a program.		Use a BBC Microbit to program short algorithms	Program objects and interactions in VR	Understand common algorithms for sorting and searching a list.
Experiment with a range of virtual instruments.	Work out how to play a game well				

Problem Solving

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Break down a process into simple steps (an algorithm)	Develop problem solving skills	Develop strategies for finding errors in programs	Test and debug using an on screen simulator	Use commenting tools to give feedback on a website	Source digital media whilst demonstrating safe use
Develop collaboration skills	Develop collaboration skills by working as part of a group.	Build up resilience and strategies for problem solving	Give feedback to others on their programs	Develop greater aesthetic awareness	Judge the reliability of online sources
Revise and improve their work.	Think through privacy implications of search engines	Increase their knowledge and understanding of Scratch	Recognise the importance of User Interface design using inputs and outputs.	Have some understanding of how encryption works on the internet.	How to counter someone else's argument while showing respect and tolerance
	Be more discernible in evaluating online information.	Recognise a number of common bugs in software programs.			Have some strategies for dealing with bullying and intolerance
		Understand collaboration in WIKI's			Think critically about how a video is used to promote a cause
		Write for a target audience using a Wiki tool.			Work collaboratively to edit and assemble an advert video

Using Technology

Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Use different features of a video camera	Use the iPad camera app	Develop web based research skills	Compose and edit tunes using Garage Band	Develop familiarity with a simple CAD package	Work collaboratively to shoot footage for an advert
Use a video camera to capture moving images	Take digital photographs	Record a piece to camera	Perform electronic music using pre recorded loops	Develop spatial awareness by experimenting with a 3D environment.	Train a neural net to recognise images
Edit a video to include commentary	Review, reject and edit their photographs	Edit a movie using static images and green screen	Create own music loops	Plan and create a non linear presentation	Learn how speech synthesis works.
Develop collaboration skills		Give constructive feedback on recorded presentations.	Create a multi track composition.	Use hyperlinks for navigation within a presentation	
Discuss their work and think how it could be improved.				To record and add narration to a slide presentation	
Create artwork in a range of styles on ipads					
Use the undo function if they make a mistake					
Use multiple layers in their art					
To paint on top of photographs.					