

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 with age-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 **problem solver** can create, select, use and combine a variety of software to solve a given problem and debug programs.
- A Rokeby **computational thinker** can use logical reasoning to predict the behaviour of simple programs.
- A Rokeby computer **creator** can use a variety to technology to make
- All Rokeby computer users **are safe** and know how to use technology safely and respectfully.

Impact

Computing impact statement
July 2021

Our newly designed computing curriculum provides children with ambitious opportunities to learn and rehearse skills in the following areas:

Online safety

Understanding programming and debugging skills

Using IT to create and manipulate

Collect, store and present data

Connect to the wider world, safely.

The curriculum has been devised to meet the needs of our learners and community. Online safety is a very real concept in our community, and it is paramount that we teach them the skills they need to stay safe online. The impact of this has been that children talk confidently about how they act online and are making better choices with their online identity.

After a staff skills audit, the decision was made to buy a scheme of work which would support staff with high quality teaching of computing. This curriculum has been adapted for the Rokeby learners. As a result we now provide an engaging curriculum with high expectations where children can build on their skills.

Staff are more skilled than in previous times due to a staff skills audit carried out last year and some training that was put in place. More training is to be offered over the coming terms.

The curriculum is now well resourced and equipped for, after an audit of computing equipment in school was carried out.

Children speak positively about computing. Lower key stage 2 in particular enjoy coding and making their own games, this skill is built on with AI and VR in upper KS2.

Children are now mostly able to access computing equipment with increasing independence.

WALTS Online safety (Autumn Term 1)

Key stage one NC coverage:					
<ul style="list-style-type: none"> 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 two NC coverage:					
<ul style="list-style-type: none"> 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 					
Year One	Year Two	Year Three	Year Four	Year Five	Year Six
WALT log on using our username and password	WALT log on using our username and password and keep this information private	WALT log on using our username and password and keep this information private	WALT what to do when something online feels unsafe and how to report it	WALT understand and explore our online identity (2 sessions – childnet online identity pack 7-11)	WALT understand and explore our online identity (2 sessions – childnet online identity pack 11-14 pack)
WALT keep our personal online information private	WALT what to do when something online feels unsafe	WALT what to do when something online feels unsafe	WALT establish the difference between good and bad information found online	WALT to recognise dangers online and understand how to report them including online sexual bullying (2	WALT to recognise dangers online and understand how to report them including online sexual bullying (2

				lessons – just a joke unit lessons 1 and 2)	lessons – just a joke unit lessons 2 and 3)
WALT what to do when something online feels unsafe	WALT understand email safety	WALT understand email safety	WALT understand email safety	WALT understand the positive and negative experiences that people have online including social media (2 sessions childnet, digital resilience)	WALT understand the positive and negative experiences that people have online including social media(2 sessions childnet, digital resilience)
	WALT understand our online identity (2 – 3 lessons childnet resources 3-7)	WALT understand our online identity (2 sessions – childnet online identity pack 3-7 years)	WALT understand our online identity (2 sessions – childnet online identity pack 7-11)		

**Autumn Term 2 WALTS
PROGRAMMING SKILLS**

Key stage one NC coverage:

- 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

Key stage two NC coverage:

- 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.

Year One We are treasure hunters	Year Two We are astronauts	Year Three We are programmers	Year Four We are makers	Year Five We are game developers	Year Six We are toy makers
WALT give and follow precise instructions	WALT Plan a sequence of instructions	WALT explore Scratch and its tools	WALT understand micro:bit, and how to create a program using Makecode.	WALT analyse games and plan our own	WALT recap micro:bit and MakeCode

WALT plan precise instructions called algorithms.	WALT Create test and debug programs in Scratch	WALT understand the key features of a good animation and create a storyboard	WALT read a micro:bit program and predict what it will do	WALT create a background, sprites and sound effects for a game	WALT understand input and output for micro:bit and other electronic devices
WALT understand input, output and program	WALT Work with output Scratch Jr	WALT create characters and dialogue in animations	WALT modify a micro:bit program	WALT create a prototype of a game	WALT design an interactive toy
WALT program a blue-bot	WALT Work with input Scratch Jr.	WALT animate characters by programming movements	WALT create a micro:bit program to simulate two rolling dice	WALT debug and improve games	WALT program the micro:bit as a controller
WALT make predictions	WALT understand repetition in Scratch Jr.	WALT add features to our animations	WALT plan micro:bit program	WALT test and improve games	WALT prepare equipment to make a toy
WALT sequence instructions	WALT create our own drawings in Scratch Jr.	WALT add sound, debug and improve our animations	WALT code and test micro:bit project	WALT write a set of instructions for a game and publish it online	WALT connect the microbit inputs and outputs to the toy.

Spring Term 1 WALTs
UNDERSTANDING ALGORITHMS AND DEBUGGING SKILLS

<p>Key stage one NC coverage:</p> <ul style="list-style-type: none"> Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions <p>Key stage two NC coverage:</p> <ul style="list-style-type: none"> Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Create and debug simple programs 					
Year One We are TV chefs	Year Two We are games testers	Year Three We are bug fixers	Year Four We are Software developers	Year Five We are Cryptographers	Year Six We are computational thinkers
WALT work out an algorithm for a common task	WALT work out an algorithm for a simple game	WALT identify errors in scratch script and fix it	WALT play and analyse educational games	WALT communicate information using semaphore	WALT find the shortest routes on maps
WALT use features on video recording equipment	WALT work out the algorithm for a two player game	WALT write an algorithm	WALT create a game that asks questions and gives feedback	WALT communicate messages using Morse code	WALT find the smallest number of coins to give change

WALT work together to film a video	WALT investigate algorithm	WALT identify and correct a multithread bug in Scratch.	WALT develop an educational game to include repetition	WALT use the caesar cipher to create and crack code	WALT understand random and linear search algorithms
WALT edit a video using commentary		WALT identify and correct a conceptual bug in Scratch	WALT improve the interface of a game	WALT develop knowledge of ciphers	WALT understand binary search algorithms
WALT discuss our work and decide on improvements		WALT identify and correct an arithmetical bug in scratch	WALT make games more difficult	WALT learn about the importance of passwords for online security	WALT understand selection sort algorithms
		WALT identify and correct a resource ug in scratch	WALT test and improve games, correcting any errors.	WALT understand how passwords are kept secure by encrypted websites	WALT understand quicksort algorithms

Spring Term 2 WALTs
USING SOFTWARE TO MANIPULATE, CREATE AND EDIT

Key stage one NC coverage:

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content

Key stage two NC coverage:

- 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

Year One We are digital artists	Year Two We are photographers	Year Three We are presenters	Year Four We are musicians	Year Five We are architects	Year Six We are publishers
WALT create colour blocks in they style of the artist Rothko	WALT understand what makes a good photograph	WALT Develop web based research skills	WALT Compose and edit tunes using Garage Band	WALT explore art galleries and identify their features	WALT plan a yearbook or magazine
WALT select colours and brushes to create patterns and shapes in the style of Kandinsky	WALT understand how a digital camera works	WALT Record a piece to camera	WALT Perform electronic music using pre recorded loops	WALT create a virtual structure using SketchUp	WALT plan a section of the yearbook

WALT to select brushed to create a simple drawing in the style of Picasso	WALT develop skills in taking effective photographs	WALT Edit a movie using static images and green screen	WALT Create our own music loops	WALT build a virtual gallery using SketchUp	WALT use software to create a section of the yearbook
WALT create and transform multiple layers in the style of Matisse	WALT evaluate our photographs critically.	WALT Give constructive feedback on recorded presentations.	WALT Create a multi track composition.	WALT add features to our virtual gallery	WALT assemble the pages of a yearbook
WALT create a layer over a photograph in the style of Julian Opie.	WALT use an app to edit and enhance our photos		WALT refine and perform our music	WALT create a virtual tour of the gallery	WALT assess and review our work
WALT draw grid patterns in the style of Mondrian					WALT review, edit and print our work

SUMMER 1

Key stage one NC coverage:

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content

Key stage two NC coverage:

- 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
- 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

Year One We are publishers	Year Two We are animators	Year Three We are co-authors	Year Four We are artists	Year Five We are web developers	Year Six We are connected
WALT plan a multimedia e-book, considering the audience	WALT understand what makes a good animation and how to plan an animation using a storyboard.	WALT plan the content for a wiki	WALT create simple tessellations using Inkscape	WALT understand the components of the school's network	WALT think about online safety and how to communicate respectfully on the internet
WALT select and import images for an e-book.	WALT understand how stop animations are made	WALT use Wikipedia to find information	WALT create more complex tessellations using Inkscape	WALT understand how messages are routed across a network	WALT research a topic for discussion
WALT to record audio commentary for an e-book.	WALT use Stop Motion Studio.	WALT create a class wiki	WALT program Islamic-style art in Scratch	WALT understand how web pages are written in HTML	WALT write a reasoned argument
WALT add text to an e-book.	WALT explore more features of Stop Motion Studio	WALT edit the class wiki pages	WALT create a repeating pattern in Scratch	WALT plan a website about online safety	WALT comment on others' posts responsibly and respectfully
WALT search for pictures from different sources and put them in an e-book.	WALT plan and record audio to accompany our animation	WALT edit content on Wikipedia	WALT use Inkscape to create art inspired by Bridget Riley	WALT create content collaboratively for a website	WALT check online information for reliability
WALT review and revise our e-books.	WALT review our animations.	WALT review the class wiki		WALT add links and media to our web pages	WALT discuss and write a blog about online bullying.

SUMMER 2 WALTs
COLLECTING, USING, PRESENTING AND ANALYSING DATA

Key stage one NC coverage: <ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content Key stage two NC coverage: <ul style="list-style-type: none"> 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 					
Year One We are detectives	Year Two We are zoologists	Year Three We are opinion pollsters	Year Four We are meteorologists	Year Five We are VR designers	Year Six We are AI developers
WALT explore a dataset and understand some data	WALT understand classification and branching databases	WALT plan a survey about a topic	WALT describe and measure the weather	WALT explore locations in virtual reality	WALT construct, train and refine a machine learning decision tree classifier
WALT explore a dataset in Popplet	WALT collect data using tick or tally charts	WALT develop questions for a survey	WALT record the weather	WALT create and upload a 360 photographs	WALT experiment with speech recognition systems
WALT create a tree for identification of data	WALT edit and enhance photographs	WALT create an online survey	WALT analyse the data collected	WALT use QR codes to link physical and digital content	WALT understand how a neural net operates
WALT input data into an online form in order to create a table	WALT produce basic charts using Google Sheets	WALT collect data from an online survey	WALT use the photo collection to make predictions about the weather	WALT navigate and interact with VR scenes in CoSpaces	WALT train a neural net to recognise images
WALT create filters to identify subsets of the data	WALT record information on a digital map	WALT analyse and evaluate data collected from a survey	WALT identify features of good weather and plan a forecast	WALT create a static scene in CoSpaces	WALT explore sentiment analysis
WALT search a spreadsheet database	WALT create a presentation summarising their findings	WALT present data collected from a survey to others.	WALT deliver a weather forecast	WALT program interactions with object in CoSpaces scenes	WALT program a self driving car