Computing

Progression Map

Level Expected at the End of EYFS

We have selected the Early Learning Goals that link most closely to the Computing National Curriculum.

Understanding the World (Technology)
Children recognise that a range of technology is used in places such as homes and schools. They 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; 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.

Computer Sciences		
Yr. 1/2	• understand what algorithms are; how they are implemented as programs on digital devices and that programs execute by following precise and unambiguous instructions	***For instance:*** Pupils learn to 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.
	• create and debug simple programs	Pupils learn to program an onscreen app using BeeBot to complete a set task and are able to debug their instructions when the turtle does not reach the intended destination.
	• use logical reasoning to predict the behaviour of simple programs	Pupils use a more complex turtle with standard units to navigate increasingly complex routes, and are able to debug their instructions when the turtle does not reach the intended destination. Extension - Pupils learn to use a simple graphical programming language using Scratch to navigate around the screen.

Digital Literacy		
Yr. 1/2	• use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies	***For instance:*** Pupils learn 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. Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish between someone who is real and someone who is not. Pupils are introduced to the basics of online searching. Pupils learn to explore websites and to say whether they like them or not and why.

Information Technology		
Yr. 1/2	• use technology purposefully to create, organise, store, manipulate and retrieve digital content	***For instance:*** Digital Publishing: Pupils learn to use basic word processing package and to write and illustrate a short story Presentation: Pupils learn to make simple presentations Graphics: Pupils learn to create a simple digital painting Animations: Pupils learn to make a simple animation for instance in Puppet Pals Media: Pupils learn to use digital cameras to take and then manipulate images and microphones for a purpose Working with data: Pupils learn to create and use a branching database Modelling: Pupils explore online simulations such as Build a Bug

Computer Sciences		
Yr. 3/4	• design write and debug programs that accomplish specific goals,…..solve problems by decomposing them in smaller parts	Pupils learn to use graphical programming language, using Scratch and Espresso Coding. Pupils learn to use graphical programming language, using Scratch and Espresso Coding.
	• use sequence, selection and repetition in programs	Pupils learn to use graphical programming language, using Scratch and Espresso Coding. Pupils learn to use graphical programming language, using Scratch and Espresso Coding.
	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Pupils write a simple algorithm, for instance to create a basic traffic light sequence. Using Espresso Coding the pupils create a simple program to control an onscreen icon. Pupils create a simple game using a graphical language using Espresso Coding.

Digital Literacy		
Yr. 3/4	• use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content	***For instance:*** Pupils are introduced to the basics of online searching, including how to use effective keywords. They also learn to conduct searches that provide them with the most helpful and relevant information.

Information Technology		
Yr. 3/4	• 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	***For instance:*** Digital Publishing: Pupils learn how to use software to create a wiki page using Google Docs. Presentations: Pupils learn to write and deliver a presentation on a given subject using a green screen and filming with an iPad. Graphics: Pupils learn how to take, adapt or create images to enhance or further develop their work. Sound and video: Pupils record and edit media to create a short sequence . Working with data: Pupils learn to search, sort and graph information.

Computer Sciences		
Yr. 5/6	• design, write and debug programs that accomplish specific goals; including controlling or simulating physical systems and solving problems by decomposing them into smaller parts	***For instance:*** Pupils write a simple algorithm, for instance to create a sequence using Espresso Coding. Pupils then progress to coding in HTML and Python.
	• use sequence, selection and repetition in programs; work with variables and various forms of input and output	Using Espresso Coding to create a program to control an onscreen icon using different variables, inputs and outputs. They are able to explain how their program works.
	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Pupils create a computer game, using a graphical language using Espresso Coding.

Digital Literacy		
Yr. 5/6	• use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content	***For instance:*** Pupils explore issues relating to online searching, including how to use effective keywords, using directories and subject categories, and how to analyse the usefulness and relevancy of the results. They learn to conduct searches that provide them with the most helpful and relevant information Pupils develop skills for evaluating websites, online information and advertising by rating the trustworthiness and usefulness of websites, and learning to identify the different types of online advertising.

Information Technology		
Yr. 5/6	• 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	***For instance:*** Presentations: Pupils learn to write and deliver a presentation, incorporating a range of media. Graphics: Pupils learn how to take, adapt or create images to enhance or further develop their work and incorporate it in a wider project. Sound and video: Pupils record and edit media to create a short sequence - extended by editing the final product in using video editing software. Working with data: Pupils learn to search, sort and graph information. Modelling: Pupils learn how to use a spreadsheet to model data.

eSafety

This scheme of work from the SWGfL, covers the National Curriculum Expectations for both KS1 and KS2:

KS1 • 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.
KS2 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	Lesson Title	Description
Yr. 1	**Going Places Safely**	Pupils learn that they can go to exciting places online, but they need to follow certain rules to remain safe.
	A-B-C Searching	Pupils search for pictures online by clicking on letters of the alphabet. They learn that directory sites with alphabetical listings offer one way to find things on the Internet.
	Keep It Private	Pupils learn that many websites ask for information that is private and discuss how to responsibly handle such requests.
	My Creative Work	Pupils are introduced to the concept of having ownership over creative work. They practice putting their name and date on something they produce
	Sending Email	Pupils explore how they can use email to communicate with real people within their schools, families, and communities.

	Lesson Title	Description
Yr. 2	**Staying Safe Online**	Pupils understand that they should stay safe online by choosing websites that are good for them to visit, and avoid sites that are not appropriate for them.
	Follow the Digital Trail	Pupils learn that the information they put online leaves a digital footprint or “trail.” This trail can be big or small, helpful or hurtful, depending on how they manage it.
	Screen Out the Mean	Pupils learn that children sometimes can act like bullies when they are online. They explore what cyberbullying means and what they can do when they encounter it.
	Using Keywords	Pupils understand that keyword searching is an effective way to locate information on the Internet. They learn how to select keywords to produce the best search results.
	Sites I Like	Pupils discuss criteria for rating informational websites and apply them to an assigned site. Pupils learn that all websites are not equally good sources of information.

	Lesson Title	Description
Yr. 3	**Powerful Passwords**	Pupils explore reasons why people use passwords, learn the benefits of using passwords, and discover strategies for creating and keeping strong, secure passwords.
	My Online Community	Pupils explore the concept that people can connect with one another through the Internet. They understand how the ability for people to communicate online can unite a community.
	Things for Sale	Pupils examine product websites and understand that the purpose of the site is to encourage buying the product. Pupils learn methods used to promote products on these sites.
	Show Respect Online	Pupils explore the similarities and differences between in-person and online communications, and then learn how to write clear and respectful messages.
	Writing Good Emails	Pupils learn how to communicate effectively by email, taking into account the purpose and audience of their message, and the tone they want to convey.

	Lesson Title	Description
Yr. 4	**Rings of Responsibility**	Pupils explore what it means to be responsible to and respectful of their offline and online communities as a way to learn how to be good digital citizens.
	Private and Personal Information	How can you protect yourself from online identity theft? Pupils think critically about the information they share online.
	The Power of Words	Pupils consider that they may get online messages from other kids that can make them feel angry, hurt, sad, or fearful. Pupils identify actions that will make them Upstanders in the face of cyberbullying.
	The Key to Keywords	Pupils learn strategies to increase the accuracy of their keyword searches and make inferences about the effectiveness of the strategies.
	Whose Is It, Anyway?	Pupils learn that copying the work of others and presenting it as one’s own is called plagiarism. They also learn about when and how it's ok to use the work of others.

	Lesson Title	Description
Yr. 5	**Strong Passwords**	Pupils learn how to create secure passwords in order to protect their private information and accounts online.
	Digital Citizenship Pledge	Pupils work together to outline common expectations in order to build a strong digital citizenship community. Each member of the class signs a We the Digital Citizens Pledge.
	You've Won a Prize!	Pupils learn what spam is, the forms it takes, and then identify strategies for dealing with it.
	How to Cite a Site	Pupils reflect on the importance of citing all sources when they do research. They then learn how to write bibliographical citations for online sources.
	Picture Perfect	Pupils learn how photos can be altered digitally. They will consider the creative upsides of photo alteration, as well as its power to distort our perceptions of beauty and health.

	Lesson Title	Description
Yr. 6	**Talking Safely Online**	Pupils learn that the Internet is a great place to develop rewarding relationships. But they also learn not to reveal private information to a person they know only online.
	Super Digital Citizen	Pupils explore Spider-Man's motto, "with great power comes great responsibility" through the lens of digital citizenship. They create comic strips show a digital superhero who witnesses an act of poor digital citizenship, and then helps resolve it.
	Privacy Rules	Pupils learn that children's websites must protect their private information. They learn to identify these secure sites by looking for their privacy policies and privacy seals of approval.
	What's Cyberbullying?	Pupils explore how it feels to be cyberbullied, how cyberbullying is similar to or different than in-person bullying, and learn strategies for handling cyberbullying when it arises.
	Selling Stereotypes	Pupils explore how the media can play a powerful role in shaping our ideas about girls and boys. They practice identifying messages about gender roles in two online activity zones for kids.

Topics Covered by Year Groups

	Topics ('We are…' units from Rising Stars)
Yr. 1	Basic Keyboard Skills
	e-Safety
	We are Treasure Hunters
	We are Collectors
	We are Painters
	Espresso Coding Year 1 – Introduction to Code / Instructions

	Topics
Yr. 2	e-Safety: Staying Safe Online
	Espresso Coding - Year 2 Starter Unit, Unit 2a Different sorts of input & Unit 2b Buttons and instructions.
	We are photographers
	We are astronauts
	We are zoologists
	We are researchers

	Topics
Yr. 3	Core Skills - MS Word; We are Programmers
	We are Presenters
	e-Safety: Staying Safe Online, Cyberbullying & Keywords
	Espresso Coding: Sequencing and Animation; Conditional Events
	We are Opinion Pollsters
	We are Communicators

	Topics
Yr. 4	Espresso Coding - Introduction to Variables; Repetition and Loops
	We are Toy Designers
	e-Safety
	Core Skills MS Word / We are co-authors (blog about the characters of Harry Potter)
	We are musicians
	We are meteorologists

	Topics
Yr. 5	Core Skills – MS Word, MS PowerPoint.
	We are Cryptographers
	e-Safety
	We are Artists
	Espresso Coding – Speed, Direction and Coordinates
	Espresso Coding – Random Numbers and Simulations

	Topics
Yr.6	Core Skills – MS Word, MS Excel
	e-Safety
	Espresso Coding – More complex variables and Object Properties
	Espresso Coding – HTML & Python
	We are Market Researchers
	We are App Planners