Curriculum Progression Document — Subject: Computing

The **National Curriculum** for **Computing** aims to ensure that all pupils:
- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
- are responsible, competent, confident and creative users of information and communication technology.

Key Stage 1	Key Stage 2
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.*	*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; recognize acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*

Area of Subject		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Online Safety	**National Curriculum Aims / Objectives**	*To identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*	*To use technology safely and respectfully, keeping personal information private.* *To identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*	*To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*	*To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.*
	Supporting Knowledge & Skills	Children can: a. describe what to do if they view content they think is inappropriate or upsetting e.g. know how to minimise a screen if they see something inappropriate then tell a trusted adult;	Children can: a. describe what to do if they view content they think is inappropriate or upsetting e.g. know how to minimise a screen if they see something inappropriate then tell a trusted adult;	Children can: a.	Children can: a.	Children can: a.	Children can: a.

		b. identify some risks presented by new technologies inside and outside school (e.g. online games, texting and cyber bullying); c. learn the importance of turning off power to save energy.	b. begin to evaluate online content by giving opinions about preferred sites; c. know that you can be diverted from a website through a link, advertisement or pop-up; d. know that some information is personal and should not be shared when communicating online (This could be discussed when sending a class email); e. understand that people online may not be who they say they are and may not be true friends;			

			f. learn to be respectful to other people online and their online work; g. begin to understand that their work says something about them self and to take proper ownership of it.					
Coding and Programming	**National Curriculum Aims / Objectives**	*To understand what algorithms are.* *To know how they are implemented as programs on digital devices.* *To know that programs execute by following precise and unambiguous instructions.*	*To create and debug simple programs.* *To use logical reasoning to predict the behaviour of simple programs.*	*To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.* *To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	*To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.* *To solve problems by decomposing them into smaller parts.* *To use logical reasoning to explain how some simple algorithms*	*To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.* *To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	*To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.* *To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	

					work and to detect and correct errors in algorithms and programs.	To use sequence, selection, and repetition in programs.	To work with variables and various forms of input and output.
	Supporting Knowledge & Skills	Children can: a. give precise instructions to, and respond to instructions from, other children involving movement around the room; b. describe what actions are needed for a particular task (not necessarily an IT one) and begin to use the word algorithm; c. begin to understand that sequence (order) is important when devising algorithms and	Children can: a. understand that a number of different algorithms will often all solve the same problem; b. predict what will happen in an algorithm or program which they may not have written themselves; c. understand why algorithms are useful for solving a wide range of problems and that we use algorithms every day; d. execute a program, observe the results, carefully spot	Children can: b.	Children can: a.	Children can: a.	Children can: a.

		programming devices; d. be able to predict what will happen in an algorithm or program which they may not have written themselves; e. understand why algorithms are useful for solving a wide range of problems and that we use algorithms every day; f. understand that programs respond to inputs to carry out actions.	errors and be able to debug them; e. write programs successfully to create movement on-screen.			
Digital Literacy 	**National Curriculum Aims / Objectives**	*To recognise common uses of information technology beyond school.* *To use technology purposefully to create, organise,*	*To use technology purposefully to create, organise, store, manipulate and retrieve digital content.*	*To know how computer networks can provide multiple services, such as the world wide web.* *To select, use and combine a variety*	*To 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,*	*To understand computer networks including the internet.* *To understand the opportunities computer networks offer for*	*To use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.*

		store, manipulate and retrieve digital content.		*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.*	*systems and content that accomplish given goals, presenting data and information.*	*communication and collaboration.* *To 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.*	*To 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.*
	Supporting Knowledge & Skills	Children can: a. talk about obvious uses of IT in and beyond school (i.e. things that clearly look like computer devices); b. understand some of the things that	Children can: a. select or create appropriate images / sound to add to work; b. add captions to photographs, graphics and sound; c. use templates to create simple			

		people do with computers at work and at home; c. show a growing awareness of things in and beyond the home that have some kind of computer in them (microwave, washing machine…); d. understand that most computers, tablets and phones are connected to the internet; e. recognises that any one of a range of digital devices can be considered a computer; f. log on to a computer network and	presentations for a purpose; d. word process text (use word lists to select text if necessary); e. navigate around text in a variety of ways (mouse, arrow keys; f. edit work in the light of their own discussions and observations; g. use a camera or camcorder to take a picture or record their work; h. demonstrate good control when using still and video cameras, understanding the need to frame an image or scene		

		understand the reasons for this; g. save (and successfully retrieve) their own work on a variety of devices; h. understand how to save and open work to and from a shared drive or web space (e.g. OneDrive or Drop Box). Understand the reasons for this; i. select or create appropriate images / sound to add to work. j. add captions to photographs, graphics and sound; k. use templates to create simple presentations for a purpose;	and keep the camera still; i. create a sequence of images which together form a short animation to illustrate a story; j. begin to discuss the quality of their; k. image and make decisions (e.g delete a blurred image).		

		l. word process text (use word lists to select text if necessary); m. navigate around text in a variety of ways (mouse, arrow keys; n. edit work in the light of their own discussions and observations; o. know that multimedia includes sound, text and graphics; p. know that ICT can be used to communicate ideas in different ways (e.g. text, images, tables, sound); q. author their own pages in an eportfolio			

		adding text and images; r. with support, write and send a short email from a class account; s. understand the different ways that messages can be sent, email, text letter, phone … and begin to consider the advantages of each.			
	National Curriculum Aims / Objectives				
	Supporting Knowledge & Skills				
	National Curriculum Aims / Objectives				
	Supporting Knowledge & Skills				
	National Curriculum Aims / Objectives				
	Supporting Knowledge & Skills				

	National Curriculum Aims / Objectives			
	Supporting Knowledge & Skills			
	National Curriculum Aims / Objectives			
	Supporting Knowledge & Skills			