



LONG TERM PLAN: Computing

Key stage 2

Children 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 programmes
- 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.

		<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 3	Topic/ No of lessons	Autumn - Stone Age	Spring -UK Geography	Summer - Romans
	Key vocabulary	Reporting, feedback, data, input, output, program, debugging	Reporting, feedback, data, input, output, program, debugging, logical reasoning	Reporting, feedback, data, input, output, program, debugging, prediction
	Key knowledge and skills	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 		
		<p><u>Digital Literacy/Creativity</u></p> <p>-I can talk about my work and make improvements to solutions based on feedback received</p> <p>-I can confidently recognise different types of data (e.g., text, number)</p> <p>-I can use a range of input and output devices (keyboard, mouse, touchscreen, microphone, screen, printout, video, audio etc.)</p> <p>-I can collect, organise, and present data and information in a digital context.</p> <p>-I can create digital content to achieve a given goal through combining software packages.</p> <p>-I can confidently share my experiences of technology in school and beyond the classroom.</p>	<p><u>Computer Science</u></p> <p>-I understand how programs instruct the computer what to do.</p> <p>-I can detect and correct errors in programs (debugging)</p> <p>-I can use logical reasoning to predict the behaviour of programs.</p> <p>-I can use loops and mathematical operators within programs.</p>	
	<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans Focus: Media balance and wellbeing</p>	<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans Focus: Digital footprint and identity</p>	<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans</p>	

	<p>Title: Device-free moments</p> <p>-Recognise the ways in which digital devices can be distracting.</p> <p>Online safety (1 lesson) Common sense lesson plans</p> <p>Focus: Privacy and security</p> <p>Title: That's private</p> <p>-Recognise the kind of information that is private.</p> <p>-Understand that they should never give out private information online.</p>	<p>Title: Digital Trails</p> <p>- Learn that the information they share online leaves a digital footprint or "trail"</p> <p>Online safety (1 lesson) Common sense lesson plans</p> <p>Focus: Relationships and communication</p> <p>Title: Who is in your online community?</p> <p>- Compare and contrast how they are connected to different people and places, in person and on the internet</p> <p>-Demonstrate an understanding of how people can connect on the internet.</p>	<p>Focus: Cyber bullying, digital drama and hate speech</p> <p>Title: Putting a stop to online meanness</p> <p>-Identify ways to respond to mean words online, using S-T-O-P</p> <p>Online safety (1 lesson) Common sense lesson plans</p> <p>Focus: News and media literacy</p> <p>Title: Let's give credit!</p> <p>-Learn how to give credit in their schoolwork for content they use from the internet.</p>
Skills to be a Computing Expert	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills.
Pre and post assessment	<p>WORD checklist-completed independently to assess understanding. Teacher to pick up gaps to work on together. Repeated for the post assessment</p>	<p>Assess using SAM LABS their understanding of coding and algorithms.</p>	<p>Assess typing skills using typing test and compare scores for post assessment at the end of term</p>
Links with other subjects	<p>History: (Stone Age) Digital video, imagery creating cave paintings</p>	<p>Geography: (The UK) Creating videos, PP, iMovie</p>	<p>History: (Romans) Creating roman recipe on Publisher, creating video of recipe on greenscreen</p>
Possible resources/websites	<p>Purple mash, SCRATCH PP and teaching notes, Bee Bots and floor mat</p>	<p>Purple mash, pic collage app, iMovie, SAM LABS</p>	<p>Publisher, SAM LABS, Purple mash, iMovie/green screen</p>

		<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 4	Topic/ No of lessons	Autumn- Ancient Egyptians	Spring- Italy	Summer- Local study of Anfield Plain
	Key vocabulary	Reporting, feedback, data, input, output, program, debugging	Reporting, feedback, data, input, output, program, debugging, logical reasoning	Reporting, feedback, data, input, output, program, debugging, prediction
	Key knowledge and skills	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 		
		<p><u>Digital Literacy/Creativity</u></p> <ul style="list-style-type: none"> -I can create appropriate digital content to achieve a given goal through combining software packages to communicate with a wider audience. -I can make appropriate improvements to solutions based on feedback received and can comment on the success of the solution. -I can use filters or single criteria searches for information. -I understand the difference between data and information. -I know why sorting data in a table can improve searching for information 	<p><u>Computer Science</u></p> <ul style="list-style-type: none"> -I can create programs that implement algorithms to achieve given goals. -I can design algorithms that use repetition. -I can declare and assign variables. -I can use diagrams to express solutions. -I can use logical reasoning to predict outputs. 	
		<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans Focus: media balance and wellbeing Title: your rings of responsibility</p>	<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans Focus: Digital footprint and identity Title: This is me</p>	<p>E-Safety Focus Online safety (1 lesson) Common sense lesson plans</p>

	<p>-Identify examples of online responsibilities to others Online safety (1 lesson) Common sense lesson plans Focus: Privacy and security Title: Password power up -Define the term "password" and describe a password's purpose.</p>	<p>-Reflect on the most important parts of their unique identity. Online safety (1 lesson) Common sense lesson plans Focus: relationships and communication Title: What makes a strong online community? - Create and pledge to adhere to shared norms for being in an online community.</p>	<p>Focus: Cyberbullying, digital drama and hate speech Title: The power of words -Decide what kinds of statements are OK to say online and which are not. Online safety (1 lesson) Common sense lesson plans Focus: News and media literacy Title: Is seeing believing? -Identify different reasons why someone might alter a photo or video.</p>
Skills to be a Computing Expert	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills.
Pre and post assessment	<p>Word self-assessment grid to assess understanding and teacher to spend time during lessons to fill the gaps of basic skills. Typing skills assessed every term.</p>	<p>Typing skills assessed every term.</p>	<p>Typing skills assessed every term.</p>
Links with other subjects	<p>History: (Egyptians) Annotating images and using materials from museum visit</p>	<p>Geography: (Italy) Creating postcard from Italy and using greenscreen to create a tourism video.</p>	
Possible resources/websites	<p>SCRATCH, Word, ipads</p>	<p>Pic collage, purple mash, ipads</p>	<p>Pic collage, ipads, purple mash, SAM LABS</p>

		<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 5	Topic/ No of lessons	Autumn -Victorians	Spring - Rainforests	Summer - Mayans
	Key vocabulary	Reporting, feedback, data, input, output, program, debugging	Reporting, feedback, data, input, output, program, debugging, logical reasoning	Reporting, feedback, data, input, output, program, debugging, prediction
	Key knowledge and skills	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 		
		<p><u>Digital Literacy/Creativity</u></p> <ul style="list-style-type: none"> -I recognise the audience when designing and creating digital content. -I can make judgements about digital content when evaluating it for a given audience. -I can show an awareness of tasks best completed by humans or computers. -I can use criteria to evaluate the quality of solutions and can identify improvements making some refinements to the solution. -I understand the difference between hardware and software and their roles within a computer system. -I understand the potential of information technology for collaboration when computers are networked. -I know that computers collect data from various input devices. -I can confidently use filters or single criteria searches for information. 	<p><u>Computer Science</u></p> <ul style="list-style-type: none"> -I can declare and assign variables. -I can use a 'loop' (e.g., 'until') and a sequence of selection statements in programs, including an 'if', 'then' and 'else' statement. -I can design solutions by decomposing a problem. -I can recognise that different solutions exist for the same problem. 	
	E-Safety Focus Online safety (1 lesson) Common sense lesson plans	E-Safety Focus Online safety (1 lesson) Common sense lesson plans	E-Safety Focus	

	<p>Focus: Media balance and wellbeing Title: What makes a healthy media choice? -Learn the "What? When? How Much?" framework for describing their media choices. Online safety (1 lesson) Common sense lesson plans Focus: Private and personal information Title: What information about you is ok to share online? -Identify the reasons why people share information about themselves online. -Explain the difference between private and personal information.</p>	<p>Focus: Our online tracks Title: How does our online activity affect the digital footprints of ourselves and others? - Define the term "digital footprint" and identify the online activities that contribute to it. Online safety (1 lesson) Common sense lesson plans Focus: Relationships and communication Title: How can I be positive and have fun whilst playing games online? -Describe the positives and negatives of social interaction in online games.</p>	<p>Online safety (1 lesson) Common sense lesson plans Focus: Cyberbullying and digital drama Title: Be a super digital citizen -Reflect on the characteristics that make someone an upstanding digital citizen. Online safety (1 lesson) Common sense lesson plans Focus: News and media literacy Title: What rights and responsibilities do you have as a creator? -Define "copyright" and explain how it applies to creative work.</p>
Skills to be a Computing Expert	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills.
Pre and post assessment	<p>Word self-assessment grid to assess understanding and teacher to spend time during lessons to fill the gaps of basic skills. Typing skills assessed every term.</p>	<p>Typing skills assessed every term. PP self-assessment grid for teacher to then teach to fill the gaps</p>	<p>Typing skills assessed every term.</p>
Links with other subjects	<p>History: (Victorians) Create videos in style of Victorians and looking at Census data</p>	<p>Geography: (Rainforests) Editing photos, creating PP, using video to create a video detailing the issues in the rainforest</p>	<p>Science: SAM LABS Air resistance and making something work effectively</p>

Possible resources/ websites	Word, spreadsheet, morpho app and SAM LABS	Ipads, PP, hour of code	SAM LABS, typing websites
------------------------------	--	-------------------------	---------------------------

		<u>Autumn</u>	<u>Spring</u>	<u>Summer</u>
Year 6	Topic/ No of lessons	Autumn- Ancient Greeks	Spring	Summer
	Key vocabulary	Reporting, feedback, data, input, output, program, debugging	Reporting, feedback, data, input, output, program, debugging, logical reasoning	Reporting, feedback, data, input, output, program, debugging, prediction, presenting, documenting
	Key knowledge and skills	<p>National Curriculum Pupils should be taught to:</p> <ul style="list-style-type: none"> 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. 		
		<p><u>Digital Literacy/Creativity</u></p> <p>-I can use criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions. -I can analyse and evaluate data and information and recognises that poor quality data leads to unreliable results, and inaccurate conclusions. -I can perform more complex searches for information (e.g., 'AND' 'OR', 'NOT').</p>	<p><u>Computer Science</u></p> <p>-I understand the difference between and appropriately uses 'if', 'then' and 'else' statements. -I can use a variable and relational operator (< = >) within a loop to govern termination. -I can design, write and debugs modular programs (program divided into sub parts) using procedures.</p>	

		<p>-I understand why and when computers are used and understand the main functions of the operating system. -I know the difference between physical, wireless, and mobile networks.</p>	<p>-I can combine a group of instructions into a single named unit (procedural abstraction).</p>	
		<p><u>E-Safety Focus</u> <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: Media balance and wellbeing Title: What does media balance mean for me? -Consider what "media balance" means and how it applies to them. <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: Privacy and security Title: What is clickbait and how you can avoid it? -Use strategies for avoiding clickbait.</p>	<p><u>E-Safety Focus</u> <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: Digital footprint and identity Title: How gender stereotypes shape our experiences online -Describe how gender stereotypes can lead to unfairness or bias. <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: Relationships and communication Title: Digital friendships -Compare and contrast different kinds of online-only friendships</p>	<p><u>E-Safety Focus</u> <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: Cyberbullying and digital drama Title: What is cyberbullying and what can they do to stop it? -Identify strategies for dealing with cyberbullying and ways they can be an upstander for those being bullied. <u>Online safety (1 lesson) Common sense lesson plans</u> Focus: News and media literacy Title: What are the important parts of an online news article? -Understand the purposes of different parts of an online news page.</p>
<p>Skills to be a Computing Expert</p>		<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills. 	<p>Skills needed to be a Computing Expert include:</p> <ul style="list-style-type: none"> • Basic ICT skills • Maths skills • Be digitally literate • Be able to solve problems • Be creative in the solution of problems and in the development of design. • Manage resources and time • Basic keyboard skills.
<p>Pre and post assessment</p>		<p>Word self-assessment grid to assess understanding and teacher to spend time during lessons to fill the gaps of basic skills. Typing skills assessed every term.</p>	<p>Typing skills assessed every term. PP self-assessment grid for teacher to then teach to fill the gaps</p>	<p>Typing skills assessed every term.</p>

	Links with other subjects	History: (Ancient Greeks) Creating PP, costing a trip to Greece	Geography Editing images of maps to show all geography learnt	PHSCE Linking to year book and memories of time in school history of their own story
	Possible resources/websites	Scratch, comic book website, spreadsheets, typing websites	Images, PP, Word, Hour of code, SCRATCH	SAM LABS, PP, typing websites