

Topics

	Autumn	Spring	Summer
R	Throughout the year, including: Online safety (continuous) Using interactive whiteboard		
1	Online safety - general principles and exploring Purple Mash Grouping and Sorting	Magnets Using iPad, apps and talking tins Finding information	Using Bee-Bots Imaginative play with a range of technology e.g. telephones
2	Online safety continuous Creating Pictures Effective Searching	Online safety continuous Coding Presenting ideas	Online safety continuous Questioning (binary trees/databases) Spreadsheets
3	Online safety continuous Coding Spreadsheets	Online safety continuous Presenting Spreadsheets Databases	Online safety continuous Simulations Graphing
4	Online safety continuous Coding Spreadsheets	Online safety continuous Interactive logos Animation	Online safety continuous Animation cont. Effective internet searching
5	Online safety continuous Coding Online safety – focus unit	Online safety continuous Word processing Spreadsheets Databases	Online safety continuous Game creator 3D Modelling
6	Online safety continuous Blogging Coding	Online safety continuous Spreadsheets Networks	Online safety continuous Text adventures (story-based adventure game)

Adapting the curriculum for pupils with SEND in Computing

- Adaptive teaching takes place.
- For sensory or physically impaired pupils, computing learning may necessitate enlarging texts, using clear fonts, using visual overlays, or audio description of images.
- Dyslexic pupils may benefit from well-spaced print.
- Teachers identify and break down the components of the subject curriculum into manageable chunks for pupils who find learning more difficult, particularly those with cognition and learning needs. These may be smaller 'steps' than those taken by other pupils to avoid overloading the working memory.
- A variety of additional scaffolds may be used in lessons, such vocabulary banks, additional visual stimuli or adult support.

Predominant Area of Computing*		
	Computer Science	 Information Technology
		 Digital Literacy

*Most units will include aspects of all strands.

Progression		EYFS	Year 1	Year 2
Computer Science	Substantive Knowledge	<ul style="list-style-type: none"> • Know how to follow simple instructions • Put pictorial instructions into sequential order • Use Beebots and talk about their discoveries 	Lego Builders/Maze Explorers/Coding <ul style="list-style-type: none"> • Be able to know explain that an algorithm is a set of instructions to complete a task. • Know how to work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash • Know how to write their own simple algorithm, e.g. Colouring in a Bird activity • Be able to make good guesses of what is going to happen in a program. For example, where the turtle might go. 	Coding <ul style="list-style-type: none"> • Be able to explain that an algorithm is a set of instructions to complete a task. • Show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code • Know how to create a simple program that achieves a specific purpose. • Be able to identify and correct some errors, e.g. Debug Challenges
	Disciplinary Knowledge		<ul style="list-style-type: none"> • Understand what algorithms are • Understand programs execute by following precise and unambiguous instructions • Create and debug simple programs. 	<ul style="list-style-type: none"> • Understand what algorithms are • Understand programs execute by following precise and unambiguous instructions • Create and debug simple programs.
Information	Substantive Knowledge	<ul style="list-style-type: none"> • Know and recognise computers at home and at school 	Grouping & Sorting/Pictograms/Animated stories/Coding <ul style="list-style-type: none"> • Learn how to sort pictures/text 	Spreadsheets/Presenting ideas/ Questioning/ Creating pictures <ul style="list-style-type: none"> • Learn how to organise data – for example,

		<p>Be able to recognise and talk about familiar technology (e.g. apps, websites and online services)</p> <ul style="list-style-type: none"> Learn how to interact with computers and technology as appropriate 	<ul style="list-style-type: none"> Know how to add pictures to a programme such as 2Create a story Learn how to change content on a file Be able to name and Save my work 	<p>using a database such as 2Investigate.</p> <ul style="list-style-type: none"> Be able to find data using specific searches – for example, using 2Investigate Use programs to organise information Name, save and find my work
	Disciplinary Knowledge		<ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content 	<ul style="list-style-type: none"> Use technology purposefully to create, organise, store, manipulate and retrieve digital content
Digital Literacy	Substantive Knowledge	<ul style="list-style-type: none"> Know they can say 'no' to things that make them sad, upset or embarrassed I can recognise some ways in which the internet can be used to communicate and give examples of how I (might) use it I can describe ways that some people can be unkind online and give examples of how this can make others feel I can identify devices I could use to access information on the internet. Can describe the people I can trust and can share this with; I can explain why I can trust them. 	<ul style="list-style-type: none"> Understand what is meant by technology and can identify a variety of examples both in and out of school. Make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. <p>Online Safety</p> <ul style="list-style-type: none"> Understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash. 	<p>Online Safety</p> <ul style="list-style-type: none"> Retrieve digital content using a search engine. Make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs. Know the implications of inappropriate online searches. Begin to understand how things are shared electronically
	Disciplinary Knowledge		<ul style="list-style-type: none"> Know what personal information is and what I should not reveal online Explain the importance of being kind online 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. 	<ul style="list-style-type: none"> Know that we should respect people online in the same way we do in real life Know what constitutes positive and negative online communication 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

		Year 3	Year 4	Year 5	Year 6
Computer Science	Substantive Knowledge	Coding <ul style="list-style-type: none"> Make a real-life situation into an algorithm for a program. Design an algorithm carefully thinking about what I want it to do and how I can turn it into code. Identify an error in my program Experiment with timers in my programs 	Coding/Logos <ul style="list-style-type: none"> Make a real-life situation into an algorithm for a program. Design an algorithm carefully thinking about what I want it to do and how I can turn it into code. Identify an error in my program Experiment with timers in my programs Use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths Use variables within my program and know how to change the value of variables Understand that network and communication components can be found in many different devices which allow them to join the internet. 	Coding/Game creator/Online Safety <ul style="list-style-type: none"> Make more complex real-life problems into algorithms for a program. Test and debug my programs as I work. Convert (translate) algorithms that contain sequence, selection and repetition into code that works. Use sequence, selection, repetition, and some other coding structures in my code. Organise my code carefully for example, naming variables Use logical methods to identify the cause of any bugs Know the importance of computer networks and how they help solve problems and enhance communication. Recognise the main dangers that can be perpetuated via computer networks. Explain what personal information is and know strategies for keeping this safe. Use the most appropriate form of online communication according to the digital content. 	Coding/Networks/Text Adventures <ul style="list-style-type: none"> Turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. Include sequence, selection and repetition into code and their own designs Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. understand and explain the difference between the internet and the World Wide Web. Know what a WAN and LAN are and can describe how they access the internet in school.
	Disciplinary Knowledge	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals Solve problems by decomposing them into smaller parts Use sequence, selection and 	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals Solve problems by decomposing them into smaller parts Use sequence, selection and 	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals solve problems by decomposing them into smaller parts. Use sequence, selection and 	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals solve problems by decomposing them into smaller parts. Use sequence, selection and

		repetition in programs <ul style="list-style-type: none"> Detect and correct errors in algorithms and programs. 	repetition in programs <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 	repetition in programs <ul style="list-style-type: none"> work with variables 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. 	repetition in programs <ul style="list-style-type: none"> work with variables 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.
Information Technology	Substantive Knowledge	Spreadsheets/ Presenting/ Simulations/ Graphing <ul style="list-style-type: none"> Children carry out simple searches to retrieve digital content using a search engine Create purposeful (appropriate) content present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). Consider what the most appropriate software to use when given a task by my teacher. General Collect, analyse, evaluate and present data and information using a selection of software (e.g. 2Graph) Consider what software is most appropriate for a given task.	Spreadsheets/Animation/Effective Internet Searching <ul style="list-style-type: none"> Know and understand the purpose of a search engine and the main features within it. Know how to look at information on a webpage and make predictions about the accuracy of information contained within it. Create and improve my solutions to a problem based on feedback Review solutions that others have created, using a checklist of criteria. Work collaboratively to create content and solutions. 	Word processing/Databases/3D modelling/Online Safety <ul style="list-style-type: none"> Be able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution Know how to review solutions from others. Be able to collaboratively create content and solutions using digital features within software such as collaborative mode. Know how to Search with greater complexity for digital content when using a search engine. Explain in some detail how credible a webpage is and the information it contains. 	Blogging/Spreadsheets/Networks <ul style="list-style-type: none"> Use filters when searching for digital content. Explain in detail how accurate and reliable a webpage and its content is Consider the intended audience carefully when I design and make digital content. Design and create their own online blogs. Use criteria to evaluate the quality of thier own and others digital solutions, suggesting refinements
	Disciplinary Knowledge	<ul style="list-style-type: none"> Use search technologies effectively Appreciate how results are selected and ranked, and be discerning in evaluating digital content 	<ul style="list-style-type: none"> Use search technologies effectively Appreciate how results are selected and ranked, and be discerning in evaluating digital content create a range of programs, systems and content that accomplish given goals, 	<ul style="list-style-type: none"> Use search technologies effectively Appreciate how results are selected and ranked, and be discerning in evaluating digital content create a range of programs, systems and content that accomplish given goals, 	<ul style="list-style-type: none"> Use search technologies effectively Appreciate how results are selected and ranked, and be discerning in evaluating digital content create a range of programs, systems and content that accomplish given goals,

			including collecting, analysing, evaluating and presenting data and information.	including collecting, analysing, evaluating and presenting data and information.	including collecting, analysing, evaluating and presenting data and information.
Digital Literacy	Substantive Knowledge	Online Safety <ul style="list-style-type: none"> • Demonstrate the importance of having a secure password and not sharing this with anyone else. • Explain the negative implications of failure to keep passwords safe and secure. • Understand the importance of staying safe and the importance of their conduct when using familiar communication tools • Know more than one way to report unacceptable content and contact 	Online Safety <ul style="list-style-type: none"> • Children can explore key concepts relating to online safety using concept mapping • Help others to understand the importance of online safety. • Children know a range of ways of reporting inappropriate content and contact. 	Online Safety <ul style="list-style-type: none"> • Have a secure knowledge of common online safety rules • Apply this by demonstrating the safe and respectful use of a few different technologies and online services. • Implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others. 	Online Safety <ul style="list-style-type: none"> • Demonstrate the safe and respectful use of a range of different technologies and online services. • identify more discreet inappropriate behaviours through developing critical thinking • Recognise the value in preserving their privacy when online for their own and other people's safety
	Disciplinary Knowledge	<ul style="list-style-type: none"> • Use technology safely, respectfully and responsibly • recognise acceptable/unacceptable behaviour • identify a range of ways to report concern about content and contact. 	<ul style="list-style-type: none"> • Use technology safely, respectfully and responsibly • recognise acceptable/unacceptable behaviour • identify a range of ways to report concern about content and contact. 	<ul style="list-style-type: none"> • Understand the importance of strong passwords • Use technology safely, respectfully and responsibly • recognise acceptable/unacceptable behaviour • identify a range of ways to report concern about content and contact. 	<ul style="list-style-type: none"> • Explain how they are developing an online reputation which will allow others to form an opinion of them • Understand the importance of strong passwords • Use technology safely, respectfully and responsibly • recognise acceptable/unacceptable behaviour • Identify a range of ways to report concern about content and contact.

Main strands of learning – National Curriculum

Computer Science		Digital Literacy	Information Technology
Key Stage 1	<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 Create and debug simple programs Use logical reasoning to predict 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Use technology purposefully to create, organise, manipulate and retrieve digital content Recognise common uses of information technology beyond school
Key Stage 2	<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 	<ul style="list-style-type: none"> Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact 	<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 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