

Computing Overview and Progression

Disciplinary Knowledge							
	Early years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Know how to follow simple instructions. Put pictorial instructions into sequential order.	Understand what algorithms are Understand programs execute by following precise and unambiguous instructions Create and debug simple programs.	Understand what algorithms are Understand programs execute by following precise and unambiguous instructions Create and debug simple programs.	Design, write and debug programs that accomplish specific goals Solve problems by decomposing them into smaller parts Use sequence, selection and repetition in programs Detect and correct errors in algorithms and programs.	Design, write and debug programs that accomplish specific goals Solve problems by decomposing them into smaller parts Use sequence, selection and repetition in 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	Design, write and debug programs that accomplish specific goals solve problems by decomposing them into smaller parts. Use sequence, selection and repetition in programs 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.	Design, write and debug programs that accomplish specific goals solve problems by decomposing them into smaller parts. Use sequence, selection and repetition in programs 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	Be able to recognise and talk about familiar technology (e.g. apps, websites and online services).	Identify the parts of technology and the different uses for it. Identify and use a range of tools to create an image. Use a computer to write and identify the change in the text. Combine four direction commands to make sequences, using the words forwards and backwards. Use an algorithm to create a command on a program. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Recognise and identify the uses and features of information technology, and how it helps us. Use a digital device to take a photograph and edit. Use a computer to create a musical pattern and sound. Describe a series of instructions as a sequence creating a program and editing using debugging. Explain that a sequence of commands has a start and an outcome. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Identify input and output devices and how they are connected. Explain that animation is a sequence of drawings or photographs and how to create one. Recognise how text and images convey information and consider how they can be used for different purposes. Explore a new programming environment and recognise that a sequence of commands can have an order. Develop my program by adding features	Identify how networks physically connect to other networks including the World Wide Web. Identify that sound can be recorded and know it can be edited using software. Explain that the composition of digital images can be changed and used for a range of purposes. Create a program that uses count-controlled loops to produce a given outcome. Create a project that includes repetition including infinite loops and count-controlled loops.	Explain that computers can be connected together to form systems and recognise why the search engines results are important. Using a digital device to capture video using a range of techniques and editing. Create a vector drawing by combining shapes and different tools. Control a simple circuit connected to a computer. Create a program that uses selection, using algorithms.	Recognise how data is transferred across the internet, by helping others to work together and to communicate. Review and plan the features of a web page Recognise that computers can work in 3D and identify that it can be modified and edited. Create a game/ project by using variables. Design a project that uses inputs and outputs on a controllable device.
Digital Literacy	Know they can say 'no' to things that make them sad, upset or embarrassed. I can identify devices I could use to access information on the internet. Can describe the people I can trust and can share	Create rules for using technology responsibly. 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	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	Use technology safely, respectfully and responsibly recognise acceptable/ unacceptable behaviour Identify a range of ways to report concern about content and contact.	Use technology safely, respectfully and responsibly recognise acceptable/ unacceptable behaviour identify a range of ways to report concern about content and contact.	Understand the importance of strong passwords Use technology safely, respectfully and responsibly recognise acceptable/ unacceptable behaviour identify a range of ways to	Recognise the implications of linking to content owned by other people - consider copyright. Explain how they are developing an online reputation which will allow others to form an opinion of them Understand the importance of strong passwords

Computing Overview and Progression

	this with; I can explain why I can trust them.	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.	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			report concern about content and contact.	Use technology safely, respectfully and responsibly recognise acceptable/unacceptable behaviour Identify a range of ways to report concern about content and contact.
Data and information		Describe objects in different ways and compare groups of objects	Explain that we can present information using a computer To recognise that objects and data can be represented as pictures by entering and presenting using different formats	Explain why it is helpful for a database to be well structured and explain how it can be ordered and organised. Create an individualised database.	Explain that data gathered over time can be used to answer questions and use a data logger collects 'data points' from sensors over time and analyse it.	Explain that tools can be used to select specific data and use computer programs to compare data visually.	To explain that formulas can be used to produce calculated data and apply formulas to data

Substantive Knowledge							
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Information technology	Know and recognise computers at home and at school Be able to recognise and talk about familiar technology (e.g. apps, websites and online services) Learn how to interact with computers and technology as appropriate	Learn how to sort pictures/text Know how to add pictures to a programme Learn how to change content on a file Be able to name and Save my work	Learn how to organise data – for example, using a database such as 2Investigate. Be able to find data using specific searches Use programs to organise information Name, save and find my work Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Children carry out simple searches to retrieve digital content using a search engine Create purposeful (appropriate) content present data and information using different software Consider what the most appropriate software to use when given a task by my teacher. Collect, analyse, evaluate and present data and information using a selection of software Consider what software is most appropriate for a given task.	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.	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.	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 their own and others digital solutions, suggesting refinements

Computing Overview and Progression

Digital literacy		<p>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> <p>Online Safety 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.</p>	<p>Online Safety - 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</p>	<p>Online Safety 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</p>	<p>Online Safety 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.</p>	<p>Online Safety 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.</p>	<p>Online Safety 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</p>
Data and information		To label objects and answer questions about groups of objects	Understand what a pictogram and tally chart is and what they show	Create questions with yes/no answers to gather information and data	Use a digital device to collect data automatically using sensors.	Use a form to record information and compare paper and computer-based databases	Create and build a data set in a spreadsheet.