



Computing Curriculum - Federation

Essential Knowledge

National Curriculum: Purpose of Study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

National Curriculum Aims

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

National Curriculum

Key Stage 1

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

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

'Switched On' Computing Scheme followed: Rising Stars

	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u>
Year 1	1.1 'We are Treasure Hunters' Using Programmable toys	1.2 'We are TV Chefs' Filming the steps of a recipe	1.3 'We are Painters' Illustrating an eBook Internet safety week	1.4 'We are Collectors' Finding images using the web	1.5 'We are Storytellers' Producing a talking book	1.6 'We are Celebrators' Creating a card electronically
Year 2	2.1 'We are Astronauts' Programming on screen	2.2 'We are Game Testers' Exploring how computer games work	2.3 'We are Photographers' Taking, selecting and editing digital images Internet safety week	2.4 'We are Researchers' Researching a topic	2.5 'We are Detectives' Communicating clues	2.6 'We are Zoologists' Recording Bug Hunt data
Year 3	3.1 'We are Programmers' Programing an animation	3.2 'We are Bug Fixers' Finding and correcting bugs in programs	3.3 'We are Presenters' Videoing a performance Internet safety week	3.4 'We are Network Engineers'	3.5 'We are Communicators' Communicating safely on the internet	3.6 'We are Opinion Pollsters' Collecting and analysing data

				Exploring computer networks, including the internet		
Year 4	4.1 'We are Software Developers' Developing a simple educational game	4.2 'We are Toy Designers' Prototyping an interactive toy	4.3 'We are Musicians' Producing digital music Internet safety week	4.4 'We are HTML Editors' Editing and writing HTML	4.5 'We are Co-authors' Producing a wiki	4.6 'We are Meteorologists' Presenting the weather
Year 5	5.1 'We are Game Developers' Developing an interactive game	5.2 'We are Cryptographers' Cracking codes	5.3 'We are Artists' Fusing geometry and art Internet safety week	5.4 'We are Web developers' Creating a web page about cyber safety	5.5 'We are Bloggers' Sharing experiences and opinions	5.6 'We are Architects' Creating a virtual space
Year 6	6.1 'We are App/ Web Page Planners' Planning the creation of a mobile app	6.2 'We are Project Managers' Developing Project Management Skills	6.3 'We are Market Researchers' Researching the app/ web page market Internet safety week	6.4 'We are Interface Designers' Designing an interface for an app/ web page	6.5 'We are App/ Web Page Developers' Developing a simple app/ web-page	6.6 'We are Marketers' Creating video and web copy for the app/ web page –

Year 2

National Curriculum Subject Content:

- 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

Units of Work					
1	2	3	4	5	6
2.1 'We are Astronauts'	2.2 'We are Game Testers'	2.3 'We are Photographers'	2.4 'We are Researchers'	2.5 'We are Detectives'	2.6 'We are Zoologists'
Programming on screen	Exploring how computer games work	Taking, selecting and editing digital images	Researching a topic	Communicating clues	Recording Bug Hunt data
<p>Predict the outcomes of a set of instructions</p> <p>Use right angle turns</p> <p>Use the repeat commands</p> <p>Test and amend a set of instructions</p> <p>Write a simple program and test it</p> <p>Implement algorithms on floor turtle</p> <p>Predict what the outcome of a simple program will be</p> <p>Word process a piece of text</p> <p>Insert/delete a word using the mouse and arrow keys</p> <p>Understand they must let their teacher know if they see inappropriate material when on the web.</p> <p>Children know that safe search filters are in place and school internet access is filtered.</p> <p>Respectful of rules for using digital equipment when out of the classroom</p>	<p>Understand computer games are made up of precise instructions for the computer to follow</p> <p>Understand that computer programmers will have implemented many algorithms</p> <p>Use logical reasoning to make predictions about what happens next</p> <p>Suggest ways in which simple computer games could be improved</p> <p>Children are aware of age restrictions on games and that these should be kept to.</p> <p>Children aware that comments on games e.g. Minecraft are not moderated before they appear</p>	<p>Take photos using a digital camera, tablet or smartphone</p> <p>Review and reject photos</p> <p>Apply adjustments and effects to digital photos</p> <p>Import photos to a computer or the network</p> <p>Select their favourite photos for inclusion in a shared portfolio</p> <p>Understand they must let their teacher know if they see inappropriate material when on the web.</p> <p>Children are aware of where to go for help if concerned about content or contact.</p> <p>Children know that once images are online, it's impossible to control what happens to them.</p> <p>Show an understanding of what is acceptable / unacceptable to photograph, ie not a good idea to take or share if can be identified</p> <p>Children know that safe search filters are in place and school internet access is filtered.</p>	<p>Add questions to a mind map</p> <p>Add information from independent research to a mind map</p> <p>Locate information from one or more relevant websites</p> <p>Search for information on a small number of sites using a custom search engine</p> <p>Know how to report concerns over content when searching the web</p> <p>Create a short presentation summarising their findings</p> <p>Experiment with text, pictures and animation to make a simple slide show</p> <p>Create charts to show the data they collect</p> <p>Word process a piece of text</p> <p>Insert/delete a word using the mouse and arrow keys</p> <p>Highlight text to change its format (B, U, I)?</p> <p>Understand they must let their teacher know if they see inappropriate material when on the web.</p> <p>If the pupils use third-party images in their projects,</p>	<p>Import photos to a computer or the network</p> <p>Create charts to show the data they collect</p> <p>Explore Google Maps or Google Earth to find a familiar location</p> <p>Create an IWB resource summarising their data</p> <p>Record audio or written notes from an email or attachments</p> <p>Explain why it is important to type email addresses correctly</p> <p>Read emails</p> <p>Compose and respond to emails</p> <p>Send and reply to messages sent by a safe email partner (within school)</p> <p>Word process a piece of text</p> <p>Insert/delete a word using the mouse and arrow keys</p> <p>Highlight text to change its format (B, U, I)?</p> <p>Understand they must let their teacher know if they see inappropriate material when on the web.</p> <p>If the pupils use third-party images in their projects,</p>	<p>Take digital photographs of bugs</p> <p>Import photos to a computer or the network</p> <p>Create charts to show the data they collect</p> <p>Explore Google Maps or Google Earth to find a familiar location</p> <p>Create an IWB resource summarising their data</p> <p>Understand they must let their teacher know if they see inappropriate material when on the web.</p> <p>If the pupils use third-party images in their projects, they begin to understand licensing</p> <p>Children are aware of where to go for help if concerned about content or contact.</p> <p>Children know that once images are online, it's impossible to control what happens to them.</p> <p>Show an understanding of what is acceptable / unacceptable to photograph, ie not a good</p>

		Respectful of rules for using digital equipment when out of the classroom	they begin to understand licensing Children are aware of where to go for help if concerned about content or contact. Children can consider how to stay safe while researching online Children know that attached files can contain viruses and 'spam' is harmful Children know that safe search filters are in place and school internet access is filtered.	they begin to understand licensing Children are aware of where to go for help if concerned about content or contact. Show an understanding of what is acceptable / unacceptable to photograph, ie not a good idea to take or share if can be identified Children show awareness of some of the risks associated with email. Children know that attached files can contain viruses and 'spam' is harmful Children know that safe search filters are in place and school internet access is filtered.	idea to take or share if can be identified Children can consider how to stay safe while researching online Children know that safe search filters are in place and school internet access is filtered. Respectful of rules for using digital equipment when out of the classroom	
Algorithms / Programs	Data retrieving and organising	Communicating	E-safety	Using the Internet	Databases	Presentation

Year 3

National Curriculum Subject Content

- 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

January 2023

Units of Work					
1	2	3	4	5	6
3.1 'We are Programmers' Programing an animation	3.2 'We are Bug Fixers' Finding and correcting bugs in programs	3.3 'We are Presenters' Videoing a performance Internet Safety Week	3.4 'We are Network Engineers' Exploring Computer Networks, Including The Internet	3.5 'We are Communicators' Communicating safely on the internet	3.6 'We are Opinion Pollsters' Collecting and analysing data
<p>Draw a square, rectangle and other regular shapes on screen, using commands</p> <p>Create an algorithm for an animated scene as a storyboard (Write more complex programs)</p> <p>Use 90 degree and 45 degree turns</p> <p>Break a scene down into small sections of action and dialogue</p> <p>Write a program in Scratch to create the animation / put blocks in order of script</p> <p>Experiment with variables to control models</p> <p>Name some of the hardware that connects computers</p> <p>Take part in a simulation of how data is transmitted via the internet</p> <p>Use ping, ipconfig and tracert commands</p> <p>Appreciate the implications of how networks work for their online safety</p> <p>To consider copyright when sourcing images for programs and/or uploading their own work</p>	<p>Correct 'off-by-one' errors in loops</p> <p>Improve the performance of the circle drawing program</p> <p>Get the dialogue in the joke program to work in sequence</p> <p>Experiment with the speed variable and other factors in the racing car simulator</p> <p>Consider the implications of bugs in software.</p> <p>Can participate in the Scratch community safely</p> <p>Address issues of the pupils' attitudes to online safety.</p>	<p>Review images on a camera and delete unwanted images</p> <p>Experience downloading images from a camera into files on the computer</p> <p>Use photo editing software to crop photos and add effects</p> <p>Manipulate sound when using simple recording story boarding</p> <p>Operate a simple video camera correctly</p> <p>Record useable footage</p> <p>Import and edit their footage</p> <p>Record an audio commentary for their footage</p> <p>Create a presentation that moves from slide to slide and is aimed at a specific audience</p> <p>Combine text, images and sounds and show awareness of audience</p> <p>Know how to manipulate text, underline text, centre text, change font and size & save text to a folder</p>	<p>Name some of the hardware that connects computers</p> <p>Take part in a simulation of how data is transmitted via the internet</p> <p>Use ping, ipconfig and tracert commands</p> <p>Appreciate the implications of how networks work for their online safety</p> <p>To consider copyright when sourcing images for programs and/or uploading their own work</p> <p>They consider some of the implications for privacy, e.g. their 'digital footprint' associated with using the internet.</p> <p>Address issues of the pupils' attitudes to online safety.</p>	<p>Realise that email and video conferencing work via the internet</p> <p>Use email and video conferencing to communicate</p> <p>Use text and video for communication</p> <p>Ensure their use of email and video conferencing complies with the school's AUP</p> <p>Use the email address book</p> <p>Open and send an attachment</p> <p>Name some of the hardware that connects computers</p> <p>Take part in a simulation of how data is transmitted via the internet</p> <p>Use ping, ipconfig and tracert commands</p> <p>Appreciate the implications of how networks work for their online safety</p> <p>Learn about how networks, including the internet, operate.</p> <p>Know that data transmitted via the internet is not always encrypted.</p>	<p>Input data into a prepared database</p> <p>Sort and search a database to answer simple questions</p> <p>Use a branching database</p> <p>Collect data via the internet</p> <p>Treat data collected in a way that shows respect for individuals</p> <p>Use Google Forms to collect data / Use Google Slides to present their results</p> <p>Learn some of the legal and ethical requirements for designing online surveys and processing data.</p> <p>Consider what information it would be appropriate for them to give in an online survey, and some implications of data processing.</p> <p>Can use online tools for collaborating on survey design and analysis, considering how to use these appropriately.</p> <p>Address issues of the pupils' attitudes to online safety.</p>

Can participate in the Scratch community safely Address issues of the pupils' attitudes to online safety.			In filming one another, the pupils need to ensure that the appropriate permission has been obtained, and that they act respectfully and responsibly when filming, editing and presenting their work. Can think through the implications of videos being made available on the school network or more widely via the internet. Discuss why schools and other organisations have strict policies over filming. Address issues of the pupils' attitudes to online safety.		They consider some of the implications for privacy, e.g. their 'digital footprint' associated with using the internet. Can think about the safe use of email and how it can be used positively Be aware of some of email risks, including malware attachments, hacked accounts, spam and spoofed links, Use video conferencing positively, to support learning with a known partner. Address issues of the pupils' attitudes to online safety.	
Algorithms / Programs	Data retrieving and organising	Communicating	E-safety	Using the Internet	Databases	Presentation

Year 4

National Curriculum Subject Content

- 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

Units of Work					
1	2	3	4	5	6
4.1 'We are software developers' Developing a simple educational game	4.2 'We are toy designers' Prototyping an interactive toy	4.3 'We are musicians' Producing digital music Internet safety week	4.4 'We are HTML editors' Editing and writing HTML	4.5 'We are co-authors' Producing a Wiki	4.6 'We are meteorologists' Presenting the weather
<p>Design and develop an interactive educational game</p> <p>Use repeat instructions to draw regular shapes on screen, using commands</p> <p>Experiment with variables to control models</p> <p>Make turns specifying the degrees</p> <p>Use the if/then/else block correctly in scratch</p> <p>Use the keyboard for input and the screen for output</p> <p>Make accurate predictions about the outcome of a program they have written</p> <p>Understand input and output</p> <p>Consider copyright when sourcing images/media for their programs and/or uploading their work</p> <p>Search for content for their programs safely</p> <p>Be aware of what information they can share & how to participate positively in an online community</p>	<p>Design a toy with computer-controlled input and output</p> <p>Write an algorithm to show how their toys</p> <p>Experiment with variables to control models</p> <p>Give an on-screen robot specific directional instructions that takes them from x to y</p> <p>Test input and output on a simulation of their toy using simple scripts</p> <p>Identify ways in which their simulated toy does not function as expected</p> <p>Can link their programs to hardware, taking care to work safely with a range of tools & electronic equipment.</p> <p>Think about copyright when sourcing audio or publishing their own compositions.</p>	<p>Explain how digital technology contributes to creating music</p> <p>Create a simple composition using sequencing software</p> <p>Record samples to use in sequencing software / combine samples to produce a piece of music</p> <p>Export their composition in a standard compressed format</p> <p>Discuss how copyright relates to music performed in school & as illegal downloading / sharing of copyrighted music.</p> <p>Think about copyright when sourcing audio or publishing their own compositions.</p>	<p>Understand computer networks and the internet</p> <p>Use tabbed browsing to open two or more web pages at the same time</p> <p>Use a search engine to find a specific website</p> <p>Use note-taking skills to decide which text to copy and paste into a document</p> <p>Open a link to a new window</p> <p>Open a document (PDF) and view it</p> <p>Understand that web pages are written and transmitted in HTML</p> <p>Know and use some simple HTML tags / Edit the HTML for a web page</p> <p>Create web pages that do not reveal pupils' personal information</p> <p>Learn how easy it is to create content for the web but need to be safe and spot fake news</p> <p>consider the reliability of web-based content when knowing they can be changed easily</p>	<p>Find and read an article on Wikipedia</p> <p>Create content for a wiki</p> <p>Create a lengthy presentation that moves from slide to slide, aimed at a specific audience</p> <p>Edit their own content</p> <p>Insert sound recordings into a multi-media presentation</p> <p>Know how to manipulate text, underline text, centre text, change font and size and save text to a folder</p> <p>Edit the HTML for a web page</p> <p>Consider some strategies for evaluating the reliability of online content</p> <p>Learn how easy it is to create content for the web but need to be safe and spot fake news</p> <p>consider the reliability of web-based content when knowing they can be changed easily</p>	<p>Enter data</p> <p>Take digital photos</p> <p>Create simple charts</p> <p>Make predictions</p> <p>Identify unusual data</p> <p>Add measurements and descriptions to photographs</p> <p>Input data into a prepared database</p> <p>Sort and search a database to answer simple questions</p> <p>Recognise what a spread sheet is</p> <p>Use the terms 'cells', 'rows' and 'columns'</p> <p>Enter data, highlight it and make bar chart</p> <p>Analysing data</p> <p>Create graphs and tables to be copied and pasted into other documents</p> <p>Edit their own content</p> <p>Insert sound recordings into a multi-media presentation</p> <p>Know how to manipulate text, underline text, centre text, change font and size and save text to a folder</p> <p>Edit the HTML for a web page</p>

If pupils use an online community, they should know how to do so in a safe and responsible manner with parents' consent.				Consider copyright when sourcing images/media for their programs and/or uploading their work		<p>Use ICT to measure sound or light or temperature using sensors</p> <p>Know importance of obtaining & using accurate data for any information-processing work.</p> <p>Consider copyright when sourcing images/media for their programs and/or uploading their work</p> <p>When filming ensure appropriate permission is obtained and that recordings are made, edited and shown in safe, respectful and responsible ways.</p> <p>Think carefully about the implications of uploading their films to the school network or to the internet.</p>
Algorithms / Programs	Data retrieving and organising	Communicating	E-safety	Using the Internet	Databases	Presentation

Year 5

National Curriculum Subject Content

- 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

Units of Work

January 2023

1	2	3	4	5	6
5.1 'We are Game Developers' Developing an interactive game	5.2 'We are Cryptographers' Cracking codes	5.3 'We are Artists' Fusing geometry and art Internet safety week	5.4 'We are Web developers' Creating a web page about cyber safety	5.5 'We are Bloggers' Sharing experiences and opinions	5.6 'We are Architects' Creating a virtual space
<p>Capture sounds, images and video</p> <p>Explore 'What is' questions by playing adventure or quest games</p> <p>Write programs that have sequences and repetitions</p> <p>Consider copyright when sourcing images or media for their games and/or uploading their work</p> <p>Develop safe search habits when searching for content for their games</p> <p>Consider some personal implications of playing games, perhaps including violent computer games.</p>	<p>Send and receive messages using Morse and semaphore</p> <p>Recognise the importance of keeping passwords entirely secret</p> <p>Recognise the need for encryption when using the web</p> <p>Recognise the importance of using complex passwords</p> <p>Understand how to check if a web page is encrypted</p> <p>Learn how information can be communicated in secret over open channels, including the internet, using cryptography.</p> <p>Learn about the public key system used to sign and encrypt content on the web, and how they can check the security certificates</p> <p>Learn about the importance of password security for online identity and consider what makes a secure password.</p>	<p>Use the web to explore virtual art galleries</p> <p>Create simple objects using SketchUp / Create a simple gallery space in SketchUp</p> <p>Add furniture to their gallery in SketchUp / Add their artwork to the gallery</p> <p>Create a tessellating pattern</p> <p>Write a program to draw a simple shape</p> <p>Create a pattern using overlapping shapes and using repeating, varied shapes</p> <p>Create a computer-generated landscape</p> <p>Use instant messaging to communicate with class members</p> <p>Conduct a video chat with someone elsewhere in the school or in another school</p> <p>Reinforce messages around safe searching and evaluating the quality of online content.</p>	<p>Use a range of presentation applications</p> <p>Make a home page for a website that contains links to other pages</p> <p>Capture sounds, images and video</p> <p>Use the word count tool to check the length of a document</p> <p>Use bullets and numbering tools</p> <p>Consider audience when editing a simple film</p> <p>Know how to prepare and then present a simple film</p> <p>Use ICT to record sounds and capture both still and video images</p> <p>Use a search engine using keyword searches</p> <p>Compare the results of different searches</p> <p>Decide which sections are appropriate to copy and paste from at least two web pages</p> <p>Save stored information following simple lines of enquiry</p> <p>Download a document and save it to the computer</p> <p>Work collaboratively to develop a website in which they present their own</p>	<p>Understand how to use blogs safely and responsibly</p> <p>Understand how the internet makes blogging possible</p> <p>Write a blog post</p> <p>Comment on a blog post</p> <p>Add an image, audio or video to a blog post</p> <p>Add their own original image, audio or video to a blog post</p> <p>Use a search engine using keyword searches</p> <p>Compare the results of different searches</p> <p>Decide which sections are appropriate to copy and paste from at least two web pages</p> <p>Save stored information following simple lines of enquiry</p> <p>Download a document and save it to the computer</p> <p>Write content for their own or a shared blog, thinking carefully about what can be appropriately shared online.</p> <p>Consider issues of copyright and digital footprint</p> <p>Show awareness of what constitutes acceptable behaviour when</p>	<p>Listen to streaming audio such as online radio</p> <p>Download and listen to podcasts</p> <p>Produce and upload a podcast</p> <p>Manipulate sounds using Audacity</p> <p>Select music from open sources and incorporate it into multimedia presentations</p> <p>Work on simple film editing</p> <p>Consider copyright when sourcing images or media for their games and/or uploading their work</p> <p>Become more discerning in evaluating content as they review others' blogs.</p> <p>Reinforce messages around safe searching and evaluating the quality of online content.</p>

			authoritative content on a broad range of issues around the safe and responsible use of technology. Consider the reliability and bias of online content, Contribute positively to a shared resource Use search engines safely and effectively.	commenting on others' blog posts. Understand the importance of creating high-quality online content Become more discerning in evaluating content as they review others' blogs.		
Algorithms / Programs	Data retrieving and organising	Communicating	E-safety	Using the Internet	Databases	Presentation

Year 6

National Curriculum Subject Content

- 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

Units of Work

1	2	3	4	5	6
6.1 'We are App/ Web Page Planners'	6.2 'We are Project Managers'	6.3 'We are Market Researchers'	6.4 'We are Interface Designers'	6.5 'We are App/ Web Page Developers'	6.6 'We are Marketers'
Planning the creation of a mobile app	Developing Project Management Skills	Researching the app/ web page market	Designing an interface for an app/ web page	Developing a simple app/ web-page.	Creating video and web copy for the app/ web page

<p>Understand that a smartphone is a programmable computer</p> <p>View geotagged photos on a map</p> <p>Search for apps addressing the problems they have identified^[SEP]</p> <p>Evaluate the quality of a range of competing products</p> <p>Create an effective presentation to pitch their idea</p> <p>Create a sophisticated multimedia presentation</p> <p>Confidently choose the correct page set up option when creating a document</p> <p>Confidently use text formatting tools, including heading and body text</p> <p>Use the "hanging indent" tool to help format work where appropriate (e.g. a play script)</p> <p>Contribute to discussions online</p> <p>Use a search engine using keyword searches</p> <p>Use complex searches using such as '+' 'OR' "Find the phrase in inverted commas</p> <p>Create an effective presentation to pitch their idea</p> <p>Create a sophisticated multimedia presentation</p> <p>Consider the capabilities of smartphones / tablets &</p>	<p>Identify the principal aspects of the project</p> <p>Identify the tasks that need to be completed for the various aspects of the project</p> <p>Identify the tools and resources needed to complete the project</p> <p>Create original content for use in their app</p> <p>Evaluate the quality of work already undertaken</p> <p>Order the tasks into a sensible sequence</p> <p>Use complex searches using such as '+' 'OR' "Find the phrase in inverted commas"</p> <p>Search databases for information using symbols such as = > or <</p> <p>Use online tools safely and effectively, considering how they can contribute positively to a shared project.</p> <p>Use search engines safely and effectively.</p> <p>Can children make use of online content, respecting any copyright conditions?</p>	<p>Create an online survey</p> <p>Use simple charts to analyse the results of a survey</p> <p>Conduct an interview or focus group</p> <p>Analyse the information obtained in an interview or focus group</p> <p>Present findings from their market research</p> <p>Use recorded media to analyse information collected during an interview or focus group</p> <p>Conduct a video chat with people in another country or organization</p> <p>Can children make use of online content, respecting any copyright conditions</p> <p>When conducting their research, the pupils need to act safely and responsibly, as well as showing respect for those participating in the research.</p> <p>In marketing their app, the pupils should consider the legal and ethical frameworks around advertising across different media.</p> <p>Think about the need to protect personal information about themselves and other members of their group when marketing their app.</p>	<p>Sketch ideas for the design of their app</p> <p>Use a prototyping tool to develop a set of screen layouts for their app</p> <p>Think through elements of interaction design for their app^[SEP]</p> <p>Be aware of accessibility issues in apps and other software^[SEP]</p> <p>Source media assets for their app</p> <p>Use logical reasoning to explain how some simple algorithms work</p> <p>Sketch ideas for the design of their app</p> <p>Use a prototyping tool to develop a set of screen layouts for their app</p> <p>Consider carefully about copyright in relation to both sourcing and creating their own digital content and user interface components for their apps.</p>	<p>Use logical reasoning to detect errors in their algorithms</p> <p>Use sequence, selection, repetition and variables in their code</p> <p>Use logical reasoning to detect errors in their code</p> <p>Use trial and improvement approaches to debug their code</p> <p>Explain how an algorithm works</p> <p>Use an ICT program to control a number of events for an external device</p> <p>Use ICT to measure sound, light or temperature using sensors and interpret the data</p> <p>Explore 'what if' questions by planning different scenarios for controlled devices</p> <p>Use input from sensors to trigger events</p> <p>Think about the need to protect personal information about themselves and other members of their group when marketing their app.</p> <p>When creating websites for their apps, have pupils shown consideration the e-safety implications for the site's users as well as themselves.</p>	<p>Create an effective and well-designed marketing flyer using their graphics skills to good effect</p> <p>Explore the menu options and experiment with images (colour effects, options, snap to grid, grid settings etc.</p> <p>Develop a well-designed and easy-to- navigate site for their app</p> <p>Be aware of their responsibilities as creators of online content</p> <p>Edit original and third-party content to create a promotional video</p> <p>Present a film for a specific audience and then adapt same film for a different audience</p> <p>Present a film for a specific audience and then adapt same film for a different audience</p> <p>Consider carefully about copyright in relation to both sourcing and creating their own digital content and user interface components for their apps.</p> <p>Children participating in online communities for either of the development platforms here need to do so in a safe, responsible and respectful manner.</p> <p>The pupils should also think carefully about any safety implications of the apps they develop.</p>
--	---	--	---	--	---

<p>how these can be used purposefully. Know some of the capabilities of devices, including how they can be used to record /and share location information Consider some of the implications of these devices Use search engines safely and effectively. Use online tools safely and effectively, considering how they can contribute positively to a shared project.</p>						
<p>Algorithms/ Programs</p>	<p>Data Retrieving and Organising</p>	<p>Communicating</p>	<p>E- Safety</p>	<p>Using the Internet</p>	<p>Databases</p>	<p>Presentation</p>