

KEY STAGE 2					
Domains of knowledge	End points	Year 3	Year 4	Year 5	Year 6
Computer Science	<p><u>National curriculum:</u></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 	<p>Substantive Knowledge – established computing facts (concepts) Disciplinary knowledge (skills) *also identified in bold within sequence of learning</p>			
		<p>Programming/ Coding</p>	<p><u>Programming A – Sequencing sounds</u></p> <ul style="list-style-type: none"> To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description <p><u>Programme B – Events and actions in programs</u></p> <ul style="list-style-type: none"> To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features 	<p><u>Programming A – repetition in shapes</u></p> <ul style="list-style-type: none"> To identify that accuracy in programming is important To create a program in a text-based language To explain what ‘repeat’ means To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome <p><u>Programming B – repetition in games</u></p> <ul style="list-style-type: none"> To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count-controlled loops To develop a design that includes two or more 	<p><u>Programming A – Selection of physical computing</u></p> <ul style="list-style-type: none"> To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project <p><u>Programming B – Selection in quizzes</u></p>



			<ul style="list-style-type: none"> To identify and fix bugs in a program To design and create a maze-based challenge 	<p>loops which run at the same time</p> <ul style="list-style-type: none"> To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition 	<ul style="list-style-type: none"> To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program that uses selection To create a program that uses selection To evaluate my program 	<ul style="list-style-type: none"> To use a conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
<p><u>Disciplinary Knowledge – methods of working within computing</u> *also identified in bold within sequence of learning</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 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"> 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 	<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 	<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

				algorithms work and to detect and correct errors in algorithms and programs	and various forms of input and output	forms of input and output
	<p><u>National curriculum:</u></p> <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 	Systems and networks	<p><u>Computer systems and networks- connecting computers</u></p> <ul style="list-style-type: none"> To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network 	<p><u>Computer systems and networks- the internet</u></p> <ul style="list-style-type: none"> To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content 	<p><u>Computer systems and networks – systems</u></p> <ul style="list-style-type: none"> To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom 	<p><u>Communication and Collaboration</u></p> <ul style="list-style-type: none"> To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of online communication

Information technology	<u>National Curriculum:</u> <ul style="list-style-type: none"> 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 	Substantive Knowledge – established computing facts (concepts) Disciplinary knowledge (skills) *also identified in bold within sequence of learning			
		Creating Media	<u>Creating media – stop frame animation</u> <ul style="list-style-type: none"> To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation <p>Builds on Year 1 unit – digital painting</p> <u>Creating media – desktop publishing</u> <ul style="list-style-type: none"> To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing <p>Builds on Year 1 unit – word processing</p>	<u>Creating media – audio production</u> <ul style="list-style-type: none"> To identify that sound can be recorded To explain that audio recordings can be edited To recognise the different parts of creating a podcast project To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio <p>Builds on Year 2 unit – digital music</p> <u>Creating media – photo editing</u> <ul style="list-style-type: none"> To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image <p>Builds on Year 2 unit – digital photography</p>	<u>Creating media – video production</u> <ul style="list-style-type: none"> To explain what makes a video effective To use a digital device to record video To capture video using a range of techniques To create a storyboard To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video <p>Builds on Year 3 unit – stop-frame animation</p> <u>Creating media – Introduction to vector graphics</u> <ul style="list-style-type: none"> To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with

					<ul style="list-style-type: none"> To apply what I have learned about vector drawings <p>Builds on Year 3 unit – stop-frame animation</p>	<p>Builds on Year 5 – introduction to vector graphics</p>
	Data and information	<p><u>Data and information – branching databases</u></p> <ul style="list-style-type: none"> To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database To explain why it is helpful for a database to be well structured To plan the structure of a branching database To independently create an identification tool 	<p><u>Data and information – data logging</u></p> <ul style="list-style-type: none"> To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects ‘data points’ from sensors over time To recognise how a computer can help us analyse data To identify the data needed to answer questions To use data from sensors to answer questions 	<p><u>Data and information – flat-file databases</u></p> <ul style="list-style-type: none"> To use a form to record information To compare paper and computer-based databases To outline how you can answer questions by grouping and then sorting data To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To use a real-world database to answer questions 	<p><u>Data and information – Introduction to spreadsheets</u></p> <ul style="list-style-type: none"> To create a data set in a spreadsheet To build a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet to plan an event To choose suitable ways to present data 	
<p><u>Disciplinary Knowledge – methods of working within computing</u> *also identified in bold within sequence of learning</p>						
		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	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	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	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	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

Digital literacy	National Curriculum:	Substantive Knowledge – established computing facts (concepts) Disciplinary knowledge (skills) *also identified in bold within sequence of learning				
	<ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact <p><i>In this domain of knowledge, key links are made with the SCARF PSHE curriculum to further safeguard children.</i></p>	Self-Image & Identity	<p>I can explain what is meant by the term 'identity'.</p> <p>I can explain how I can represent myself in different ways online.</p> <p>I can explain ways in which and why I might change my identity online depending on what I am doing online.</p>	<p>I can explain how my online identity can be different to the identity I present in real life.</p> <p>Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.</p>	<p>I can explain how identity online can be copied, modified or altered.</p> <p>I can demonstrate responsible choices about my online identity; depending on context.</p>	<p>I can describe ways in which the media can shape ideas about gender.</p> <p>I can identify messages about gender roles and make judgements based on them.</p> <p>I can challenge and explain why it is important to reject inappropriate messages about gender online.</p> <p>I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline.</p> <p>I can explain why I should keep asking until I get the help I need.</p>
		Online Relationships	<p>I can describe ways people who have similar likes and interests can get together online.</p> <p>I can explain some risks of communicating online with others I don't know well.</p>	<p>I can give examples of how to be respectful to others online.</p>	<p>I can explain that there are some people who I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault.</p>	<p>I can describe ways in which the media can shape ideas about gender.</p> <p>I can identify messages about gender roles and make judgements based on them.</p>

			<p>I can explain what it means to 'know someone' online and why this may be different from knowing them in real life.</p> <p>I can explain why I should be careful who I trust online and what information I trust them with.</p> <p>I can explain what is meant by 'trusting someone online' and I can explain why this is different to 'liking someone online'.</p> <p>I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried.</p>		<p>I can make positive contributions and be part of online communities.</p> <p>I can describe some of the communities in which I am involved and describe how I collaborate with others positively.</p>	<p>I can challenge and explain why it is important to reject inappropriate messages about gender online.</p> <p>I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline.</p> <p>I can explain why I should keep asking until I get the help I need.</p>
		Online Reputation	<p>I can explain how to search for information about others online.</p> <p>I can recognise I need to be careful before I share anything about myself or others online.</p> <p>I know who I should ask if I am not sure if I should put something online.</p>	<p>I can describe how others can find out information about me by looking online.</p> <p>I can explain ways that some of the information about me online could have been created, copied or shared by others.</p>	<p>I can search for information about an individual online and create a summary report of the information I find.</p> <p>I can describe ways that information about people online can be used by others to make judgements about an individual.</p>	<p>I can explain how I am developing an online reputation which will allow other people to form an opinion of me.</p> <p>I can describe some simple ways that help build a positive online reputation.</p>
		Online Bullying	<p>I can explain what bullying is and can describe how people may bully others.</p>	<p>I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat).</p>	<p>I can recognise when someone is upset, hurt or angry online.</p>	<p>I can explain how I am developing an online reputation which will allow other people to form an opinion of me.</p>

			<p>I can describe rules about how to behave online and how I follow them.</p>	<p>I can identify some online technologies where bullying might take place.</p> <p>I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).</p>	<p>I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone.</p> <p>I can explain how I would report online bullying on the apps and platforms that I use.</p> <p>I can describe the helpline services who can support me and what I would say and do if I needed their help e.g. Childline.</p> <p>I can explain how to block abusive users.</p>	<p>I can describe some simple ways that help build a positive online reputation.</p>
		<p>Managing Online Information</p>	<p>I can use key phrases in search engines.</p> <p>I can explain the difference between a belief, an opinion and a fact.</p>	<p>I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites).</p> <p>I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases; pop-ups) and can recognise some of these when they appear.</p> <p>I can explain that some people I 'meet online' may be computer programmes pretending to be real people.</p>	<p>I can explain what is meant by 'being sceptical'. I can give some examples of when and why it is important to be sceptical.</p> <p>I can explain what is meant by a hoax. I can explain why I need to think carefully before I forward anything online.</p> <p>I can explain why some information I find online may not be honest, accurate or legal.</p>	<p>I can use search technologies effectively.</p> <p>I can explain how search engines work and how results are selected and ranked.</p> <p>I can demonstrate the strategies I would apply to be discerning in evaluating digital content.</p> <p>I can describe how some online information can be opinion and can offer examples.</p>



					<p>I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (accident or on purpose).</p>	<p>I can use search technologies effectively.</p> <p>I can explain how search engines work and how results are selected and ranked.</p> <p>I can demonstrate the strategies I would apply to be discerning in evaluating digital content.</p> <p>I can describe how some online information can be opinion and can offer examples.</p>
		<p>Health, Well-Being & Lifestyle</p>	<p>I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).</p>	<p>I can explain how using technology can distract me from other things I might do or should be doing.</p> <p>I can identify times or situations when I might need to limit the amount of time I use technology and suggest strategies to help me with this.</p>	<p>I can describe ways technology can affect healthy sleep and can describe some of the issues.</p> <p>I can describe some strategies, tips or advice to promote healthy sleep with regards to technology.</p>	<p>I recognise and can discuss the pressures that technology can place on someone and how/when they could manage this.</p> <p>I can recognise features of persuasive design and how they are used to keep users engaged (current and future use)</p> <p>I can assess and action different strategies to limit the impact of technology on my health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).</p>
		<p>Privacy & Security</p>	<p>I can give reasons why I should only share information with people I</p>	<p>I can explain what a strong password is and describe strategies for keeping my</p>	<p>I can create and use strong and secure passwords.</p>	<p>I can describe effective strategies for managing those passwords.</p>

			<p>choose to and can trust. I can explain that if I am not sure or feel pressured I should ask a trusted adult.</p> <p>I can understand and can give reasons why passwords are important.</p> <p>I can describe simple strategies for creating and keeping passwords private.</p> <p>I can describe how connected devices can collect and share my information with others.</p>	<p>personal information private, depending on context.</p> <p>I can explain that internet use is never fully private and is monitored e.g. adult supervision.</p>	<p>I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice messages, geolocation) with others.</p> <p>I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.</p>	<p>I know what to do if my password is lost or stolen.</p> <p>I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing).</p>
		Copyright & Ownership	<p>I can explain why copying someone else's work from the internet without permission can cause problems.</p> <p>I can give examples of what these problems might be.</p> <p>Ongoing throughout all activities where work is produced.</p>	<p>When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it.</p> <p>I can give some simple examples.</p> <p>Through all work produced in NCCE and other computing units</p> <p>NCCE Y1 IT Drawing unit</p>	<p>I can assess and justify when it is acceptable to use the work of others.</p> <p>I can give examples of content that is permitted to be reused.</p> <p>Through all work produced in NCCE and other computing units</p> <p>NCCE Y1 IT Drawing unit</p>	<p>I can demonstrate the use of search tools to find and access online content which can be reused by others.</p> <p>I can demonstrate how to make references to and acknowledge sources I have used from the internet.</p>
		<u>Disciplinary Knowledge – methods of working within computing</u>				



		<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p>*Children are taught digital literacy knowledge to allow them to apply this outside of school.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p>*Children are taught digital literacy knowledge to allow them to apply this outside of school.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p>*Children are taught digital literacy knowledge to allow them to apply this outside of school.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p> <p>*Children are taught digital literacy knowledge to allow them to apply this outside of school.</p>
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Year 3 Computing – Long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Substantive knowledge</p> <p>Disciplinary knowledge (skills) *also identified in bold within sequence of learning</p>	<p><u>Creating media – stop frame animation</u></p> <ul style="list-style-type: none"> To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation <p>Builds on Year 1 unit – digital painting</p>	<p><u>Computer systems and networks- connecting computers</u></p> <ul style="list-style-type: none"> To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way that we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network 	<p><u>Programming A – Sequencing sounds</u></p> <ul style="list-style-type: none"> To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description 	<p><u>Data and information – branching databases</u></p> <ul style="list-style-type: none"> To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database To explain why it is helpful for a database to be well structured To plan the structure of a branching database To independently create an identification tool 	<p><u>Creating media – desktop publishing</u></p> <ul style="list-style-type: none"> To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing <p>Builds on Year 1 unit – word processing</p>	<p><u>Programme B – Events and actions in programs</u></p> <ul style="list-style-type: none"> To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge
<p>Substantive knowledge – digital literacy</p>	<p><u>Online Relationships</u></p> <ul style="list-style-type: none"> I can describe ways people who have similar likes and interests can get together online. I can explain some risks of communicating online with others I don't know well. I can explain what it means to 'know someone' online and 	<p><u>Self Image and Identity</u></p> <ul style="list-style-type: none"> I can explain what is meant by the term 'identity'. I can explain how I can represent myself in different ways online. I can explain ways in which and why I might change my identity online depending on what I am doing online. 	<p><u>Managing Online Information</u></p> <ul style="list-style-type: none"> I can use key phrases in search engines. I can explain the difference between a belief, an opinion and a fact. 	<p><u>Online Reputation</u></p> <ul style="list-style-type: none"> I can explain how to search for information about others online. I can recognise I need to be careful before I share anything about myself or others online. I know who I should ask if I am not sure if I should put something online. 	<p><u>Health, Well-being and lifestyle</u></p> <ul style="list-style-type: none"> I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos). 	<p><u>Privacy and Security</u></p> <ul style="list-style-type: none"> I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or feel pressured I should ask a trusted adult. I can understand and can give reasons why passwords are important.



	<p>why this may be different from knowing them in real life.</p> <ul style="list-style-type: none"> I can explain why I should be careful who I trust online and what information I trust them with. I can explain what is meant by 'trusting someone online' and I can explain why this is different to 'liking someone online' I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. 	<p>Online Bullying</p> <ul style="list-style-type: none"> I can explain what bullying is and can describe how people may bully others. I can describe rules about how to behave online and how I follow them. 				<ul style="list-style-type: none"> I can describe simple strategies for creating and keeping passwords private. I can describe how connected devices can collect and share my information with others.
<p>Disciplinary knowledge</p> <p>National Curriculum objectives</p>	<p>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</p>		<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>Select, use and combine a variety of software to allow the collecting, analysing, evaluating and presenting data and information</p>	<p>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</p>	<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>

Year 4 Computing – Long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Substantive knowledge</p> <p>Disciplinary knowledge (skills) *also identified in bold within sequence of learning</p>	<p><u>Creating media – audio production</u></p> <ul style="list-style-type: none"> To identify that sound can be recorded To explain that audio recordings can be edited To recognise the different parts of creating a podcast project To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio <p>Builds on Year 2 unit – digital music</p>	<p><u>Computer systems and networks- the internet</u></p> <ul style="list-style-type: none"> To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content 	<p><u>Programming A – repetition in shapes</u></p> <ul style="list-style-type: none"> To identify that accuracy in programming is important To create a program in a text-based language To explain what ‘repeat’ means To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome 	<p><u>Data and information – flat-file databases</u></p> <ul style="list-style-type: none"> To use a form to record information To compare paper and computer-based databases To outline how you can answer questions by grouping and then sorting data To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To use a real-world database to answer questions 	<p><u>Creating media – photo editing</u></p> <ul style="list-style-type: none"> To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image <p>Builds on Year 2 unit – digital photography</p>	<p><u>Programming B – repetition in games</u></p> <ul style="list-style-type: none"> To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count-controlled loops To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition
<p>Substantive knowledge – digital literacy</p>	<p><u>Online Relationships</u></p> <ul style="list-style-type: none"> I can give examples of how to be respectful to others online. 	<p><u>Self Image and Identity</u></p> <ul style="list-style-type: none"> I can explain how my online identity can be different to the identity I present in real life. Knowing this, I can describe the right decisions about how I interact with others and how others perceive me. 	<p><u>Managing Online Information</u></p> <ul style="list-style-type: none"> I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app 	<p><u>Online Reputation</u></p> <ul style="list-style-type: none"> I can describe how others can find out information about me by looking online. I can explain ways that some of the information about me online could have been created, copied or shared by others. 	<p><u>Health, Well-being and Lifestyle</u></p> <ul style="list-style-type: none"> I can explain how using technology can distract me from other things I might do or should be doing. I can identify times or situations when I might need to limit the amount of time I use technology 	<p><u>Privacy and Security</u></p> <ul style="list-style-type: none"> I can explain what a strong password is and describe strategies for keeping my personal information private, depending on context. I can explain that internet use is never fully private and is monitored e.g. adult supervision.



		<p>Online Bullying</p> <ul style="list-style-type: none"> I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can identify some online technologies where bullying might take place. I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation). 	<p>purchases; pop-ups) and can recognise some of these when they appear.</p> <ul style="list-style-type: none"> I can explain that some people I 'meet online' may be computer programmes pretending to be real people. 		<p>and suggest strategies to help me with this.</p>	
<p>Disciplinary knowledge</p> <p>National Curriculum objectives</p>	<p>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</p>		<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>Select, use and combine a variety of software to allow the collecting, analysing, evaluating and presenting data and information</p>	<p>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</p>	<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>

Year 5 Computing – Long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Substantive knowledge</p> <p>Disciplinary knowledge (skills) *also identified in bold within sequence of learning</p>	<p><u>Creating media – video production</u></p> <ul style="list-style-type: none"> To explain what makes a video effective To use a digital device to record video To capture video using a range of techniques To create a storyboard To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video <p>Builds on Year 3 unit – stop-frame animation</p>	<p><u>Computer systems and networks – systems</u></p> <ul style="list-style-type: none"> To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To identify how to use a search engine To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important, and to whom 	<p><u>Programming A – Selection of physical computing</u></p> <ul style="list-style-type: none"> To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project 	<p><u>Data and information – flat-file databases</u></p> <ul style="list-style-type: none"> To use a form to record information To compare paper and computer-based databases To outline how you can answer questions by grouping and then sorting data To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To use a real-world database to answer questions 	<p><u>Creating media – Introduction to vector graphics</u></p> <ul style="list-style-type: none"> To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To apply what I have learned about vector drawings <p>Builds on Year 3 unit – stop-frame animation</p>	<p><u>Programming B – Selection in quizzes</u></p> <ul style="list-style-type: none"> To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program that uses selection To create a program that uses selection To evaluate my program
<p>Substantive knowledge – digital literacy</p>	<p><u>Self Image and Identity</u></p> <ul style="list-style-type: none"> I can explain how identity online can be copied, modified or altered. I can demonstrate responsible choices about my online identity; depending on context. 	<p><u>Online Bullying</u></p> <ul style="list-style-type: none"> I can recognise when someone is upset, hurt or angry online. I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. 	<p><u>Managing Online Information</u></p> <ul style="list-style-type: none"> I can explain what is meant by 'being sceptical'. I can give some examples of when and why it is important to be sceptical. I can explain what is meant by a hoax. I can explain why I need to 	<p><u>Online Reputation</u></p> <ul style="list-style-type: none"> I can search for information about an individual online and create a summary report of the information I find. I can describe ways that information about people online can be used by others to make 	<p><u>Health, Well-being and Lifestyle</u></p> <ul style="list-style-type: none"> I can search for information about an individual online and create a summary report of the information I find. I can describe ways that information about people online can be 	<p><u>Privacy and Security</u></p> <ul style="list-style-type: none"> I can create and use strong and secure passwords. I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice



	<p>Online Relationships</p> <ul style="list-style-type: none"> I can explain that there are some people who I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault. I can make positive contributions and be part of online communities. I can describe some of the communities in which I am involved and describe how I collaborate with others positively. 		<p>think carefully before I forward anything online.</p> <ul style="list-style-type: none"> I can explain why some information I find online may not be honest, accurate or legal. I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (accident or on purpose) 	<p>judgements about an individual.</p>	<p>used by others to make judgements about an individual.</p>	<p>messages, geolocation) with others.</p> <ul style="list-style-type: none"> I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.
<p>Disciplinary knowledge</p> <p>National Curriculum objectives</p>	<p>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</p>		<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>Select, use and combine a variety of software to allow the collecting, analysing, evaluating and presenting data and information</p>	<p>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</p>	<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>

Year 6 Computing – Long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Substantive knowledge</p> <p>Disciplinary knowledge (skills)*also identified in bold within sequence of learning</p>	<p><u>Creating media – web page creation</u></p> <ul style="list-style-type: none"> To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people <p>Builds on Year 3 unit – desktop publishing</p>	<p><u>Communication and Collaboration</u></p> <ul style="list-style-type: none"> To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of online communication 	<p><u>Programming A – variables in games</u></p> <ul style="list-style-type: none"> To define a ‘variable’ as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project 	<p><u>Data and information – Introduction to spreadsheets</u></p> <ul style="list-style-type: none"> To create a data set in a spreadsheet To build a data set in a spreadsheet To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet to plan an event To choose suitable ways to present data 	<p><u>Creating media – 3D modelling</u></p> <ul style="list-style-type: none"> To recognise that you can work in three dimensions on a computer To identify that digital 3D objects can be modified To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan my own 3D model To create my own digital 3D model <p>Builds on Year 5 – introduction to vector graphics</p>	<p><u>Programming B – Sensing</u></p> <ul style="list-style-type: none"> To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use a conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device
<p>Substantive knowledge – digital literacy</p>	<p><u>Online Relationships</u></p> <ul style="list-style-type: none"> I can explain how sharing something online may have an impact either positively or negatively I can describe how things shared privately online can have unintended consequences for others e.g. screen grab. I can explain that taking/sharing inappropriate images of someone may have an impact for the sharer and 	<p><u>Self Image and Identity</u></p> <ul style="list-style-type: none"> I can describe ways in which the media can shape ideas about gender. I can identify messages about gender roles and make judgements based on them. I can challenge and explain why it is important to reject inappropriate messages about gender online. 	<p><u>Managing Online Information</u></p> <ul style="list-style-type: none"> I can use search technologies effectively. I can explain how search engines work and how results are selected and ranked I can demonstrate the strategies I would apply to be discerning in evaluating digital content. I can describe how some online information can be 	<p><u>Online Reputation</u></p> <ul style="list-style-type: none"> I can explain how I am developing an online reputation which will allow other people to form an opinion of me. I can describe some simple ways that help build a positive online reputation. 	<p><u>Health, Well-being and Lifestyle</u></p> <ul style="list-style-type: none"> I recognise and can discuss the pressures that technology can place on someone and how/when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use) I can assess and action different strategies to 	<p><u>Privacy and Security</u></p> <ul style="list-style-type: none"> I can describe effective strategies for managing those passwords. I know what to do if my password is lost or stolen. I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing).

	<p>others; and who can help if someone is worried about this.</p>	<ul style="list-style-type: none"> I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. I can explain why I should keep asking until I get the help I need. <p>Online Bullying</p> <ul style="list-style-type: none"> I can describe how to capture bullying content as evidence (e.g. screen grab, URL, profile) to share with others who can help me. I can explain how someone could report online bullying in different contexts. 	<p>opinion and can offer examples.</p> <ul style="list-style-type: none"> I can define the terms ‘influence’, ‘manipulation’ and ‘persuasion’ and explain how I might encounter these online e.g. advertising and ad-targeting. I can explain how and why some people may present opinions as facts. I can demonstrate strategies to enable me to analyse and evaluate the validity of facts and I can explain why using these strategies are important. I can identify and flag inappropriate content. 		<p>limit the impact of technology on my health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).</p>	
<p>Disciplinary knowledge</p> <p>National Curriculum objectives</p>	<p>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</p>		<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>Select, use and combine a variety of software to allow the collecting, analysing, evaluating and presenting data and information</p>	<p>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</p>	<p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>