

Subject Overview: Computing 2023-2024

Ecclesfield Primary School follows the Sheffield Scheme of work for computing, supplemented by resources from Teach Computing, Barefoot Computing and the BBC website

Key Online Safety messages are introduced across all strands of the scheme, however the majority of online safety is taught in RHE lessons and consolidated in computing where relevant.

	Strand 0 Key Skills	Strand 1 Communicating: Text and Images	Strand 2 Communicating: Multimedia	Strand 3 Data & Information	Strand 4 Programming A	Strand 5 Programming B
1	What is a Computer?; Mouse & Keyboard Skills; Logging on; Opening & saving work; Organising files; Searching for information	1.1 How do I use the school computer independently?	2.1 How do I record sounds and pictures?	3.1 How do I present data using pictures?	4.1 Simple Bee-Bot Programs	5.1 What is an algorithm?
2		1.2 How do I use a computer as a writer?	2.2 How do I create a multimedia story?	3.2 What is a branching database?	4.2 Extending Programs with Bee-Bot	5.2 Simple Drawing Programs
3		1.3 What makes a good poster?	2.3 How do I use a computer as a musician?	3.3 How do we use databases to find out information?	4.3 Sequence & Events in Scratch	5.3 Count-controlled Loops in Scratch
4		1.4 How do I use a computer as an artist?	2.4 What makes an excellent multimedia story?	3.4 How is data shared online?	4.4 Decomposition & Infinite Loops in Scratch	5.4 Simple Selection in Scratch
5		1.5 How do we collaborate online?	2.5 How do I communicate information using audio effectively?	3.5 How do I find and share data safely and responsibly?	4.5 Selection & Variables in Scratch	5.5 Simulating Physical Systems
6		1.6 How do I use a computer as a designer?	2.6 What makes an excellent film?	3.6 Why do we use spreadsheets?	4.6 Complex Programs in Scratch	5.6 Real-world Applications

Computing Concepts	<p>Text and Images : Hardware, content, software, personal information, input/output, Text, Image, audio, creating content, editing, multimedia, video, world wide web, internet</p> <p>Communication and Multimedia: software application, creating and editing content, text, image, audio, video, copyright, personal information, animation, onion skinning, photostory, transition, design process</p> <p>Understanding and sharing data: software application, personal information, information and data, chart, pictogram, branching databases, flat file data bases, web browser, spreadsheet</p> <p>Computational Thinking A and B : computer, algorithm, program, sequence, robot, debugging, evaluation, decomposition, events, input, sensor, selection, digital footprint, variable, procedure, logic</p>
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Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
FS	<p style="text-align: center;">We Control technology</p> <p>Ia - What is a Computer? Ib - We Control Technology Ic - Tinkering: Bee-Bots</p> <p>This strand supports the EYFS educational programme for Understanding the World by helping children to foster their understanding of a technological diverse world. In addition it prepares the children for learning Computational Thinking skills in KSI.</p> <p>Online Safety Links: Online Safety & Digital Literacy</p>		<p style="text-align: center;">Communication Multimedia</p> <p>2a - Digital Art 2b - Sound & Music 2c - Photographs 2d - Films & Animation 2e - eBooks</p> <p>This strand encourages the use of technology to support literacy and in other subject areas such as music and art.</p> <p>Online Safety Links: Online Safety & Digital Literacy</p> <p>Feeling Safe (S2) - what to do if they see something they don't like.</p>		<p style="text-align: center;">Communication Data</p> <p>3a - Counting 3b - Sorting</p> <p>This strand demonstrates how technology can be used to support numeracy, and prepares pupils for working with data in Computing in KSI.</p> <p>Online Safety Links: Online Safety & Digital Literacy</p> <p>Feeling Safe (S2) - what to do if they see something they don't like. Personal Information (S3) - understand that some information</p>		

	<p>Sleep (L1) - understand that screen time can affect sleep. Choosing what to do online (L2) - deciding on what is appropriate to watch and play online. Communicating online (S1) - how do they use technology to communicate? Feeling Safe (S2) - what to do if they see something they don't like. Personal Information (S3) - understand that some information is private, and shouldn't be shared.</p>	<p>Personal Information (S3) - understand that some information is private, and shouldn't be shared Choosing what to do online (L2) - deciding on what is appropriate to watch, listen to and play online. Sleep (L1) - understand that screen time can affect sleep. Choosing what to do online (L2) - deciding on what is appropriate to watch and play online.</p>	<p>is private, and shouldn't be shared.</p>			
<p>Year 1</p>	<p>Unit 0.1 What is a computer? Entering: Pupils use a range of digital devices and understand that you can access content on a digital device. They use a mouse, touchscreen or appropriate access device to target and select</p>		<p>Unit 2.1 How do I use sounds and pictures Entering: Pupils use technology to explore and access digital content. They operate a digital device with support to fulfil a task, e.g. taking a photograph, and create simple</p>	<p>Unit 3.1 How do I present data using pictures? Entering: Pupils sort familiar objects into one or more categories. They collect simple data (e.g. likes/dislikes) on a topic and answer basic questions about information displayed in</p>	<p>4.1 What is an algorithm? Entering: Pupils explore technology and try alternative approaches to achieve a goal. They understand that we control computers and can follow instructions to control a digital device. They can</p>	<p>5.1 What is a program? Entering: Pupils understand that we control computers. They can follow simple instructions to control a digital device, and recognise the success or failure of an action.</p>

	<p>options on screen.</p> <p>Developing: Pupils recognise a range of digital devices, and the basic parts of a computer or tablet, e.g. mouse, keyboard, screen.</p> <p>They understand that you can access the same content on different devices and that information can be stored on a computer.</p> <p>They can add text to a document using the keyboard (where appropriate).</p> <p>Pupils understand that information and media can be stored on a digital device, e.g. they</p>		<p>digital content.</p> <p>Pupils choose photos and sounds from a limited selection to convey information.</p> <p>They are aware that information can be public or private, and that some online content is inappropriate.*</p> <p>Developing: Pupils choose a digital device from a selection to complete a specific task, e.g. to take a photograph. They select media (e.g. images, video, sound) to present information on a topic and understand that you can edit and change digital content.</p> <p>They recognise</p>	<p>images, e.g. more or less.</p> <p>They can present simple data using images.</p> <p>Pupils are aware that information can be public or private.*</p> <p>Developing: Pupils can recognise charts and tables, and understand why we use them.</p> <p>They collect simple data on a topic (eye colour, pets etc.) and use specific software to create simple charts.</p> <p>Pupils can explain information shown in a simple pictogram.</p> <p>They understand what personal information is</p>	<p>order the steps of a known task, and recognise patterns in groups of objects.</p> <p>Developing: Pupils understand that we control computers by giving them instructions.</p> <p>They can identify and list steps of a known task in order, and understand that this is called an algorithm. They can input a short sequence of instructions to control a digital device.</p> <p>Secure: Pupils can create a simple algorithm, and understand that the order of instructions is important.</p>	<p>Developing: Pupils understand that we control computers by giving them instructions.</p> <p>They can input a short sequence of instructions to control a digital device. They try alternative approaches to achieve a goal.</p> <p>Secure: Pupils understand what an algorithm is and they understand that the order of instructions is important.</p> <p>They understand that computers have no intelligence and we have to program them to do things.</p> <p>Pupils can create a simple program e.g. to</p>
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	<p>ask to view a photo that has been taken on a tablet</p> <p>Secure: Pupils can name a range of digital devices in the home and at school. They can explain what the basic parts of a computer are used for, e.g. mouse, screen, and keyboard. Pupils understand that you can find information on a website, and use a simple password when logging on. They understand that you can share digital content.</p> <p>Concepts: Machines Data</p>		<p>inappropriate content and know to tell an appropriate adult*</p> <p>Secure: Pupils combine media with support to present information, e.g. text and images, and select basic options to change the appearance of digital content. They understand that you can share digital content online.* They understand that digital images belong to the person that first created them.* Pupils understand what personal information is and the need to</p>	<p>and the need to keep it private*</p> <p>Secure: Pupils can collect data and present it in a pictogram independently. They explain information shown in a simple chart, pictogram or infographic.</p> <p>Concepts: Program Data Algorithm</p>	<p>Pupils understand that computers have no intelligence and we have to program them to do things. Pupils can create a simple program.</p> <p>Concepts: Program Data Algorithm</p>	<p>control a floor robot. They can debug an error in and predict the outcome of a simple program.</p> <p>Concept: Logic Algorithm Data Program</p>
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	<p>Online Safety Links: C2: What is the internet</p> <p>1.1 How do I use school technology independently?</p> <p>Entering: Pupils use technology to explore and access digital content. They create simple digital content, e.g. add basic text to a document that is already open. Pupils choose media to convey information from a selection. Pupils are aware that information can be public or private.*</p> <p>Developing: Pupils understand that you can edit and change</p>		<p>keep it private.* They know who to tell if concerned about content or contact online.*</p> <p>Concepts: Logic Program Data</p> <p>Online Safety Links P1: Online Strangers P2: Feeling uncomfortable online</p>			
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	<p>digital content, e.g. the appearance of text. They select media (e.g. images) to present information on a topic.</p> <p>They select basic options to change the appearance of digital content, e.g. making text bold. Pupils recognise what is personal information.*</p> <p>Secure:</p> <p>Pupils can apply simple edits to digital content to achieve a particular effect, e.g. change the font of text for a reason.</p> <p>They combine media with support to present information, e.g. they choose images to</p>					
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	<p>accompany text from a selection. They understand that digital images belong to the person that created them, and save and reuse content found online.* Pupils recognise what is personal information and understand the need to keep it private.*</p> <p><u>Concepts:</u></p> <p>Machine Data Program Abstraction</p> <p>Online Safety Links sl: Personal Information</p>					
Year 2	0.2	3.2	1.2	2.2	4.2	5.2

	<p>What is a computer?</p> <p>Entering: Pupils recognise a range of digital devices, and the basic parts of a computer, e.g. mouse, keyboard, screen. They understand that you can access the same content on different devices and that information can be stored on a computer. They can add text to a document using the keyboard (where appropriate). Pupils understand that information and media can be stored on a digital device, e.g. they ask to view a photo that has been taken on a tablet.</p> <p>Developing:</p>	<p>What is a branching database?</p> <p>3.2 What is a branching database?</p> <p>Entering: Pupils can identify an object by asking yes/no questions. They can recognise a branching database, and understand why we use them. They can distinguish between text, image, video and audio content. They understand what personal information is and the need to keep it private* Developing: Pupils can create a branching database using pre-prepared</p>	<p>How do I use a computer as a writer?</p> <p>Entering: Pupils understand that you can edit and change digital content, e.g. the appearance of text. They select basic options to change the appearance of digital content, e.g. making text bold. They select media (e.g. images) to present information on a topic. Pupils recognise what is personal information and can describe what makes a good friend.* They recognise inappropriate content and know to tell an</p>	<p>How do I create a multimedia story?</p> <p>Entering: Pupils select media (e.g. images, video, sound) to present information on a topic and understand that you can edit and change digital content. They recognise inappropriate content and know to tell an appropriate adult.* They understand that you can share digital content online.* Developing: Pupils combine media with support to present information, e.g. images and sound, and select basic options to change the appearance of digital content.</p>	<p>Extending programs with Bee Bot</p> <p>Entering: Pupils understand that we control computers by giving them instructions. They can identify and list steps of a known task in order, and understand that this is called an algorithm. They can create a short sequence of instructions to control a device. Developing: Pupils can create a simple algorithm, and understand that the order of instructions is important. They can debug an error in a simple algorithm or program, and predict the outcome of an</p>	<p>Simple drawing programs</p> <p>Entering: Pupils understand that we control computers by giving them instructions - an algorithm. They can identify and list steps of a known task in order, and create a short sequence of instructions to control a device. They can recognise if a program is successful. Developing: Pupils understand what an algorithm is and they understand that the order of instructions is important. They understand that computers have no intelligence and we have to</p>
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	<p>Pupils can name a range of digital devices in the home and at school.</p> <p>They can explain what the basic parts of a computer are used for, e.g. mouse, screen, and keyboard.</p> <p>Pupils understand that you can find information on a familiar website, and use a simple password when logging on.*</p> <p>They understand that you can share digital content. Secure: Pupils recognise and use a range of input and output devices, e.g. mouse, keyboard, microphone / printer, speakers, monitor.</p> <p>They recognise that a range of devices contain computers, e.g.</p>	<p>images and questions.</p> <p>They can identify an object using a branching database.</p> <p>They can recognise an error in a branching database.</p> <p>Pupils understand that you can find out information in different formats, e.g. text, video, audio.</p> <p>Secure: Pupils independently plan out and create a simple branching database to identify a set of objects. They understand that the questions you ask when collecting data are important.</p> <p>They can evaluate a given branching database and suggest improvements.</p> <p>Pupils explain how</p>	<p>appropriate adult.*</p> <p>Developing: Pupils can apply simple edits to digital content to achieve a particular effect, e.g. change the font of text for a reason.</p> <p>They combine media with support to present information, e.g. they choose images to accompany text from a selection.</p> <p>They save and reuse digital content found online, and understand that digital images belong to the person that created them*</p> <p>Pupils recognise what personal information is. and understand the need to keep it private*</p> <p>They know who to tell if concerned</p>	<p>They understand that digital images belong to the person that first created them.*</p> <p>Pupils understand what personal information is and the need to keep it private.*</p> <p>They know who to tell if concerned about content or contact online.*</p> <p>Secure: Pupils plan out digital content and present ideas and information by combining media independently.</p> <p>They apply edits to digital content to achieve a particular effect.</p> <p>They talk about what makes digital content good or bad and edit it to improve it.</p> <p>They understand that the digital content we make belongs to us and</p>	<p>algorithm or program.</p> <p>Pupils understand that computers have no intelligence and we have to program them to do things.</p> <p>Pupils can create a simple program e.g. to control a floor robot.</p> <p>Secure: Pupils understand that instructions need to be clear and unambiguous in an algorithm.</p> <p>They can evaluate the success of an algorithm</p> <p>Concepts: Program Algorithm</p> <p>Online Safety Links: L2: Choosing what to do online</p>	<p>program them to do things.</p> <p>Pupils can create a simple program e.g. to control a floor robot.</p> <p>They can debug an error in and predict the outcome of a simple program.</p> <p>Secure: Pupils evaluate the success of an algorithm or program.</p> <p>They identify and correct errors in a given algorithm or program. They understand that we can decompose a problem into smaller steps to make it simpler.</p> <p>Concept: Program Algorithm Data</p>
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	<p>washing machine, car, laptop. They know where to save and open work and understand that work saved on a computer at school can be opened on a different computer or device. Pupils understand that you can use a search engine to find information using keyword searches. They remember a username and password for logging on, and understand that all devices, programs, websites, apps and games are designed and manufactured by real people to fulfil specific tasks.*</p> <p>Concepts: Machine Program Data</p>	<p>different formats e.g. text, images, audio, communicate information and their benefits. They understand that our personal information belongs to us and why we shouldn't share it with everybody* They know who to tell if concerned about content or contact online*</p> <p>Concepts: Data Program</p>	<p>about content or contact online.* Secure: Pupils plan out digital content, and present ideas and information by combining media independently. They edit digital content to improve it. They understand what makes a good online friend and the need to be kind and thoughtful online as in the real world.* Pupils can identify rules to add to an acceptable use policy for the class.* Pupils understand that the digital content we make belongs to us and others need to ask permission to use it.*</p> <p>Concepts: Machine</p>	<p>others need to ask permission to use it*</p> <p>Concepts: Logic Program Machine</p> <p>Online Safety Links: S3: Communicating Online</p>		
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	<p>Online Safety Links L1: Screen Time</p>		<p>Program Data</p> <p>Online Safety Links: S2: Being Kind Online P3: Searching Safely</p>			
<p>Year 3</p>	<p>0.3 Key Skills: Using school computers Entering: Pupils can name a range of digital devices in the home and at school. They can explain what the basic parts of a computer are used for, e.g. mouse, screen, keyboard. Pupils understand that you find information on a familiar website, and use a simple password when</p>	<p>4.3 How do I use repetition in programs to make them more efficient? Entering: Pupils can create a simple algorithm, and understand that the order of instructions is important. They can debug an error in a simple algorithm or program, and predict the outcome of an algorithm or program. Pupils understand</p>	<p>5.3 How do I use forever loops in programs? Entering: Pupils understand what an algorithm is and they understand that the order of instructions is important. They understand that computers have no intelligence and we have to program them to do things. Pupils can create a simple program e.g. to control a floor robot.</p>	<p>2.3 How do I use a computer as a musician? Entering: Pupils combine media with support to present information, e.g. images and music, and select basic options to change how a piece of music or audio sounds. They understand that music belongs to the person that first created it.* Developing: Pupils plan out digital content</p>	<p>3.3 How do we use databases to find out information? Entering: Pupils collect data on a topic (e.g. eye colour, pets etc.) They can answer basic questions about the information stored in a record card database. Pupils understand that you can find out information in different formats, e.g. text, video, audio. Developing: Pupils appreciate</p>	

	<p>logging on. They understand that you can share digital content.</p> <p>Developing: Pupils recognise and use a range of input and output devices, e.g. mouse, keyboard, microphone / printer, speakers, monitor.</p> <p>They recognise that a range of devices contain computers, e.g. washing machine, car, laptop.</p> <p>They know where to save and open work and understand that work saved on a computer at school can be opened on a different computer.</p> <p>Pupils understand that you can use a search engine to find information using keyword searches.</p>	<p>that computers have no intelligence and we have to program them to do things.</p> <p>Developing: Pupils understand that instructions need to be clear and unambiguous in an algorithm. They can evaluate the success of an algorithm or program, and identify and correct errors (debugging).</p> <p>Secure: Pupils use repetition to make programs more efficient. They plan out their programs and algorithms, and test the effectiveness of their algorithm. Pupils use the language if... then... to describe the relationship</p>	<p>They can debug an error in and predict the outcome of a simple program.</p> <p>Developing: Pupils evaluate the success of an algorithm or program. They identify and correct errors in a given algorithm or program. They understand that we can decompose a problem into smaller steps to make it simpler. Pupils use the language if... then to describe the relationship between two actions. They recognise loops in a program and can make simple changes to a block-based program to change it.</p> <p>Secure: Pupils use</p>	<p>and present ideas by combining media independently</p> <p>They apply edits to digital content to achieve a particular effect. They talk about what makes digital content good or bad and edit it to improve it. They understand that the digital content we make belongs to us and others need to ask permission to use it.*</p> <p>Secure: Pupils edit existing digital content to make a new version with an awareness of copyright. They evaluate existing and their own digital content, and edit it to improve it according to feedback. They design and create</p>	<p>that different programs work with different types of data, e.g. text, number. Pupils explore a record database to find out information. They use filters in a database to find out specific information. They understand that the questions you ask are important, when collecting data. They know that there is a difference between data and information. They understand that our personal information belongs to us and why we shouldn't share it with everybody.*</p> <p>Secure: Pupils understand the benefits of using a computer to create charts and databases. They can design a</p>	
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	<p>They remember a username and password for logging on, and understand that all devices, programs, websites, apps and games are designed and manufactured by real people to fulfil specific tasks.</p> <p>Secure: Pupils can open and save a file to a suitable folder, and use suitable file names when saving work. They understand that school computers can be connected and they may use a shared area for saving work. They type using all fingers. Pupils use a search engine to find information using keyword searches.</p> <p>Concepts:</p>	<p>between two actions.</p> <p>Concepts:</p> <p>Algorithm Data Program Logic</p>	<p>repetition to make programs more efficient.</p> <p>They predict the outcome of a block-based program, and can remix and change an existing program.</p> <p>They plan out programs by writing algorithms. They use forever loops in a program</p> <p>Concepts: Algorithm Program Data</p>	<p>digital content for a specific purpose.</p> <p>Pupils understand that people can give permission for others to use their content e.g. using Creative Commons.*</p> <p>Concepts: Logic Algorithm Data</p>	<p>questionnaire and collect a range of data, enter data into a database package and test.</p> <p>Pupils draw conclusions from information stored in a database. They understand when to share personal information and when not to.*</p> <p>Concepts: Algorithm Data Program Online Safety Links: C2: Personal Information</p>	
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Machine
Logic
Online Safety
Links
LI: Screen Time

1.3 What makes a good poster?

Entering:

Pupils can apply simple edits to digital content to achieve a particular effect, e.g. change the size of text. They combine media with support to present information.

They save and reuse digital content found online and understand that digital images belong to the person that created them*

Pupils recognise what is personal information and understand the need to keep it private.*

They know who to tell if concerned about content or contact online.*

Developing:

Pupils plan out digital content, and present ideas and information by combining media independently.

They save and reuse digital content found online.*

They talk about what makes digital content good or bad and edit digital content to improve it. Pupils understand that the digital content we make belongs to us and others need to ask permission to use it.*

Secure:

Pupils use a variety of software to combine media in order to present information.

They evaluate

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	<p>existing and their own digital content and edit their own content to improve it according to feedback.</p> <p>Pupils understand that people can give permission for others to use their pictures e.g. using Creative</p> <p>They know different ways of reporting unacceptable content and contact online.*</p> <p>Concepts:</p> <p>Machine Data Program</p>					
<p>Year 4</p>	<p>0.4 - Key Skills Using School Computers and Networks Effectively</p> <p>Entering: Pupils recognise and use a range of input and output devices, e.g.</p>	<p>3.4 How is data shared online?</p> <p>Entering: Pupils appreciate that different programs work with different types of data, e.g. text, number. They use</p>	<p>4.4 How do I use decomposition to help me write programs?</p> <p>Entering: Pupils understand that instructions need to be clear and unambiguous in an algorithm.</p>	<p>5.4 How do I use selection to change what happens in programs?</p> <p>Entering: Pupils evaluate the success of an algorithm or program. They identify and</p>	<p>2.4 What makes an excellent multimedia story?</p> <p>Entering: Pupils plan out digital content and present ideas by combining media independently They apply edits to digital content to achieve a particular effect. They talk about what makes digital content good or bad and edit it to</p>	

	<p>mouse, keyboard, microphone / printer, speakers, monitor.</p> <p>They recognise that a range of devices contain computers, e.g. washing machine, car, laptop.</p> <p>They know where to save and open work and understand that work saved on a computer at school can be opened on a different computer.</p> <p>Pupils understand you can use a search engine to find information using keyword searches.</p> <p>They remember a username and password for logging on, and understand that all devices, programs, websites, apps and games are designed and manufactured by</p>	<p>specific software to create charts.</p> <p>They know that there is a difference between data and information.</p> <p>Pupils understand that the Internet is made up of computers from all around the world connected together, and that not all information found online is true.*</p> <p>Developing: Pupils understand the benefits of using a computer to create charts and databases.</p> <p>They can design a questionnaire and collect a range of data.</p> <p>They can present data effectively in a chart or database.</p> <p>Pupils draw conclusions from</p>	<p>They can evaluate the success of an algorithm or program, and identify and correct errors (debugging).</p> <p>Pupils predict the outcome of a block-based program.</p> <p>Developing: Pupils use repetition to make programs more efficient.</p> <p>They plan out programs using algorithms. and can evaluate the effectiveness of their algorithm by testing it using an appropriate program.</p> <p>They understand that we can decompose a problem into smaller steps to make it simpler.</p> <p>Pupils use the language if... then to describe the</p>	<p>correct errors in a given algorithm or program.</p> <p>They understand that we can decompose a problem into smaller steps to make it simpler.</p> <p>Pupils use the language if... then to describe the relationship between two actions.</p> <p>They recognise loops in a program and can make simple changes to a block-based program to change it.</p> <p>Developing: Pupils use repetition to make programs more efficient.</p> <p>They predict the outcome of a block-based program, and can remix and change an existing program.</p> <p>They plan out</p>	<p>improve it.</p> <p>They understand that the digital content we make belongs to us and others need to ask permission to use it.*</p> <p>Developing: Pupils evaluate existing and their own digital content, and edit it to improve it according to feedback.</p> <p>They design and create digital content for a specific purpose.</p> <p>Pupils understand that people can give permission for others to use their content e.g. using Creative Commons.*</p> <p>They understand that games and films have age ratings, and what that means.*</p> <p>Secure: Pupils collect, organise and present information effectively using a range of media.</p> <p>They use more complex tools to edit and enhance media for a particular effect.</p> <p>They can rate a game or film they have made and explain their rating.*</p> <p>Concepts: Logic Abstraction Data</p> <p>Online Safety Links C2: Personal Information</p>
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	<p>real people to fulfil specific tasks.</p> <p>Developing: Pupils can open and save a file to a suitable folder, and use suitable file names when saving work. They understand that school computers can be connected and they may use a shared area for saving work. They type using all fingers. Pupils use a search engine to find information using keyword searches.</p> <p>Secure: Pupils understand that you can organise files using folders, and can delete, move and copy files. They use right-click, left-click and double-click appropriately on a</p>	<p>information presents in charts, tables and databases. They know different ways of reporting unacceptable content and contact online.* They understand when to share personal information and when not to.*</p> <p>Secure: Pupils understand that school computers are connected together in a network. They understand that we use a web browser to access information stored on the Internet and can explain simply how the Internet works. Pupils can present data in a number of different ways to convey information.</p>	<p>relationship between two actions.</p> <p>Secure: Pupils use forever loops in a program. They decompose a problem and create a solution for each step. Pupils create a program using a range of events/inputs to control what happens</p> <p>Concepts:</p> <ul style="list-style-type: none"> • Algorit hm • Progra m • Data 	<p>programs using by writing algorithms. They use forever loops in a program.</p> <p>Secure: Pupils create a program using a range of events/inputs to control what happens. They use selection in algorithms and programs, i.e. if... then... They can decompose a problem and create a solution for each part.</p> <ul style="list-style-type: none"> • Conce pts: Algorithm <p>Logic</p>	
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	<p>mouse. Pupils use a search engine to find specific information, and know how to copy text and images from a web page or document into another document. Pupils remember an individual password.</p> <p>Concepts: Machine Data</p> <p>1.4 How do I use a computer as an artist or photographer?</p> <p>Entering: Pupils plan out digital content, and present ideas and information by combining media independently. They save and reuse digital</p>	<p>They are aware that some people lie about who they are online, and recognise the benefits and risks of different apps and websites.* Pupils understand that when we share content online, we might not be able to delete it.*</p> <p>Concepts: Data Program Machine</p> <p>Online Safety Links: L3: Deciding what is appropriate P2: Sharing Online</p>			
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content found online.*
They talk about what makes digital content good or bad and edit digital content to improve it.
They know who to tell if concerned about content or contact online.*
Pupils understand that the digital content we make belongs to us and others need to ask permission to use it.*
Developing:
Pupils use a variety of software to combine media in order to present information.
They evaluate existing and their own digital content and edit their own content to improve it according to feedback. They

edit existing digital content to make a new version with an awareness of copyright. Pupils understand that people can give permission for others to use their pictures e.g. using Creative Commons.*

Secure:

Pupils collect, organise and present information effectively using a range of media.

They design and create digital content for a specific purpose.

They use a range of tools to edit and enhance media for a particular effect.

Pupils collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365.

They understand

	<p>that the media can portray groups of people differently.*</p> <p>Concepts:</p> <ul style="list-style-type: none"> • Machines • Program • Data • Logic <p>Online Safety Links: C3: Copyright N1: Digital Media</p>				
Year 5	<p>0.5 - Key Skills Becoming an Efficient Computer User</p> <p>Entering: Pupils can open and save a file to a suitable folder, and use suitable file names when saving work. They understand that school computers can be connected and</p>	<p>5.5 How do I use variables to score in program? (Link to DT Computer Control Unit)</p> <p>Entering: Pupils use repetition to make programs more efficient. They predict the outcome of a block-based program, and can remix and</p>	<p>1.5 How do we collaborate online?</p> <p>Entering: Pupils evaluate existing and their own digital content and edit their own content to improve it according to feedback. They edit existing digital content to make a new version with an awareness of</p>	<p>3.5 How do I find and share data safely and responsibly?</p> <p>Entering: Pupils understand that the Internet is made up of computers from all around the world connected together, and we can use it to share information.</p>	<p>2.5 How do I create a radio advert or podcast?</p> <p>Entering: Pupils evaluate existing and their own digital content, and edit it to improve it according to feedback. They design and create digital content for a specific purpose. They edit existing</p>

	<p>they may use a shared area for saving work. They type using all fingers. Pupils use a search engine to find information using keyword searches.</p> <p>Developing: Pupils understand that you can organise files using folders, and can delete, move and copy files. They use right-click, left-click and double-click appropriately on a mouse. Pupils use a search engine to find specific information, and know how to copy text and images from a web page or document into another document.</p> <p>Secure: Pupils use the</p>	<p>change an existing program. They plan out programs using by writing algorithms. They use forever loops in a program</p> <p>Developing: Pupils create a program using a range of events/inputs to control what happens. They use selection in algorithms and programs, i.e. if... then... They can decompose a problem and create a solution (sub-routine) for each part. Pupils recognise variables in a program.</p> <p>Secure: Pupils predict what will happen in a program or algorithm (e.g. change of output)</p>	<p>copyright. They understand that the Internet is made up of computers from all around the world connected together and that not all information found online is true.* Pupils understand that people can give permission for others to use their pictures.* Pupils understand that when we share content online, we might not be able to delete it.*</p> <p>Developing: Pupils collect, organise and present information effectively using a range of media. They design and create digital content for a specific purpose. Pupils collaborate with peers using</p>	<p>They understand that we use a web browser to access information stored on the Internet. They know different ways of reporting unacceptable content and contact online.* They understand when to share personal information and when not to.* Pupils recognise what kind of websites are trustworthy sources of information.*</p> <p>Developing: Pupils understand that school computers are connected together in a network. They understand the difference between the Internet and the World Wide Web, and between a search engine and a web browser.</p>		<p>digital content to make a new version with an awareness of copyright. Pupils understand that people can give permission for others to use their content e.g. using Creative Commons.*</p> <p>Developing: Pupils collect, organise and present information effectively using a range of media. They use more complex tools to edit and enhance media for a particular effect.</p> <p>Secure: Pupils identify and use appropriate hardware and software to fulfil a specific task. They remix and edit a range of existing and their</p>
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	<p>keyboard confidently to type at a suitable pace, and can use common keyboard shortcuts, e.g. Ctrl + C (copy); Ctrl + V (paste). They create and use a strong password where appropriate. They organise their files using folders and appropriate file names.</p> <p>Concept: Machine Logic</p> <p>Online Safety Links:</p> <p>C3 Passwords</p> <p>4.5 How do I program a physical system? (Link to DT Computer Control Unit)</p>	<p>when the input changes (e.g. via sensor, data or event). They create programs including repeat until loops. They create simple variables, e.g. to keep score or remove lives in a game and understand the difference and use if... then... and if... then... else... statements.</p> <p>Concept: Algorithm Program Data</p>	<p>online tools, e.g. blogs, Google Drive, Office 365. They understand that we use a web browser to access information stored on the Internet. They recognise what kind of websites are trustworthy sources of information and the benefits and risks of different apps and websites.*</p> <p>Secure: Pupils select, combine and use Internet services to fulfil a purpose. They recognise the audience when designing and creating digital content. They understand the difference between the Internet and the World Wide Web and the benefits of using technology to</p>	<p>They are aware that some people lie about who they are online, and recognise the benefits and risks of different apps and websites.* Pupils demonstrate responsible use of online services and technologies, and know a range of ways to report concerns.*</p> <p>Secure: Pupils understand the difference between physical, mobile and wireless networks. They can explain the difference between the World Wide Web and the Internet. They understand the basics of how search engines work, and that different search engines may give different</p>		<p>own media to create content. They recognise the audience when designing and creating digital content. Pupils know where to find copyright free images and audio, and why this is important.*</p> <p>Concept: Abstraction Program Data</p> <p>Online Safety Links: C4: Copyright</p>
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	<p>Entering: Pupils use repetition to make programs more efficient. They plan out programs by writing algorithms and can evaluate the effectiveness of their algorithm by testing it using an appropriate program. They understand that we can decompose a problem into smaller steps to make it simpler. Pupils predict the outcome of a program.</p> <p>Developing: Pupils use forever loops and selection (if...then...) in a program. They decompose a problem and create a solution (sub-routine)</p>		<p>collaborate with others. They are aware of a range of Internet services, e.g. email, VOIP (Voice Over Internet Protocol e.g. Skype, FaceTime), World Wide Web, and what they do. They recognise the audience when designing and creating digital content. Pupils demonstrate responsible use of online services and technologies, and know a range of ways to report concerns.* They critically evaluate websites for reliability of information and authenticity.*</p> <p>Concept: Abstraction Machines Data</p>	<p>results. Pupils perform complex searches for information using advanced settings in search engines. They critically evaluate websites for reliability of information and authenticity.* They become increasingly savvy online consumers: know that algorithms are used to track online activities with a view to targeting advertising and information.*</p> <p>Concept: Algorithm Program Data</p> <p>Online Safety Link SI: Control and Consent</p>		
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	<p>for each step. They use procedures in programs to create a sub-routine. Pupils create a program using a range of events/inputs to control what happens. Secure: Pupils predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event). They create programs including repeat until loops and recognise variables in a program.</p> <p>Concept: Algorithm Data Program</p>		<p>Online Safety Link: N2: Fake News PI: Protecting your identity P2 Protecting images of us online</p>	<p>C2: Personal Information, Terms and Conditions N3: Verifying Information online</p>		
Year 6		2.6 What makes an excellent film?	4.6 How do I build complex physical systems?	5.6 How do I design more complex programs?	3.6 Why do we use spreadsheets?	

**0.6 - Key Skills :
Understanding the
Computer**

Entering:

Pupils understand that you can organise files using folders, and can delete, move and copy files. They use right-click, left-click and double-click appropriately on a mouse.

Pupils use a search engine to find specific information, and know how to copy text and images from a web page or document into another document.

Developing:

Pupils use the keyboard confidently to type at a suitable pace, and can use common keyboard

Entering:

Pupils collect, organise and present information effectively using a range of media. They use more complex tools to edit and enhance media for a particular effect.

They can rate a game or film they have made and explain their rating.*

Developing:

Pupils identify and use appropriate hardware and software to fulfil a specific task.

They remix and edit a range of existing and their own media to create content.

They recognise the audience when designing and creating digital content. Pupils

(Link to DT
Computer control
Unit)

Entering:

Pupils use forever loops and selection (if...then...) in a program.

They decompose a problem and create a solution (sub-routine) for each step.

They use procedures in programs to create a sub-routine.

Pupils create a program using a range of events/inputs to control what happens.

Developing:

Pupils predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event).

They create

(Link to DT
Computer control
Unit)

Entering:

Pupils create a program using a range of events/inputs to control what happens.

They use selection in algorithms and programs, i.e. if... then...

They can decompose a problem and create a solution (sub-routine) for each step.

Pupils recognise variables in a program.

Developing:

Pupils predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. via sensor, data or event).

They create

Entering:

Pupils know that there is a difference between data and information.

They can design a questionnaire and collect a range of data on a theme.

They can enter data in a spreadsheet and answer simple questions about information stored in a spreadsheet.

Developing:

Pupils understand what a spreadsheet is and what it is used for.

They use simple formulae in a spreadsheet to find out information from a set of data.

They produce graphs from data in a spreadsheet and evaluate data and information shown.

Secure:

Pupils understand that there are different tools for analysing data.

They can collect, organise and present data independently in a spreadsheet.

They recognise that poor quality data leads to unreliable results

Concepts

Data

Abstraction

Logic

	<p>shortcuts, e.g. Ctrl + C = copy; Ctrl + V (paste). They create and use a strong password where appropriate. They organise their files using folders and appropriate file names.</p> <p>Secure: Pupils understand that different devices can have different operating systems, and can give examples, e.g. Windows, iOS, Android, and they understand the main functions of an operating system (i.e. it determines the look and feel of the interface, the programs that run on the computer, and manages the hardware connected to it).</p>	<p>know where to find copyright free images and audio, and why this is important.*</p> <p>Secure: Pupils identify success criteria for creating digital content for a given purpose and audience. They evaluate their own content against success criteria and make improvements accordingly. They can explain why films have certain ratings.*</p> <p>Concepts Data Machines Program</p> <p>Online Safety Link: L6: Game ratings</p>	<p>programs including repeat until loops and recognise variables in a program.</p> <p>Secure: Pupils create simple variables, e.g. to keep score or remove lives in a game. They understand the difference and use if... then... and if... then... else... statements. They can combine a variable with relational operators (< = >) to determine when a program changes. Pupils can design a physical computing system that uses sensors, e.g. using a flow chart.</p> <p>Concepts Program Algorithm</p>	<p>programs including repeat until loops. They create simple variables, e.g. to keep score or remove lives in a game and understand the difference and use if... then... and if... then... else... statements.</p> <p>Secure: Pupils understand the difference between and use if... then... and if... then... else... statements. They combine a variable with relational operators (< = >) to determine when a program changes. They recognise the audience when designing and creating digital content. Pupils evaluate their own content against success</p>	
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	<p>They use more advanced searching techniques when using a search engine. Pupils recognise common file types and extensions, and know examples of why this is useful.</p> <p>Concepts: Machines</p> <p>1.6 How do I use a computer to present information effectively</p> <p>Entering: Pupils collect, organise and present information effectively using a range of media. They design and create digital content for a specific purpose. They edit their own content to improve it</p>	<p>NI: Digital Media</p>	<p>Logic</p>	<p>criteria and make improvements accordingly.</p> <p>Concepts Program Algorithm Logic</p>	
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according to feedback.
They use more complex tools to edit and enhance media for a particular effect.

Developing:

Pupils remix and edit a range of existing and their own media to create content.

They recognise the audience when designing and creating digital content.

They identify and use appropriate hardware and software to fulfil a specific task.

Secure:

Pupils identify success criteria for creating digital content for a given purpose and audience.

They evaluate their own content against

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	<p>success criteria and make improvements accordingly. They recognise common file types and extensions.</p> <p>Concepts Data Machines Abstraction</p>				
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