

Progression Map for Computing

Purpose of study

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

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

E-Safety Curriculum		
EYFS	N	<p>Throughout the year, the computing leadership team will carry out Pupil Voice. This Pupil Voice aims to find out:</p> <ul style="list-style-type: none"> • what devices the children use at home; • how often they go online; • what they do online; • if they know any of the 5 SMART online safety rules; • what information the children class as private and who they would share this information with. <p>Within EYFS, there will be a Parent Voice questionnaire handed out during Autumn 1. The aim of this questionnaire is to:</p> <ul style="list-style-type: none"> • what experience their child has had with a range of devices (e.g. tablets, PCs, game console, programmable toys, mobiles, cameras); • find out if the child uses any particular apps or has a favourite; • find out if their child uses the internet and what they use it for; • establish whether their child sees technology as just for games or whether they use technology in other ways (e.g. communication, digital literacy, etc.)
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KS1	Y1	<p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p> <p>Children will be taught:</p> <ul style="list-style-type: none"> • a unit of online safety in Autumn 1 and Summer 2 – using the 2BeSafe in a Digital World resources. • about cyberbullying, in Anti-Bullying week, during autumn 2 • to use the internet safely thinking about privacy and when to talk to a trusted adult, during Safer internet day, in Spring 1. • to remember what they have been previously taught on online safety and recall any experiences they have had throughout the year in Summer 1 • to display online safety advice for other classes, in a Federation poster competition, in Summer 2. This will serve as an amalgamation of their years learning about online safety. <p>Throughout the year, the computing leadership team will carry out Pupil Voice. This Pupil Voice aims to find out:</p> <ul style="list-style-type: none"> • what devices the children use at home; • how often they go online; • what they do online; • if they know any of the 5 SMART online safety rules; • what information the children class as private and who they would share this information with. • Input further lessons/units from the 2BeSafe in a Digital World resource within Purple Mash (in conjunction with the PSHE curriculum).
	Y2	<p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p> <p>Children will be taught:</p> <ul style="list-style-type: none"> • a unit of online safety in Autumn 1 and Summer 2 – using the 2BeSafe in a Digital World resources. • about cyberbullying, in Anti-Bullying week, during autumn 2 • to use the internet safely thinking about privacy and when to talk to a trusted adult, during Safer internet day, in Spring 1. • to remember what they have been previously taught on online safety and recall any experiences they have had throughout the year in Summer 1 • to display online safety advice for other classes, in a Federation poster competition, in Summer 2. This will serve as an amalgamation of their years learning about online safety.

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LKS2	Y3	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <ul style="list-style-type: none"> • Children will be taught a unit of e-safety in Autumn 1. • Children will explore and develop their understanding of cyber-bullying and how to prevent it in anti-bullying week (Autumn 2). • Children will learn how to use the internet safely on safer internet day. • Children will produce a poster showing their understanding of e-safety in spring 2. • Children will share their understanding of e-safety in a pupil voice in the summer term.
	Y4	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <ul style="list-style-type: none"> • Children will be taught a unit of e-safety in Autumn 1. • Children will explore and develop their understanding of cyber-bullying and how to prevent it in anti-bullying week (Autumn 2). • Children will learn how to use the internet safely on safer internet day. • Children will produce a poster showing their understanding of e-safety in spring 2. • Children will share their understanding of e-safety in a pupil voice in the summer term.
UKS2	Y5	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <ul style="list-style-type: none"> • Children will be taught a unit of e-safety in Autumn 1. • Children will explore and develop their understanding of cyber-bullying and how to prevent it in anti-bullying week (Autumn 2). • Children will learn how to use the internet safely on safer internet day. • Children will produce a poster showing their understanding of e-safety in spring 2. • Children will share their understanding of e-safety in a pupil voice in the summer term.
	Y6	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <ul style="list-style-type: none"> • Children will be taught a unit of e-safety in Autumn 1. • Children will explore and develop their understanding of cyber-bullying and how to prevent it in anti-bullying week (Autumn 2). • Children will learn how to use the internet safely on safer internet day. • Children will produce a poster showing their understanding of e-safety in spring 2. • Children will share their understanding of e-safety in a pupil voice in the summer term.

*Note: There is no statutory framework in place for computing in EYFS. Information below states **the provision** the children have, this will enable them to acquire the skills needed to accelerate their progress in the KS1 curriculum.*

Computing Curriculum

EYFS	N	<p><u>Use of Technology in Nursery</u> Technology is used to support the other areas of the curriculum through the use of appropriate apps and online games. Sometimes these are demonstrated and used on the smartboard. They may also be used on the iPads. Generally, the use of technology has to be supervised within Nursery; they become more independent as the year progresses.</p> <p>The smartboard is used every day as a means of demonstrating and rehearsing new learning (which the children might interact with using the smartboard pens) as well as for accessing songs and games on the internet. A large tablet is also used in a similar way during small group sessions. The teacher often makes a flipchart using Activ Software to support her teaching. She will also demonstrate games that the children are to be using later on the iPads.</p> <p><u>Examples of regular use of the internet</u></p> <ul style="list-style-type: none"> • Checking the weather forecast on the BBC. (supporting Ma and UW) • The website “BBC Radio School—Nursery Rhymes” is used on a daily basis. (supporting CL and EAD) • Appropriate videos (usually on YouTube). • Finding a picture (using a search engine) to show what something looks like (supporting CL) • Looking at homework activities on Purple Mash. <p><u>Examples of software which the children may interact with on the smartboard</u></p> <ul style="list-style-type: none"> • Simple City (Literacy, Maths and Understanding the World) • Activ Primary (for large drawing movements - Physical Development, Literacy and Expressive Arts and Design) <p><u>Examples of games, apps and software used by the children on iPads</u></p> <ul style="list-style-type: none"> • Top Marks games (especially for maths): Gingerbread Man Game, Underwater Counting, Teddy Counting • Simple City (Literacy, Maths and Understanding the World) • Purple Mash (Maths, Physical Development, Literacy, Understanding the World, Expressive Arts and Design) • From time to time the children are encouraged to take photos to record what they have seen, for example in the forest to support Science learning. <p><u>Unplugged activities</u> As a simple introduction to programming, the children are encouraged to look for and copy patterns (for example when threading coloured beads). The teacher often makes a deliberate error (eg by putting on the wrong coloured bead) then asks the child to find the “bug” and asks them to “debug” it.</p>
	R	<p><u>Provision Available</u></p> <p><u>Mini Mash on Smartboards. This is a Child Initiated Lab Activity</u></p>

- Listening, Attention and Understanding: Children listen attentively in a range of situations. They listen to stories, accurately anticipating key events and respond to what they hear with relevant comments, questions or actions. They give their attention to what others say and respond appropriately, while engaged in another activity. Children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events.
- Being Imaginative and Expressive: Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, www.2simple.com music, dance, role play and stories.
- Speaking: Children express themselves effectively, showing awareness of listeners' needs. They use past, present and future forms accurately when talking about events that have happened or are to happen in the future. They develop their own narratives and explanations by connecting ideas or events.

iPads Apps. This is a Child Initiated Lab Activity

- Bobble Write: Letter and number tracing using their fingers. This links to fine motor and literacy areas of learning.
- Fine Motor: This app allows children to trace tracks for cars, click and drag animals at the farm, trace letter shapes, join up numbered planets (in order) to allow a rocket to blast off. This links to fine motor, literacy, mathematics and understanding the world areas of learning.
- MiniMash: See skills above.
- Moose Maths Games: Maths games children can play finding more/less, working through calculations and accessing shape language. This links to the Mathematics area of learning.
- Bee-Bot App: This works in the same way the physical Beebots work, the children programme the Beebot to move around the track. The tracks are often maps of places, this links to the Understanding the World area of learning and also provides a firm foundation for KS1 computing curriculum as it links to coding and using algorithms.
- Cbeebies Playtime App: There are lots of features to this app; Alphblocks, Octonauts, Tree Fu Tom, Something Special, Make a Picture, Dinosaur Adventures, Swashbuckle, The Furchester Hotel, Go Digital, Topsy and Tim, Teletubbies. These games and activities support a wealth of areas of learning in EYFS: Literacy, Fine Motor, Understanding the World, Mathematics, Personal Social and Emotional Development.
- Feed the Monkey: Maths game where the children have to math numeral to objects. This links to the Mathematics area of learning.

Programmable Toys/Tools. This is a Child Initiated Lab Activity

- Beebots: This allows child a simple look at algorithms, through programming the beebot to navigate a map.
- Sound Post Cards: These are used in writing activities to hold a child's sentence. The children are accessing an understanding of simple recording tools. This links to Digital Literacy.
- Cameras/iPads: These can be used for children to record themselves and take pictures. This links to the being imaginative and expressive area of learning. This also links to KS1 curriculum in terms of information technology.

General PC Use. This is a Child Initiated Lab Activity

- Mouse use: This link to fine motor skills in clicking and dragging. This also allows children access to computers in readiness for using them to access the KS1 curriculum.

		<ul style="list-style-type: none"> • Purple Mash use: Through using Mini Mash and other Purple Mash tools the children become accustomed to the layout and organisation of the programme in readiness for use to access the KS1 curriculum. • Saving Work: Through repetitive modelling, children can begin to learn to save work completed on Purple Mash. This will ensure the skill becomes embedded for use in KS1. • Typing: By seeing the keyboard and typing, where appropriate, the children will begin to understand that this print has meaning and purpose. This will ensure that when they begin to use keyboards and typing more frequently in KS1, they are not introduced to the concept cold. • Opening Programmes: In opening programmes on the PCs, the children are getting used to frequently used icons (eg Microsoft Edge for the internet). This will enable children to have an understanding in readiness for KS1 curriculum. • The smartboard is used every day as a means of demonstrating and rehearsing new learning (which the children might interact with using the smartboard pens) as well as for accessing songs and games on the internet, the children often have a turn to use the smartboard during carpet sessions and occasionally it is used for lab activities. <p><u>Unplugged Activities</u> As a simple introduction to programming, the children are encouraged to look for and copy patterns (for example when threading coloured beads). The teacher often makes a deliberate error (eg by putting on the wrong coloured bead) then asks the child to find the “bug” and asks them to “debug” it. Children progress to more complex patterns from Nursery; from simple AB patterns to AAB and ABC repeating patterns.</p>		
	Computer Science	Information Technology	Digital Literacy	
KS1	Y1	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program.</p> <p>Create and debug simple programs. Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.</p>	<p>Recognise common uses of information technology beyond school. Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.</p> <p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this</p>

		<p>Use logical reasoning to predict the behaviour of simple programs. When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.</p>		<p>in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.</p>
	Y2	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code</p> <p>Create and debug simple programs. Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps.</p> <p>Use logical reasoning to predict the behaviour of simple programs. Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.</p>	<p>Recognise common uses of information technology beyond school. Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.</p> <p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.</p>
LKS2	Y3	<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>Understand computer networks, including the internet; how they can provide multiple services,</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable</p>

	<p>Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it.</p> <p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately.</p> <p>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. Children can list a range of ways that the internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open,</p>	<p>such as the World Wide Web, and the opportunities they offer for communication and collaboration. Children can list a range of ways that the internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines.</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,</p>	<p>behaviour; identify a range of ways to report concern about content and contact. Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact.</p>
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	<p>respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way.</p>	<p>analysing, evaluating and presenting data and information. Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond.</p>	
Y4	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. When turning a real life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs.</p> <p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They understand 'if statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. e.g. 2Code.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level.</p> <p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Children can explore key concepts relating to online safety using concept mapping such as 2Connect. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.</p>

		<p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. e.g. traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately</p> <p>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. Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.</p>	<p>range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software such as 2Connect and 2Publish+. Children share digital content within their community, i.e. using Virtual Display Boards.</p>	
UKS2	Y5	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.</p> <p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is and the information it contains.</p> <p>Select, use and combine a variety of software (including internet</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.</p>

	<p>Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables.</p> <p>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. Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content, e.g. 2Blog, 2Email, Display Boards.</p>	<p>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. Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. e.g. creating their own program to meet a design brief using 2Code. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content, i.e. 2Blog, Display Boards and 2Email.</p>	
Y6	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Children are able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children readily apply filters when searching for digital content. They are able to explain in detail how credible a webpage is and the information it contains. They compare a range of digital</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, e.g. 2Respond activities. They recognise the value in preserving their privacy</p>

	<p>Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Children translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.</p> <p>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. Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the internet in school.</p>	<p>content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication.</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. Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the internet, e.g. 2Blog. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.</p>	<p>when online for their own and other people's safety.</p>
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