

Waterville Primary School Progression of Skills and Vocabulary in Computing

Year 1	National Curriculum Statements		End of Year Outcomes
	<p>Computer Science</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Information Technology</p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Digital Literacy</p> <p>Recognise common uses of information technology beyond school.</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.</p>		<p>Computer Science</p> <p>Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand.</p> <p>Children can work out what is wrong with a simple algorithm when the steps are out of order and can write their own simple algorithm. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code.</p> <p>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.</p> <p>Information Technology</p> <p>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.</p> <p>Digital Literacy</p> <p>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>Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space.</p>
Prior learning	EYFS children; Explored a variety of technologies and computer programs to support their learning.		
Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Explain that an algorithm is a set of instructions (1.4, 1.5)</p> <p>Know that a computer program turns an algorithm into code that the computer can understand. (1.4, 1.7)</p> <p>Work out what is wrong when the steps are out of order in instructions (1.4, 1.5)</p> <p>Try and fix my code if it isn't working properly (1.7)</p> <p>Make good guesses of what is going to happen in a program (1.5, 1.7)</p>	<p>Sort sound, pictures and text. (1.2)</p> <p>Add sound, pictures and text to a program such as 2Create a Story. (1.6)</p> <p>Change content on a file such as text, sound and images. (1.3, 1.6, 1.7, 1.8)</p> <p>Name my work. (1.2, 1.3, 1.6, 1.7, 1.8)</p> <p>Save my work. (1.2, 1.3, 1.6, 1.7, 1.8)</p> <p>Find my work. (1.2, 1.3, 1.6, 1.7, 1.8)</p>	<p>Say what technology is. (1.9)</p> <p>Say what examples of technology are in school. (1.9)</p> <p>Say what examples of technology are at home. (1.9)</p> <p>Know that a chair uses old technology and a smart phone uses new technology. (1.9)</p> <p>Keep my login information safe. (1.1 and most units)</p> <p>Save my work in a safe place such as 'My Work' folder. (1.1 and most units)</p>

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Year 2	National Curriculum Statements	End of Year Outcomes	
	<p>Computer Science</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Information Technology</p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Digital Literacy</p> <p>Recognise common uses of information technology beyond school.</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.</p>	<p>Computer Science</p> <p>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>Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors. Children's program designs display a growing awareness of the need for logical, programmable steps.</p> <p>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>Information Technology</p> <p>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>Digital Literacy</p> <p>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. 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>Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically. 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>	
Prior learning	<p>Year 1 children;</p> <ul style="list-style-type: none"> • Explain that an algorithm is a set of instructions. • Know that a computer program turns an algorithm into code that the computer can understand. • Work out what is wrong when the steps are out of order in instructions. • Try and fix my code if it isn't working properly. • Make good guesses of what is going to happen in a program. • Sort sound, pictures and text. • Add sound, pictures and text to a program such as 2Create a Story. • Change content on a file such as text, sound and images. • Name my work. • Save my work. • Find my work. • Say what technology is. • Say what examples of technology are in school. • Say what examples of technology are at home. • Know that a chair uses old technology and a smart phone uses new technology. • Keep my login information safe. • Save my work in a safe place such as 'My Work' folder. 		
Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Explain an algorithm is a set of instructions to complete a task. (2.1)</p> <p>Know I need to carefully plan my algorithm so it will work when I make it into code. (2.1)</p> <p>Design a simple program using 2Code that achieves a purpose. (2.1)</p> <p>Find and correct some errors in my program. (2.1)</p> <p>Say what will happen in a Program. (2.1)</p> <p>Spot something in a program that has an action or effect (does something). (2.1)</p>	<p>Organise data – for example, using a database such as 2Investigate. (2.3, 2.4)</p> <p>Find data using specific searches – for example, using 2Investigate. (2.4, 2.5)</p> <p>Use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. (2.4, 2.8)</p> <p>Edit digital data such as data in music composition software like 2Sequence. (2.7 and most units)</p> <p>Name, save and find my work. (2.3, 2.4, 2.6, 2.7, 2.8 & most units)</p> <p>Include photos, text and sound in my creations. (2.8, 2.6)</p>	<p>Find information I need using a search engine. (2.5)</p> <p>Know the consequences of not searching online safely. (2.2, 2.5)</p> <p>Share work and communicate electronically – for example using 2Email or the display boards. (2.2 and others)</p> <p>Report unkind behaviour and things that upset me online, to a trusted adult. (2.2)</p> <p>See where technology is used at school such as in the office or canteen. (2.2)</p> <p>Understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g., The program used for collecting money for school trips. (2.1)</p>

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Year 3	National Curriculum Statements	End of Year Outcomes
	<p>Computer Science</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>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.</p> <p>Information Technology</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</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>Digital Literacy</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.</p>	<p>Computer Science</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>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.</p> <p>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, repetition and use of timers. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately</p> <p>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>Information Technology</p> <p>Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using internet-wide search engines.</p> <p>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> <p>Digital Literacy</p> <p>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>
Prior learning	<p>Year 2 children;</p> <ul style="list-style-type: none"> • Explain an algorithm is a set of instructions to complete a task. • Know I need to carefully plan my algorithm so it will work when I make it into code. • Design a simple program using 2Code that achieves a purpose. • Find and correct some errors in my program. • Say what will happen in a Program. • Spot something in a program that has an action or effect (does something). • Organise data – for example, using a database such as 2Investigate. • Find data using specific searches – for example, using 2Investigate. • Use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. • Edit digital data such as data in music composition software like 2Sequence. • Name, save and find my work. • Include photos, text and sound in my creations. • Find information I need using a search engine. • Know the consequences of not searching online safely. • Share work and communicate electronically – for example using 2Email or the display boards. • Report unkind behaviour and things that upset me online, to a trusted adult. • See where technology is used at school such as in the office or canteen. • Understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g., The program used for collecting money for school trips. 	

Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Base a written algorithm for a program upon a real-life situation.(3.1)</p> <p>Design an algorithm carefully, thinking about what I want the program to do and how I could turn my algorithm into code. (3.1)</p> <p>Design a program thinking logically about the sequence of steps required. (3.1 Coding)</p> <p>Experiment with timers in my programs. (3.1)</p> <p>Experiment with the effect of using repeat commands. (3.1)</p> <p>Identify the difference in using the effect of a timer or repeat command in my code. (3.1)</p> <p>Identify an error in my program and fix it. (3.1)</p> <p>Read programs with several steps and predict what it will do. (3.1)</p> <p>Identify different ways that the Internet can be used for communication. (3.5)</p> <p>Use email such as 2Email to respond to others appropriately and attach files. (3.5)</p>	<p>Carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an Internet search engine. (Across units)</p> <p>Collect data and input it into software. (3.3, 3.6, 3.8)</p> <p>Analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). (3.3, 3.6, 3.8)</p> <p>Present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). (3.3, 3.6, 3.8,3.9)</p> <p>Consider what the most appropriate software to use when given a task by my teacher. (Across units)</p> <p>Create purposeful (appropriate) content and attach this to emails. (3.3, 3.5, 3.6, 3.7, 3.8, 3.9)</p>	<p>Create a secure password. (3.2)</p> <p>Explain the importance of having a secure password and not sharing it with others. (3.2, 3.5)</p> <p>Explain the negative consequences of not keeping passwords safe and secure. (3.2, 3.5)</p> <p>Understand the importance of keeping safe online and behaving respectfully. (3.2)</p> <p>Use communication tools such as 2Email respectfully and use good etiquette. (3.2, 3.5)</p> <p>Report unacceptable content and contact online in more than one way to a trusted adult. (3.2)</p>

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Year 4	National Curriculum Statements	End of Year Outcomes
	<p>Computer Science</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>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.</p> <p>Information Technology</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</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>Digital Literacy</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.</p>	<p>Computer Science</p> <p>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>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>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. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately</p> <p>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>Information Technology</p> <p>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>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> <p>Digital Literacy</p> <p>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>
Prior learning	<p>Year 3 children;</p> <ul style="list-style-type: none"> • Base a written algorithm for a program upon a real-life situation. • Design an algorithm carefully, thinking about what I want the program to do and how I could turn my algorithm into code. • Design a program thinking logically about the sequence of steps required. • Experiment with timers in my programs. • Experiment with the effect of using repeat commands. • Identify the difference in using the effect of a timer or repeat command in my code. • Identify an error in my program and fix it. • Read programs with several steps and predict what it will do. • Identify different ways that the Internet can be used for communication. • Use email such as 2Email to respond to others appropriately and attach files. • Carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an Internet search engine. • Collect data and input it into software. • Analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). • Present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). • Consider what the most appropriate software to use when given a task by my teacher. • Create purposeful (appropriate) content and attach this to emails. • Create a secure password. • Explain the importance of having a secure password and not sharing it with others. • Explain the negative consequences of not keeping passwords safe and secure. • Understand the importance of keeping safe online and behaving respectfully. • Use communication tools such as 2Email respectfully and use good etiquette. • Report unacceptable content and contact online in more than one way to a trusted adult. 	

Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Turn a real-life situation to solve into an algorithm, using a design that shows how accomplish this in code. (4.1, 4.5)</p> <p>Use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered. (4.1)</p> <p>Use timers within my program designs more accurately to create repetition effects. (4.1)</p> <p>Use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. (4.1)</p> <p>Use variables within my program and know how to change the value of variables. (4.1)</p> <p>Use the user inputs and output features within my program, such as 'Print to screen'. (4.1)</p> <p>Identify errors in my code by using different methods, such as stepping through lines of code and fixing them. (4.1)</p> <p>Read programs that contain several steps and predict the outcomes with increasing accuracy. (4.1, 4.5)</p> <p>Recognise the main component parts of hardware which allow computers to join and form a network. (4.8)</p> <p>Understand that network and communication components can be found in many different devices which allow them to join the internet. (4.2, 4.7, 4.8)</p>	<p>Understand the purpose of a search engine and the main features within it. (4.7)</p> <p>Look at information on a webpage and make predictions about the accuracy of information contained within it. (4.7)</p> <p>Create and improve my solutions to a problem based on feedback. For example, create a program using 2Code. (4.1, 4.2)</p> <p>Review solutions that others have created, using a checklist of criteria. (4.1, 4.2)</p> <p>Work collaboratively to create content and solutions. (4.1, 4.3, 4.4,48)</p> <p>Share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. (Across units)</p>	<p>Have a good understanding of the online safety rules we learn at school. (4.2 & across curriculum)</p> <p>Demonstrate how to use different online technologies safely. (4.2 & across curriculum)</p> <p>Demonstrate how to use a few different online services safely. (4.2 & across curriculum)</p> <p>Know I have a right to privacy both on and offline. (4.2 & across curriculum)</p> <p>Recognise that my wellbeing can be affected by how I use technology. (4.2 & across curriculum)</p> <p>Report with ease any concerns with content and contact online and know immediate strategies to keep safe. (4.2 & across curriculum)</p>

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Year 5	National Curriculum Statements	End of Year Outcomes
	<p>Computer Science</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>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.</p> <p>Information Technology</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</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>Digital Literacy</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.</p>	<p>Computer Science</p> <p>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>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>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>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>Information Technology</p> <p>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>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> <p>Digital Literacy</p> <p>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>
Prior learning	<p>Year 4 children;</p> <ul style="list-style-type: none"> • Turn a real-life situation to solve into an algorithm, using a design that shows how accomplish this in code. • Use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered. • Use timers within my program designs more accurately to create repetition effects. • Use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. • Use variables within my program and know how to change the value of variables. • Use the user inputs and output features within my program, such as 'Print to screen'. • Identify errors in my code by using different methods, such as stepping through lines of code and fixing them. • Read programs that contain several steps and predict the outcomes with increasing accuracy. • Recognise the main component parts of hardware which allow computers to join and form a network. • Understand that network and communication components can be found in many different devices which allow them to join the internet. • Understand the purpose of a search engine and the main features within it. • Look at information on a webpage and make predictions about the accuracy of information contained within it. • Create and improve my solutions to a problem based on feedback. For example, create a program using 2Code. • Review solutions that others have created, using a checklist of criteria. • Work collaboratively to create content and solutions. • Share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. • Have a good understanding of the online safety rules we learn at school. • Demonstrate how to use different online technologies safely. • Demonstrate how to use a few different online services safely. • Know I have a right to privacy both on and offline. • Recognise that my wellbeing can be affected by how I use technology. • Report with ease any concerns with content and contact online and know immediate strategies to keep safe. 	

Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Make more complex real-life problems into algorithms for a program. (5.1)</p> <p>Test and debug my programs as I work. (5.1, 5.5)</p> <p>Convert (translate) algorithms that contain sequence, selection and repetition into code that works. (5.1)</p> <p>Use sequence, selection, repetition, and some other coding structures in my code. (5.1)</p> <p>Organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. (5.1)</p> <p>Use logical methods to identify the cause of any bug with support to identify the specific line of code. (5.1)</p> <p>Know the importance of computer networks and how they help solve problems and enhance communication. (5.2)</p> <p>Recognise the main dangers that can be perpetuated via computer networks. (5.2)</p> <p>Explain what personal information is and know strategies for keeping this safe. (5.2) use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. (5.2 & others)</p>	<p>Search precisely when using a search engine. For example, I know add additional words or removes words to help find better results. (5.2)</p> <p>Explain in detail how accurate, safe and reliable the content is on a webpage. (5.2)</p> <p>Make appropriate improvements to digital work I have created. (Across units)</p> <p>Comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. (Across units)</p> <p>Work collaboratively with others creating solutions to problems using appropriate software such as 2Code. (Across units)</p> <p>Use collaborative modes such as within 2Connect to work with others and share it. (5.7)</p>	<p>Have a secure knowledge of online safety rules taught at school. (5.2 & across units)</p> <p>Demonstrate the safe and respectful use of different online technologies and online services. (5.2 & across units)</p> <p>Always relate appropriate online behaviour to my right to have personal privacy. (5.2 & across units)</p> <p>Know how to not let my mental wellbeing or others be affected by use of online technologies and services. (5.2 & across units)</p>

Waterville Primary School Progression of Skills and Vocabulary in Computing

Year 6	National Curriculum Statements	End of Year Outcomes
	<p>Computer Science</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>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.</p> <p>Information Technology</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</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>Digital Literacy</p> <p>Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.</p>	<p>Computer Science</p> <p>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>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>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>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>Information Technology</p> <p>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 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>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>Digital Literacy</p> <p>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 when online for their own and other people's safety.</p>
Prior learning	<p>Year 5 children;</p> <ul style="list-style-type: none"> • Make more complex real-life problems into algorithms for a program. • Test and debug my programs as I work. • Convert (translate) algorithms that contain sequence, selection and repetition into code that works. • Use sequence, selection, repetition, and some other coding structures in my code. • Organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. • Use logical methods to identify the cause of any bug with support to identify the specific line of code. • Know the importance of computer networks and how they help solve problems and enhance communication. • Recognise the main dangers that can be perpetuated via computer networks. • Explain what personal information is and know strategies for keeping this safe. • use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. • Search precisely when using a search engine. For example, I know add additional words or removes words to help find better results. • Explain in detail how accurate, safe and reliable the content is on a webpage. • Make appropriate improvements to digital work I have created. • Comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. • Work collaboratively with others creating solutions to problems using appropriate software such as 2Code. • Use collaborative modes such as within 2Connect to work with others and share it. • Have a secure knowledge of online safety rules taught at school. • Demonstrate the safe and respectful use of different online technologies and online services. • Always relate appropriate online behaviour to my right to have personal privacy. • Know how to not let my mental wellbeing or others be affected by use of online technologies and services. 	

Progression Steps/Learning Objectives (Units of work in brackets)	Computer Science	Information Technology	Digital Literacy
	<p>Turn a complex programming task into an algorithm. (6.1)</p> <p>Identify the important aspects of a programming task (abstraction). (6.1)</p> <p>Decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. (6.1)</p> <p>Test and debug my program as I work on it and use logical methods to identify a cause of a bug. (6.1)</p> <p>Identify a specific line of code that is causing a problem in my program and attempt a fix. (6.1)</p> <p>Translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. (6.1)</p> <p>Use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object. (6.1, 6.7)</p> <p>Interpret (understand) a program in parts and can make logical attempts to put the separate parts together in an algorithm to explain the program as a whole. (6.1)</p> <p>Explain the difference between the Internet and the World Wide Web. (6.2, 6.4,6.6)</p> <p>Explain what a WAN and LAN is and describe the process of how access to the internet in school is possible. (6.2,6.6)</p>	<p>Use filters when searching for digital content. (6.2,6.9)</p> <p>Explain in detail how accurate and reliable a webpage and its content is. (6.2)</p> <p>Compare a range of digital content sources and rate them in terms of content quality and accuracy. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)</p> <p>Consider the intended audience carefully when I design and make digital content. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)</p> <p>Design and create my own online blogs. (6.4)</p> <p>Use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)</p>	<p>Demonstrate safe and respectful use of a range of different technologies and online services. (6.2, 6.4)</p> <p>Identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else. (6.2)</p> <p>Use critical thinking to help me stay safe online. (6.2)</p> <p>Know the value of protecting my privacy and others online. (6.2, 6.4)</p>