Progression in Computing

EYFS	Computer Science			Information Technology	Digital Literacy	
Overall Concept	*Understand what algorithms are; how they are implemented as programs on digital devices; that programs execute by following precise and unambiguous instructions.*	*Create and debug simple programs.*	*Use logical reasoning to predict the behaviour of simple programs*	*Use technology purposefully to create, organise, store, manipulate and retrieve digital content.*	*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.*	*Recognise common uses of information technology beyond school.*
First Steps	To be able to follow a 1-part instruction			To be able to use push button books that make sounds that link to images in a book. Interested in remote controls and phones.		Is aware of buttons and switches. Knows what buttons and switches do and what their purpose is eg: light switch turns on the light. A button turn the washing machine on.

EYFS	Computer Science			Information Technology	Digital Literacy	
Nursery	To be able to follow a 2-part instruction.		Explores toys that can move in different directions.	To be able to use remote controls to make toys move and begin to understand that some technology needs to be turned on and off switches. To begin to understand that there is lots of different types of technology all around us, lights, remotes, phones, computers, iPads etc.		Can talk about what technology they have at home eg: I play on my tablet. I watch Peppa pig on the TV.
Reception	To begin to follow instructions in the correct order.	Can understand that instructions need to go in the correct order. If you mix them up then the task will not be completed correctly. Eg: making toast- you can't butter the bread and then put it into the toaster.	Explores games on Mini Mash that move forwards, backwards, left and left.	To understand how to give instructions to make things move eg: bee bots to make them move to a certain location.	Is aware that we need passwords to protect our work and will use them with an adult eg: for teachers to log onto their computers or a passcode for the iPads.	Able to sort different pieces of technology that they may find at school and what they may find at home eg: A washing machine in the kitchen not in the classroom.

Year 1					
Computer Science			**Information Technology**	**Digital Literacy**	
1.4-Lego Builders 1.5-Maze Explorers 1.7-Coding			1.2- Grouping & Sorting 1.3-Pictograms 1.6-Animated Stories 1.7-Coding 1.8-Spreadsheets	1.1-Online Safety 1.9-Tech Outside School	
• *Understand what algorithms are* • *How they are implemented as programs on digital devices* • *That programs execute by following precise and unambiguous instructions.*	• *Create simple programs.* • *Debug simple programs.*	• *Use logical reasoning to predict the behaviour of simple programs.*	• *Use technology purposefully to create, organise, store, manipulate and retrieve digital content.*	• *Recognise common uses of information technology beyond school.*	• *Use technology safely and respectfully, keeping personal information private* • *Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*
• Understand that an algorithm is a set of instructions used to solve a problem or achieve and objective. (1.4, 1.5) • Know that an algorithm written for a computer is called a program. (1.4, 1.7)	• Can work out what is wrong when the steps are out of order in instructions. (1.4, 1.5) • Can say that if something does not work how it should it is because the code is incorrect. (1.7) • Can try and fix the code if it isn't working properly. (1.7	• Can make good guesses of what is going to happen in a program. For example, where the turtle might go.	• Can sort sound, pictures and text. (1.2) • Can add sound, pictures and text to a program such as 2Create a Story. (1.6) • Can change content on a file such as text, sound and images. (1.3, 1.6, 1.7, 1.8)	• Can say what technology is. (1.9) • Can say what examples of technology are in school. (1.9) • Can say what examples of technology are at home. (1.9) • Know that a chair uses old technology and a smart phone	• Can keep their login information safe. (1.1 and most units) • Can say why they need to keep a login safe in simple terms. • Can save their work in a safe place such as 'My Work' folder. (1.1 and most units)

			• Can name their work. (1.2, 1.3, 1.6, 1.7, 1.8) • Can save their work. (1.2, 1.3, 1.6, 1.7, 1.8) • Can find their work.	uses new technology. (1.9)	

Year 2					
Computer Science			**Information Technology**	**Digital Literacy**	
2.1 Coding			2.3-Spreadsheet 2.4-Questioning 2.5-Effective Searching 2.6-Creating Pictures 2.7-Making Music 2.8-Presenting Ideas	2.1-Coding 2.2-Online Safety 2.5-Effective Searching	
• *Understand what algorithms are* • *How they are implemented as programs on digital devices* • *That programs execute by following precise and explicit instructions.*	• *Create simple programs.* • *Debug simple programs.*	• *Use logical reasoning to predict the behaviour of simple programs.*	• *Use technology purposefully to create, organise, store, manipulate and retrieve digital content.*	• *Recognise common uses of information technology beyond school.*	• *Use technology safely and respectfully, keeping personal information private* • *Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*
• Explain an algorithm is a set of instructions to complete a task. (2.1) • Know you need to carefully plan the algorithm showing an awareness of the need for precise and explicit with their algorithm so it will work when it is	• Can design a simple program using 2Code that achieves a purpose. (2.1) • Can find and correct some errors in their program. (2.1)	• Can say what will happen in a program. (2.1) • Can spot something in a program that has an action or effect (does something)	• Can organise data using a database (2.3, 2.4) • Can find data using specific searches (2.4, 2.5) • Can use several programs to organise information (2.4, 2.8) • Can edit digital data such as data in music composition (2.7 and most units)	• Can find information needed using a search engine. (2.5) • Can share work and communicate electronically , knowing the difference between Email and display boards (2.2 and others) • Can see where technology is used	• Explain what the internet is in basic terms. • Know the consequences of not searching online safely.(2.2, 2.5) • Can report unkind behaviour and things that upset them online, to a trusted adult. (2.2)

made into code. (2.1)			• Can name, save and find their work. (2.3, 2.4, 2.6, 2.7, 2.8 & most units) • Can include photos, text and sound in their creations understanding these can improve the quality and effectiveness for the audience (2.8, 2.6)	at school and out of school.(2.2) • Understands that their creations need similar skills to the adult world (2.1)	

Year 3						
Computer Science				**Information Technology**		**Digital Literacy**
3.1-Coding 3.5-Email				3.3-Spreadsheets 3.4-Typing 3.5-Email 3.6-Branching Data 3.7-Simulations 3.8-Graphing		3.2-Online Safety 3.5-Email
• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	• Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	• Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.
• Can make a real-life situation into an algorithm for a program. (3.1)	• Can identify the difference in using between the effect of a timer or repeat	• Can read programs with several steps and predict	• Can identify different ways that the internet can be used for	• Can carry out searches to find digital content on a range of online systems,	• Can analyse data using features within software to	• Can create a secure password. (3.2) • Can explain the importance of

• Can design an algorithm carefully, thinking about what they want it to do and how it can be turned it into code. (3.1) • Can identify an error in the program and fix it. (3.1)	command in the code. (3.1) • Know that a variable stores information while a program is running (executing). (3.1) • Can identify 'If' statements, repetition and variables. (3.1) • Can experiment with timers in the programs. (3.1)	what it will do. (3.1)	communication. (3.5) • Can use email such as 2Email to respond to others appropriately and attach files. (3.5)	such as within Purple Mash or on an internet search engine. (Across units) • Can collect data and input it into software. (3.3, 3.6, 3.8)	help. (3.3, 3.6, 3.8) • Can present data and information using different software.(3.3, 3.6, 3.8) • Can consider what the most appropriate software to use when given a task. (Across units) • Can create purposeful (appropriate) content and attach this to emails. (3.3, 3.5, 3.6, 3.7, 3.8)	having a secure password and not sharing it with others. (3.2, 3.5) • Can explain the negative consequences of not keeping passwords safe and secure. (3.2, 3.5) • To understand the importance of keeping safe online and behaving respectfully. (3.2) • To use communication tools such as 2Email respectfully and use good etiquette. (3.2, 3.5) • To report unacceptable content and contact online in more than one way to a trusted adult. (3.2)

Year 4						
Computer Science				**Information Technology**		**Digital Literacy**
4.1-Coding 4.2-Online Safety 4.5-Logo 4.7-Effective Searching 4.8-Hardware Investigators				4.1-Coding 4.3-Spreadsheets 4.4-Writing for different audiences 4.6-Animation 4.7-Effective Searching		4.2-Online Safety
• *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	• *Use sequence, selection and repetition in programs; work with variables and various forms of input and output.*	• *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	• *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.*	• *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.*	• *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.*	• *Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.*
• Can turn a real-life situation to solve into an algorithm using planning tools	• Can use repetition in the code. For example, using a loop that continues until a	• Can use the user inputs and output features within their program, such	• To recognise the main component parts of hardware which allow	• To understand the purpose of a search engine and the main features within it. (4.7)	• Can create and improve solutions to a problem based on feedback. (4.1, 4.2)	• To have a good understanding of the online safety rules we learn at school. (4.2)

such as flowcharts. • To use a design that shows how they can accomplish this in code. (4.1, 4.5)	condition is met such as the correct answer being entered. (4.1) • Can use timers within the program designs more accurately to create repetition effects. (4.1) • Can use selection (decision) in programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. (4.1) • Can use variables within the program and know how to change the value of variables. (4.1)	as 'Print to screen'. (4.1) • Can identify errors in the code by using different methods, such as steeping through lines of code and fixing them. (4.1) • Can read programs that contain several steps and predict the outcomes with increasing accuracy. (4.1, 4.5)	computers to join and form a network. (4.8) • To 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)	• Can look at information on a webpage and make predictions about the accuracy of information contained within it. (4.7)	• To review solutions that others have created, using a checklist of criteria. (4.1, 4.2) • To work collaboratively to create content and solutions. (4.1, 4.3, 4.4) • Can share digital content using a variety of applications. (Across units)	• To demonstrate how to use different online technologies safely. (4.2) • To demonstrate how to use a few different online services safely. (4.2) • Know they have a right to privacy both on and offline. (4.2) • To recognise that their wellbeing can be affected by how they use technology. (4.2) • Can report with ease any concerns with content and contact online and know immediate strategies to keep safe. (4.2)

Year 5						
Computer Science				**Information Technology**		**Digital Literacy**
5.1-Coding 5.2-Online Safety 5.5-Game Creator				5.1-Coding 5.2-Online Safety 5.3-Spreadsheets 5.4-Databases 5.5-Game Creator 5.6-3D Modelling 5.7-Concept Maps		5.2-Online Safety
• *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	• *Use sequence, selection and repetition in programs; work with variables and various forms of input and output.*	• *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	• *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.*	• *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*	• *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.*	• *Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact*
• Can make more complex real-life problems into algorithms	• Can convert (translate) algorithms that contain	• Use logical methods to identify the cause of any	• Know the importance of computer networks and	• Can search precisely when using a search engine. For	• Can make appropriate improvements to digital work	• To have a secure knowledge of online safety rules taught at

for a program. (5.1) • Can test and debug programs as they work. (5.1, 5.5)	sequence, selection and repetition into code that works. (5.1) • Can use sequence, selection, repetition, and some other coding structures in their code. (5.1) • Can organise their code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. (5.1)	bug with support to identify the specific line of code. (5.1) •	how they help solve problems and enhance communication. (5.2) • Recognise the main dangers that can be perpetuated via computer networks. (5.2) • Can explain what personal information is and know strategies for keeping this safe. (5.2) • Can use the most appropriate form of online communication according to the digital content. (5.2 & others)	example, know that the addition of words or removal of words help find better results. (5.2) • Can explain in detail how accurate, safe and reliable the content is on a webpage. (5.2) •	created. (Across units) • Can comment on how successful a digital solution is that they have created. (Across units) • Can work collaboratively with others creating solutions to problems using appropriate software. (Across units) • Can use collaborative modes to work with others and share it. (5.7)	school. (5.2 & across units) • Can demonstrate the safe and respectful use of different online technologies and online services. (5.2 & across units) • To always relate appropriate online behaviour to their right to have personal privacy. (5.2 & across units) • Know how to not let their mental wellbeing or others be affected by use of online technologies and services. (5.2 & across units)

Year 6						
Computer Science				**Information Technology**		**Digital Literacy**
6.1-Coding 6.2-Online Safety 6.4-Blogging				6.1-Coding 6.2-Online Safety 6.3-Spreadsheets 6.4-Blogging 6.5-Text Adventures 6.7-Quizzing		6.2-Online Safety 6.4-Blogging
• *Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.*	• *Use sequence, selection and repetition in programs; work with variables and various forms of input and output.*	• *Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.*	• *Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.*	• *Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content*	• *Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.*	• *Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact*
• Can turn a complex programming task into an algorithm. (6.1)	• Can translate algorithms that include sequence, selection and	• Can test and debug a program as they work on it and use logical	• Can explain the difference between the internet and the	• Can use filters when searching for digital content. (6.2)	• Can consider the intended audience carefully when designing and	• Can demonstrate safe and respectful use of a range of

• Can identify the important aspects of a programming task (abstraction). (6.1) • Can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. (6.1) • Can 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) •	repetition into code and nest these structures within each other. (6.1) • Can use inputs and outputs within coded programs such as sound, movement and buttons. (6.1)	methods to identify a cause of a bug. (6.1) • Can identify a specific line of code that is causing a problem in a program and attempt a fix. (6.1)	World Wide Web. (6.2, 6.4) • Can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible. (6.2)	• Can explain in detail how accurate and reliable a webpage and its content is. (6.2) • Can 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)	making digital content. (6.1, 6.3, 6.4, 6.5, 6.7) • Can design and create their own online blogs. (6.4) • Can use criteria to evaluate the quality of their own and others digital solutions, suggesting refinements. (6.1, 6.3, 6.4, 6.5, 6.7)	different technologies and online services. (6.2, 6.4) • Can identify more discrete inappropriate behaviours online. (6.2) • Can use critical thinking to help me stay safe online. (6.2) • Know the value of protecting their privacy and others online. (6.2, 6.4)