Trent Rylands Federation: Computing Skills Progression

		EYFS	Year 1	Year 2			Year 3	Year 4	Year 5	Year 6
Computer Science	Understand what algorithms are	I can understand and follow instructions and begin to write my own e.g. recipe, planting a bean. I know how to give a beebot a simple instruction.	I can explain that an algorithm is a set of instructions. I know that a computer turns an algorithm into code that the computer can understand.	I can explain an algorithm is a set of instructions to complete a task. I know I need to carefully plan my algorithm so it will work when I make it into code.	Computer Science	Design, write and debug programs	I can make a real-life situation into an algorithm for a program. I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code.	I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code. I can use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered	I can make more complex real-life problems into algorithms for a program I can test and debug my programs as I work	I can turn a complex programming task into an algorithm I can identify the important aspects of a programming task (abstraction) I can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work I can test and debug my program as I work on it and use logical methods to identify a cause of a bug. I can identify a specific line of code that is causing a problem in my program and attempt a fix
	Create and debug simple programs		I can work out what is wrong when the steps are out of order in instructions. I can say that if something does not work how it should, it is because my code is incorrect. I can try and fix my code if it isn't working properly.	I can design a simple program using 2Code that achieves a purpose. I can find and correct some errors in my program.		Use sequence, selection and repetition	I am able to design a program thinking logically about the sequence of steps required. I can experiment with timers in my programs I can experiment with the effect of using repeat commands. I can identify the difference in using the effect of a timer or repeat command in my code.	I can use timers within my program designs more accurately to create repetition effects. I can use the user inputs and output features within my program, such as 'Print to screen' I can use variables within my program and know how to change the value of variables I can 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	I can convert (translate) algorithms that contain sequence, selection and repetition into code that works I can use sequence, selection, repetition, and some other coding structures in my code	I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object I can translate algorithms that include sequence, selection and repetition into code and nest these structures within each other
	Use logical reasoning to predict the behaviour of simple programs		I can make good guesses of what is going to happen in a program. For example, where the turtle might go.	I can say what will happen in a program. I can spot something in a program that has an action or effect (does something).		Use logical reasons to explain simple algorithms	I can read programs with several steps and predict what it will do.	I can identify errors in my code by using different methods such a steeping through lines of code and fixing them. I can read programs that contain several steps and predict outcomes with increasing accuracy.	I can organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently I can use logical methods to identify the cause of any bug with support to identify the specific line of code	I 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
						Understand computer networks	I can identify different ways that the internet can be used for. I can use email to respond to others appropriately and attach files.	I understand that network and communication components can be found in many different devices which allow them to join the internet I understand that network and communication components can be found in many different devices which allow them to join the internet	I know the importance of computer networks and how they help solve problems and enhance communication I recognise the main dangers that can be perpetuated via computer networks I can explain what personal information is and know strategies for keeping this safe. I can use the most appropriate form of online communication according to the digital content.	I can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible I can explain the difference between the internet and the World Wide Web.

Information Technology	Use technology purposefully	I understand a camera takes a picture.	I can sort sound, pictures and text. I can add sound, pictures and text to a program such as 2Create a Story. I can change content on a file such as text, sound and images. I can name my work. I can save my work. I can find my work.	I can organise data- for example, using a database such as 2Investigate. I can find data using specific searches- for example, using 2Investigate. I can use several programs to organise information- for example, using binary trees such as 2Questions or spreadsheets such as 2Calculate. I can edit digital data such as data in music composition software like 2Sequence. I can name, save and find my work. I can include photos, text and sound in my creations.	Information Technology	Use search technologies	I can carry out searches to find digital content on a range of online systems, such as an internet search engine.	I understand the purpose of a search engine and the main features within it	I can search precisely when using a search engine. For example, I know I can add additional words or removes words to help find better results I can explain in detail how accurate, safe and reliable the content is on a webpage	I can use filters when searching for digital content I can explain in detail how accurate and reliable a webpage and its content is I can compare a range of digital content sources and rate them in terms of content quality and accuracy
						Select, use and combine software	I can collect data and input it into software I can analyse data using features within software to help such as formula in spreadsheets I can analyse data using features within software to help such as formula in spreadsheets I can present data , images and information using different software I can consider what the most appropriate software to use when given a task by my teacher.	I can look at information on a webpage and make predictions about the accuracy of information contained within it I can create and improve my solutions to a problem based on feedback. For example, create a program I can review solutions that others have created, using a checklist of criteria. I can work collaboratively to create content and solutions I can share digital content using a variety of applications	I can make appropriate improvements to digital work I have created I can comment on how successful a digital solution is that I have created. I can work collaboratively with others creating solutions to problems using appropriate software I can use collaborative modes to work with others and share it	I can consider the intended audience carefully when I design and make digital content I can design and create my own online blogs I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements
Digital Literacy	Recognise common uses of information technology beyond school	I know different types of technology e.g. phone, camera, computer, kettle, toaster, oven etc.	I can say what technology is. I can say what examples of technology are in school. I can say what examples of technology are at home. I know that a chair uses old technology and a smart phone uses new technology.	I 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.	Digital Literacy	Use technology safely	I can create a secure password. I can explain the importance of having a secure password and not sharing it with others. I can explain the negative consequences of not keeping passwords safe and secure I understand the importance of keeping safe online and behaving respectfully. I can use communication tools respectfully and use good etiquette I can report unacceptable content and contact online in more than one way to a trusted adult.	I have a good understanding of the online safety rules we learn at school. I can demonstrate how to use different online technologies safely I can demonstrate how to use a few different online services safely I know I have a right to privacy both on and offline I recognise that my wellbeing can be affected by how I use technology I can report with ease any concerns with content, contact online, and know immediate strategies to keep safe.	I can show secure knowledge of online safety rules taught at school I can demonstrate the safe and respectful use of different online technologies and online services I can always relate appropriate online behaviour to my right to have personal privacy I cannot let my mental wellbeing or others be affected by use of online technologies and services	I can demonstrate safe and respectful use of a range of different technologies and online services I can identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else. I can use critical thinking to help me stay safe online. I can show the value of protecting my privacy and others online
	Use technology safely	I understand a computer/ I pad can be turned on and off. I know we need to be safe when using technology.	I can keep my login information safe. I can save my work in a safe place such as 'My Work' folder.	I can find information I need using a search engine. I know the consequences of not searching online safely. I can share work and communicate electronically- for example using 2Email or the display boards. I can report unkind behaviour and things that upset me online, to a trusted adult. I can see where technology is used at school such as in the office or canteen.							

Vocabulary **Computer Science** **Information Technology** **Digital Literacy**	Instructions Camera Picture Computer Information Internet	Instruction Algorithm Computer Program Debug Undo Rewind Animation Action Background Code Command Event Execute Input Output Object Data Collate Properties Spreadsheet File Log in Log out Username Password Avatar Save	Button Collision Detection Nesting Predict Run Scale Sequence Test Timer When clicked/swiped Copy Paste Columns Cells Rows Binary tree Database Template Palette Node Presentation Narrative Search Sharing Email Internet Digital footprint Attachment Search engine Share		Alert Blocks of command Develop Flowchart Plan Procedure Repeat Values Branching database Simulation Graph Field Spin tool Entrance animation Media Slideshow Stock image Slide Transition Password Blog Concept map Username Website Webpage Spoof website PEGI rating CC BCC Attachment Formatting Address Book Draft	Code Block Co-ordinates If If/Else Number Variable Prompt Selection Repeat Until Variable LOGO BK FD RT LT REPEAT SETPC SETPS PU PD Motherboard CPU RAM Graphics card Network card Monitor Speakers Keyboard Mouse Average Charts Formula Formula Wizard Random tool Bold Italic Underline Frame Flipbook Onion skinning Stop motion Rippler Easter egg Browser Computer virus Cookies Copyright Identity theft Malware Phishing Plagiarism Spam	Abstraction Called Decomposition Function Physical system Score Simplify Tab Computer game Customise Evaluation Interactive Screenshot Texture Perspective Playability Find Record Sort Group Arrange Statistics Reports Table CAD Modelling Viewpoint 3D Polygon 2D Net Points 3D Printing Concept Connection Idea Thought Visual Cursor Document Merge Readability Text wrapping Word art Word processor SMART rules Reputable Encryption Citations Shared image Reference Bibliography	Developer Get input Launch command String User input Text-based adventure Sprite World Wide Web Network Router Local Area Network (LAN) Wide Area Network (WAN) Wireless Base 10 Base 2 Bit Denary Integer Byte Digit Megabyte MB Tetrabyte TB Kilobyte KB Nibble Transistor Binary Decimal Gigabyte GB Machine Code Switch Count tool Dice Audience Blog Icon Quiz Alignment Calculate Cell reference Range Sum Value Workbook Screen time Blog post Collaborative