Year 3			
Skills	**National Curriculum**	**Key knowledge**	**Key vocabulary**
Computer systems and networks (1,2 and 3)	**Computer systems and networks (1,2 and 3)**	**Computer systems and networks (1,2 and 3)**	**Computer systems and networks (1,2 and 3)**
Understanding what the different components of a computer do and how they work together. (CS) 3 Learning about the purpose of routers. (CS) 1 Drawing comparisons across different types of computers. (CS) 3 Understanding the role of the key components of a network. (CS) 1 Understanding that websites & videos are files that are shared from one computer to another. (CS) 1 Learning about the role of packets. (CS) 1 Understanding how networks work and their purpose. (CS) 1 Identifying the key components within a network, including whether they are wired or wireless. (CS) 1 Recognising links between networks and the internet. (CS) 1 Learning how data is transferred. (CS) 1 Using decomposition to explain the parts of a laptop computer. (CS) 3 Explaining the purpose of an algorithm. (CS) 3 Learning to log in and out of an email account. (IT) 2 Writing an email including a subject, 'to' and 'from'. (IT) 2 Sending an email with an attachment. (IT) 2 Replying to an email. (IT) 2 Understanding the purpose of emails. (IT) 2 Learning about cyberbullying. (DL) 2 Learning that not all emails are genuine, recognising when an email might be fake and what to do about it. (DL) 2	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. (CS) 3 Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. (CS) 3 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. (DL/ IT) 1, 2 and 3. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. (DL/IT) 1 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. (CS/IT) 1 and 2 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. (DL) 2	To know what a tablet is and how it is different from a laptop/desktop computer. To understand what a network is and how a school network might be organised. To know that a server is central to a network and responds to requests made. To know how the internet uses networks to share files. To know that a router connects us to the internet. To know what a packet is and why it is important for website data transfer. To know the roles that inputs and outputs play on computers. To understand that email stands for 'electronic mail.' To know that an attachment is an extra file added to an email. To understand that emails should contain appropriate and respectful content. To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.	Component Connection Corrupted Data Desktop device DSL (digital subscriber line) Fibre File Internet Network Network map Network switch packets Radio waves Router Server The Cloud Web server Website Website trackers WiFi Wireless Access Points World Wide Web Attachment BCC (blind carbon copy) CC (carbon copy) Cyberbullying Domain Download Email (account/ address) Hacker Inbox Link Log in Log out Password Personal information scammer Spam email Subject bar Virus Algorithm CPU (central processing unit) GPU (graphics processing unit) HDD (hard disk drive) Infinite loop Input Memory Output Program QR code RAM (random access memory) ROM (read only memory) Storage
Programming	**Programming**	**Programming**	**Programming**
Using decomposition to explore the code behind an animation. (CS) Using repetition in programs. (CS)	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by	To know that Scratch is a programming language and some of its basic functions.	Algorithm Animation Application Code Code block Coding

Using logical reasoning to explain how simple algorithms work. (CS) Explaining the purpose of an algorithm. (CS) Forming algorithms independently. (CS) Using logical thinking to explore more complex software; predicting, testing and explaining what it does. (CS) Incorporating loops to make code more efficient. (CS) Continuing existing code. (CS) Making reasonable suggestions for how to debug their own and others' code. (CS)	decomposing them into smaller parts. (CS) Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. (CS) Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. (CS) Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. (DL/IT) 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. (CS/IT)	To understand how to use loops to improve programming. To understand how decomposition is used in programming. To understand that you can remix and adapt existing code	Debug Decompose Interface Loop Predict Program Remixing code Repetition code Scratch
Creating media	**Creating media**	**Creating media**	**Creating media**
Using logical thinking to explore more complex software; predicting, testing and explaining what it does. (CS) Taking photographs and recording video to tell a story. (IT) Using software to edit and enhance their video adding music, sounds and text on screen with transitions. (IT)	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. (DL/IT) 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. (CS/IT)	To know that different types of camera shots can make my photos or videos look more effective. To know that I can edit photos and videos using film editing software. To understand that I can add transitions and text to my video.	Application Camera angle Clip Edit Film editing Software Graphics Import Photo Recording Sound effects Time code Transition Video
Data handling	**Data handling**	**Data handling**	**Data handling**
Using logical thinking to explore more complex software; predicting, testing and explaining what it does. (CS) Understanding the vocabulary associated with databases: field, record, data. (IT) Learning about the pros and cons of digital versus paper databases. (IT) Sorting and filtering databases to easily retrieve information. (IT) Creating and interpreting charts and graphs to understand data. (IT)	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. (CS/IT)	To know that a database is a collection of data stored in a logical, structured and orderly manner. To know that computer databases can be useful for sorting and filtering data. To know that different visual representations of data can be made on a computer.	Categorise Category Chart Data Database Fields Filter Graph Information Interpret PDF Questionnaire Record Representation Sort Spreadsheet