EYFS

Digital Literacy
- Recognising that a range of technology is used for different purposes.
- Learning to log in and log out

Computer Systems
- To be able to understand what a computer keyboard is and recognising some letters and numbers.
- To know that a mouse can be used to click, drag and create simple drawings.
- To know that to use a computer you need to log in to it and then log out at the end of your session.
- To know that different types of technology can be found at home and in school.
- To know that you can take simple photographs with a camera or iPad.
- To know that you must hold the camera still and ensure the subject is in the shot to take a photo.

Programming
- To know that being able to follow and give simple instructions is important in computing.
- To understand that it is important for instructions to be in the right order.
- To understand why a set of instructions may have gone wrong

Computing systems and Networks		
Year 1 & 2	**Year 3 & 4**	**Year 5 & 6**
- To know that "log in and log out" means to begin and end a connection with a computer. - To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. - To know that passwords are important for security. - To know that when we create something on a computer it can be more easily saved and shared than a paper version. - To know some of the simple graphic design features of a piece of online software. - To know the difference between a desktop and laptop computer. - To know that people control technology. - To know that buttons are a form of input that give a computer an instruction about what to do (output). - To know that computers often work together.	- 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 how the internet uses networks to share files. 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 know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together. - To understand that software can be used collaboratively online to work as a team. - To know that you can use images, text, transitions and animation in presentation slides	- To know how search engines work. - To understand that anyone can create a website and therefore we should take steps to check the validity of websites. - To understand what copyright is. - To know the difference between ROM and RAM. - To understand the importance of having a secure password and what "brute force hacking" is. - To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2.

Programming

- To understand that an algorithm is when instructions are put in an exact order. To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.
- To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.
- To understand the basic functions of a Bee-Bot.
- To know that you can use a camera/tablet to make simple videos.
- To know that algorithms move a bee-bot accurately to a chosen destination.
- To understand what machine learning is and how that enables computers to make predictions.
- To know that abstraction is the removing of unnecessary detail to help solve a problem.
- To know that coding is writing in a special language so that the computer understands what to do.
- To understand that the character in Scratch Jr is controlled by the programming blocks.
- To know that you can write a program to create a musical instrument or tell a joke.

- To know that Scratch is a programming language and some of its basic functions.
- 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.
- To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.
- To know what a conditional statement is in programming.
- To understand that pattern recognition means identifying patterns to help them work out how the code works.
- To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.

- To know that a soundtrack is music for a film/video and that one way of composing these is on programming software.
- To understand that using loops can make the process of writing music simpler and more effective.
- To know that there are text-based programming languages such as Logo and Python.
- To know that nested loops are loops inside of loops

Creating Media

- To understand that holding the camera still and considering angles and light are important to take good pictures.
- To know that you can edit, crop and filter photographs. To know how to search safely for images online.

- 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.

- To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph.
- To know that decomposition of an idea is important when creating stop-motion animations.
- To know that editing is an important feature of making and improving a stop motion animation.

Data Handling

- To understand that you can enter simple data into a spreadsheet.
- To understand what steps you need to take to

- To know that computers can use different forms of input to sense the world around them so that they can record and respond to data. This is

- To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock.

create an algorithm. • To know what data to use to answer certain questions. To know that computers can be used to monitor supplies.	called 'sensor data'. • To know that a weather machine is an automated machine that responds to sensor data. • To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films	• To know what numbers using binary code look like and be able to identify how messages can be sent in this format. • To know what simple operations can be used to calculate bit patterns. • To know that data contained within barcodes and QR codes can be used by computers. • To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. • To know that data is often encrypted so that even if it is stolen it is not useful to the thief

Online Safety

• To know that the internet is many devices connected to one another. • To know that you should tell a trusted adult if you feel unsafe or worried online. • To know that people you do not know on the internet (online) are strangers and are not always who they say they are. • To know that to stay safe online it is important to keep personal information safe. • To know that 'sharing online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet. • To understand the difference between online and offline. To understand what information I should not post online. To know what the techniques are for creating a strong password. • To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.' • To understand that not everything I see or read online is true.	• To know that not everything on the internet is true: people share facts, beliefs and opinions online. • To understand that the internet can affect your moods and feelings. • To know that privacy settings limit who can access your important personal information Information, such as your name, age, gender etc. • To know what social media is and that age restrictions apply • To understand some of the methods used to encourage people to buy things online. • To understand that technology can be designed to act like or impersonate living things. • To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology. • To understand what behaviours are appropriate in order to stay safe and be respectful online	• To know different ways we can communicate online. • To understand how online information can be used to form judgements. • To understand some ways to deal with online bullying. • To know that apps require permission to access private information and that you can alter the permissions. • To know where I can go for support if I am being bullied online or feel that my health is being affected by time online. • To know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity. • To know what steps are required to capture bullying content as evidence. • To understand that it is important to manage personal passwords effectively. • To understand what it means to have a positive online reputation. • To know some common online scams.