Computing

INTENT		
End of EYFS	End of Key Stage 1	End of Key Stage 2
Pupils will be given the opportunity to: • Recognise that a range of technology is used in places such as homes and schools. • Select and use technology for particular purposes including expressing their ideas and feelings. • Be confident to try new activities and show independence, resilience and perseverance in the face of challenges. • Explain the reasons for rules; use technology safely and respectfully. • Develop their fine motor skills so that they can use a range of tools competently, safely and confidently; confidently use an iPad for simple tasks such as taking photos, cd player or other technology.	Pupils will be given the opportunity to: • Understand what algorithms are and how they are implemented • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Use technology to create, organise, store, manipulate and retrieve digital content • Recognise common use of information technology outside of school • Use technology safely and respectfully; keep personal information private; identify how to get help with concerns.	Pupils will be given the opportunity to: • Design, write and debug programs that accomplish specific goals • Use sequence, selection and repetition in programs, work with variables of inputs and outputs • Use logical reasoning to explain how simple algorithms work and correct errors • Understand computer networks including the Internet and how they provide services with opportunities for communication • Use search technologies effectively; appreciate how results are ranked and evaluate digital content • Select, use and combine a variety of software on a range of digital devices to design and create content that accomplish given goals • Use technology safely, recognise unacceptable behaviours, understand how to report concerns.
IMPLEMENTATION		
End of EYFS	End of Key Stage 1	End of Key Stage 2

Computer Science • Learn how to operate the camera on an iPad to take photographs of meaningful creations or moments. • Learn how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary. • Recognise and identify familiar letters and numbers on an iPad. • Develop basic touch skills on an iPad, such as selecting. • Follow instructions as part of practical activities and games. • Learn to give simple instructions. • Learn to debug instructions, with the help of an adult, when things go wrong.	Computer Science • Understand what a computer is and that it's made up of different components. • Recognise that buttons cause effects and that technology follows instructions. • Learn how we know that technology is doing what we want it to do via its output. Develop confidence with the keyboard and the basics of touch typing. • Articulate what decomposition is. • Decompose a game to predict the algorithms used to create it. • Learn that there are different levels of abstraction. • Explain what an algorithm is and follow an algorithm. • Create a clear and precise algorithm. • Use logical thinking to explore software, predicting, testing and explaining what it does. • Use an algorithm to write a basic computer program.	Computer Science • Decompose a program into an algorithm. • Use past experiences to help solve new problems. • Write increasingly complex algorithms for a purpose. • Debug quickly and effectively to make a program more efficient. • Remix existing code to explore a problem. • Use and adapt nested loops. • Programme using the language Python. • Change a program to personalise it. • Evaluate code to understand its purpose. • Predict code and adapt it to a chosen purpose. • Learn about the history of computers and how they have evolved over time. Use the understanding of historic computers to design a computer of the future. • Understand and identify barcodes, QR codes and RFID. Identify devices and applications that can scan or read barcodes, QR codes and RFID. • Learn the vocabulary associated with data: data and transmit. • Recognise that computers transfer data in binary and understand simple binary addition. • Learn that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations.

Information Technology • Use a simple online paint tool to create digital art. • Create simple posters with an adult using PicCollage. • Represent data through sorting and categorising objects in unplugged scenarios.	Information Technology • Develop word processing skills, including altering text, copying and pasting and using keyboard shortcuts. • Use word processing software to type and reformat text. • Use software (and unplugged means) to create story animations. • Create and label images. • Search for appropriate images to use in a document. • Collect and input data into a spreadsheet. • Interpret data from a spreadsheet. • Learn how computers are used in the wider world.	Information Technology • Use logical thinking to explore software independently, iterating ideas and testing continuously. • Use search and word processing skills to create a presentation. • Understand how search engines work. • Understand how barcodes, QR codes and RFID work. • Gather and analyse data in real time. Create formulas and sort data within spreadsheets. • Learn how 'big data' can be used to solve a problem or improve efficiency. • Learn about different forms of communication that have developed with the use of technology.

Digital Literacy • Recognise that a range of technology is used for different purposes. • Learn to input a password to use an iPad and with some help, know how to power off. • Know that different types of technology can be found at home and in school. • Take simple photographs with an iPad. • Know that you must hold the iPad still and ensure the subject is in the shot to take a photo. • Follow and give simple instructions. • Understand that it is important for instructions to be in the right order. • Understand why a set of instructions may have gone wrong. • Know that sorting objects into various categories can help you locate information.	Digital Literacy • Learn how to create a strong password. • Understand how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable. • Identify whether information is safe or unsafe to be shared online. • Learn to be respectful of others when sharing online and ask for their permission before sharing content. • Learn strategies for checking if something they read online is true. • Know that you can edit, crop and filter photographs. • Know how to search safely for images online. • Understand that you can enter simple data into a spreadsheet. • Understand what steps you need to take to create an algorithm. • Understand the difference between online and offline. • Understand what information should not be posted online. • Know what the techniques are for creating a strong password. • Know that you should ask permission from others before sharing about them online and that they have the right to say 'no.' • Understand that not everything I see or read online is true. • Know the difference between a desktop and laptop computer.	Digital Literacy • Learn about the positive and negative impacts of sharing online and learn strategies to create a positive online reputation. • Understand the importance of secure passwords and how to create them. • Learn strategies to capture evidence of online bullying in order to seek help. • Use search engines safely and effectively. • Recognise that updated software can help to prevent data corruption and hacking. • Know how search engines work. for a number of purposes e.g. animation, games design etc. • Understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph and know that decomposition of an idea is important when creating stop-motion animations. • Know that editing is an important feature of making and improving a stop motion animation. • 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 called 'sensor data.' • Know that data contained within barcodes and QR codes can be used by computers. • Know that Radio Frequency Identification (RFID) is a more private way of transmitting data and know that data is often encrypted so that even if it is stolen it is not useful to the thief.

	• Know that people control technology. • Know that buttons are a form of input that give a computer an instruction about what to do (output). • Know that computers often work together. • Understand what machine learning is and how that enables computers to make predictions. • Know that abstraction is the removing of unnecessary detail to help solve a problem. • Understand that coding is writing in a special language so that the computer understands what to do. • Understand that the character in ScratchJr is controlled by the programming blocks. • Know that you can write a program to create a musical instrument or tell a joke. • Understand that holding the camera still and considering angles and light are important to take good photographs.	• Know that a 'digital footprint' means the information that exists on the internet as a result of a person's online activity. • Know the steps required to capture bullying content as evidence. • Understand that it is important to manage personal passwords effectively. • Understand what it means to have a positive online reputation. • Know some common online scams. • Understand that anyone can create a website and therefore we should take steps to check the validity of websites. • Understand what copyright is. • Know the difference between ROM and RAM. • Understand the importance of having a secure password and what "brute force hacking" is. Know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2. • Understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. • Know what a conditional statement is in programming. • Understand that pattern recognition means identifying patterns to help them work out how the code works. Understand that algorithms can be used
IMPACT		

Pupil Voice	
Subject Monitoring	