Roe Green Infant School

Computing – Knowledge and Skills Progression

	Reception	Year 1	Year 2
Online Safety		• To know that the internet is many devices connected to one another • To know that you should tell an adult if you feel unsafe or worried online • To know that to stay 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'
Data Handling		• To know how charts and pictograms can be created using a computer • To understand that a branching database is a way of classifying a group of objects • To know that computers understand different types of 'input'	• To understand that you can enter simple data into a spreadsheet • To understand what steps, you need to take to create an algorithm • To know what data to use to answer certain questions • To know that computers can be used to monitor supplies

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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 understand that an animation is made up of a sequence of photographs • To know that small changes in my frames will create a smoother looking animation • To understand what software creates simple animations and some of its features for example, onion skinning
Programming		• To understand that an algorithm is when instructions are put in an exact order and to know that we call errors in an algorithm 'bugs' and fixing these 'debugging' • To know that input devices get information into a computer and that output devices get information out of a computer • To understand that decomposition means breaking a problem a problem into manageable chunks and that it is important in computing • To understand the basic functions of a bee-bot and to know that algorithms move a bee-bot accurately to a chosen destination • To know that you can use a camera/tablet to make simple videos	• To understand what machine learning is and how that enables computers to make predictions • To know that loops in programming are where you set a certain instruction/s to be repeated multiple times • To know that abstraction is the removing of unnecessary detail to help solve a problem • To know that coding is a 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

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Computing systems and networks		• To know that "long in and 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, texts, layers, shapes and clip art • To know that passwords are important for safety • 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 work together • To know that touch typing is the fastest way to type • To know that you can make text a different style, size and colour • To know that "copy and paste" is a quick way of duplicating text
Computational thinking (Computer Science)		• Learning that decomposition means breaking a problem down into smaller parts • Using decomposition to solve unplugged challenges • Using logical reasoning to predict the behaviours of simple programs • Developing the skills associated with sequencing in unplugged activities • Following a basic set of instructions • Assembling instructions into a simple algorithm	• Articulating what decomposition is • Decomposing a game to predict the algorithms used to create it • Learning that there are different levels of abstractions • Explaining what an algorithm is • Following an algorithm • Creating a clear precise algorithm • Learning that programs execute by the following precise instructions • Incorporating loops within algorithms

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Hardware (Computer Science)		• Learning how to operate a camera or tablet to take photos and videos • Learning how to explore and tinker with hardware to find out how it works • Recognising that some devices are input device and others are output devices • Learning where keys located on the keyboard	• Understand what a computer is and that it is made up of different components • Recognising that buttons cause effects and that technology follows instructions • Learning how we know that technology is doing what we want to do via its output • Using greater control when taking photos with cameras, tablets or computers • Developing confidence with the keyboard and the basics of touch typing