



Milestones Document – Computing in Year 1



Intent	
<p>At Russell Lower School, we want all children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. We want them to be able to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems, as well as to be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. We want our children to be responsible, competent, confident and creative users of information and communication technology.</p>	
Subject Content, Knowledge and Skills:	Progression Outcomes
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Computer Science – Espresso Coding, using Block Coding, HTML (creating web pages) and Python (coding language) in each year – using Lessons/Challenge Zone, Free Code and Lesson Plans and resources</p> <p>I am beginning to understand what algorithms are and how they are implemented as programs on digital devices</p> <p>I am beginning to understand that programs execute by following precise and unambiguous instructions</p> <p>I am starting to create simple programs, with some support</p> <p>I am starting to debug simple programs, sometimes with support</p> <p>I can sometimes use logical reasoning to talk about the behaviour of simple programs</p> <p>Information Technology</p> <p>I am beginning to use technology purposefully to create, organise and store digital content, with support</p> <p>I can use technology purposefully to retrieve and manipulate digital content with support</p> <p>Digital Literacy and E-Safety</p> <p>I understand I need to use technology safely and respectfully</p> <p>I know that I need to keep personal information private when using technology, such as my name, address and school</p> <p>I know I should ask for help if I feel unsure about any online content or contact and who to ask</p> <p>I can describe some common uses of information technology beyond school</p>
<p>Key Vocabulary and information:</p> <p>Algorithm - an unambiguous procedure or precise step-by-step guide to solve a problem or achieve a particular objective</p> <p>Coding – The language used to give instructions to computers</p> <p>Debug - to detect and correct the errors in a computer program</p>	<p>Building on from...</p> <p>Understanding the World in Foundation Stage:</p> <p>Children show an interest in technology and begin to learn computer skills to complete simple programs.</p>

Digital content - any media created, edited or viewed on a computer, such as text (including the hypertext of a web page), images, sound, video (including animation), or virtual environments, and combinations of these (i.e. multimedia)

E-safety – how to keep yourself safe on-line (using the internet)

Hardware - the collection of physical parts of a computer system. This includes the computer case, monitor, keyboard, and mouse. It is the part you can touch. Hardware is also other technology you can touch: such as cameras, printers, phones etc.

Information - the meaning or interpretation given to a set of data by its users, or which results from data being processed

Input - data provided to a computer system, such as via a keyboard, mouse, microphone, camera or physical sensors

Program - a programming construct in which one or more instructions are repeated, perhaps a certain number of times, until a condition is satisfied or until the program is stopped

Search - to identify data that satisfied one or more conditions, such as web pages containing supplied keywords, or files on a computer with certain properties

Search Engine – a web page where you can look up information

Sequence - to place programming instructions in order, with each executed one after the other

Software - computer programs, including both application software (such as office programs, web browsers, media editors and games) and the computer operating system. The term also applies to 'apps' running on mobile devices and to web-based services

What comes next...



Children have a secure understanding of algorithms and can independently create and debug simple programs. Children are consistently using logical reasoning and can create, organise and store digital context.

Children are responsible using technology and knowhow to keep personal information private at all times.