

Woodley Primary School – Knowledge Organiser

Computing Focus:	Computer Science	Year 6	Ongoing
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Key Vocabulary	
Spelling	Definition
Logic	Predicting and analysing
Evaluation	Making judgements
Algorithm	A list of steps and rules to finish a task
Patterns	Spotting and using similarities
Decomposition	Breaking down into parts
Abstraction	Removing unnecessary detail
Tinker	Change things and see what happens
Debugging	Finding and fixing problems in an algorithm or program
Collaborating	Working together
Persistence	Trying again and again, even when something is very hard
Function	A named group of programming instructions. Functions are reusable abstractions that reduce the complexity of writing and maintaining programs
Behaviour	An action that a sprite performs continuously until it's told to stop
Sprite	A graphic character on the screen with properties that describe its location, movement, and look
Event	An action that causes something to happen
Loop	The action of doing something over and over again.
Repeat	Do something again
Variable	A placeholder for a piece of information that can change.
Constant	A variable used throughout a program that never changes value
Models and Simulations	A program which replicates or mimics key features of a real world event in order to investigate its behaviour without the cost, time, or danger of running an experiment in real life
For Loop	Loops that have a predetermined beginning, end, and increment (step interval).

Possible Experiences
Use Makey Makeys to link computer science learning to electricity unit in science.

Prior Knowledge	
What I should already know ...	
Year 4:	<ul style="list-style-type: none"> To be able to create and share a game using sequential algorithms, debugging, events, loops, nested loops, and conditionals including until loops, while loops. Begin to understand binary
Year 5	<ul style="list-style-type: none"> Understand accessibility and the value of empathy, design accessible solutions for hypothetical apps Create an interactive poster applying digital citizenship understanding Create game in Artist or Sprite Lab using sequential algorithms, debugging, events, loops, nested loops, conditionals (until loops, while loops, if/else statements) functions and sprites.

What I will know at the end of the unit	
Objectives for the unit:	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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
Skills:	<ul style="list-style-type: none"> Data – run simple simulation to experience how computing can be used to collect data that identifies trends or patterns, discover machine learning and artificial intelligence, explore how data is used to enable a machine learning model to classify new data, learn about connections, URLs ,IP addresses and the DNS. Sprites – create own customised behaviours for sprites, create interactive pet which look and behaves how they wish Digital Citizenship - learn what do to if someone uses mean or hurtful language online Create a project in Artist or Sprite Lab using sequential algorithms, debugging, events, loops, nested loops, for loops conditionals (until loops, while loops, if/else statements) functions, sprites and variables.

Key Skills:

Sequencing — recap functions, sprites, interactions between sprites, loops and nested loops
Variables – explore the creation of repetition designs using variables
Data – run simple simulation to experience how computing can be used to collect data that identifies trends or patterns, discover machine learning and artificial intelligence, explore how data is used to enable a machine learning model to classify new data, learn about connections, URLs ,IP addresses and the DNS.
For Loops – look for patterns in puzzles and use for loops
Sprites – create own customised behaviours for sprites, create interactive pet which look and behaves how they wish
Digital Citizenship - learn what do to if someone uses mean or hurtful language online
End project – create project in Artist or Sprite Lab using sequential algorithms, debugging, events, loops, nested loops, for loops conditionals (until loops, while loops, if/else statements) functions, sprites and variables.
Application – programme simple game using Makey Makey to control