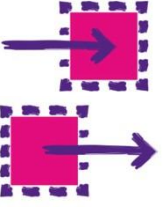







Year 6 Programming Progression 2020 - 2021

Y6	Programming - Input/Output - Consolidate	Computational Thinking - Patterns	What this looks like - Example Projects
GDS	<ul style="list-style-type: none"> Experiment and debug a program using a variable and a selection statement to improve the quality and simplicity. I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen (output). 	Can identify <u>patterns</u> in their program and use it to debug their program to make it as effective as possible.	<p>In Y6 children will be consolidating all of the concepts and approaches they have developed so far to create complex and purposeful programs.</p> <p>Children can create programs to solve specific problems incorporating science. Using computing to create programs act as pedometers or light sensors.</p>
EXS	<ul style="list-style-type: none"> Read, design and write a program using a variable to achieve a required output. I can use different inputs (including sensors) to control a device or onscreen action. 	Can identify <u>patterns</u> in their program and use it to debug errors in their program.	<p>Using previous programs they have created either in Scratch or Tynker. Looking at this to develop their 'can it better' attitude they can develop these into more complex systems.</p>
WTS	<ul style="list-style-type: none"> Read, design and write a simple program to achieve a required output. I know what an input and output is and how their used. 	Can identify <u>patterns</u> in their program.	<p>BBC What are Variables?</p> <p>BBC What is Selection?</p> <p>BBC is Input/Output?</p>

Key Vocabulary	Apps	Breakdown
 <p>Input/Output</p> <p>Input is data sent to a computer system from devices such as a keyboard, mouse, microphone or physical sensor. Input devices enable information from the outside world to get into a computer. Output is data or information communicated from a computer system to the outside world via various devices which include: monitors, memory sticks, speakers or projectors.</p>	  <p>trinket</p>  	<p>Swift can be used to practice certain concepts during lessons and to use prior to creating independent projects using various inputs/outputs. This will be game based and cannot be used solely to teach coding.</p> <p>Using Trinket, children should be exposed to another text based language in HTML. Children could create their own websites and online story tellers. A number of suggested projects are available in the shared drive.</p> <p>Scratch in Y6 can continue to develop their proficiency with coding and comparing the block based approach to coding with the numerous forms of text based languages.</p> <p>Using Micro:bits children will build on the projects from Y5 and will be able to create things like pedometers which uses the shake function as the input and can output that information as data specifically to track steps taken.</p>
 <p>Patterns</p> <p>If computer scientists see a pattern across an algorithm, they'll look to create a single module of repeatable code, sometimes called a function or procedure. Computer scientists want to solve problems quickly and efficiently. The recognition of patterns in input plays an essential role in machine learning.</p>		

NC KS2 Objectives

- 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