Year 6 Computing

Autumn 2: We Are Computational Thinkers

Session	National. Curriculum Statement	WALT	Learning Outcomes (Success Criteria)	Resources	Vocabulary
Subject Cultural Capital = Using & Applying computing knowledge to solve problems **Differentiation = please see the differentiation for the EXC EM & SEND (Please see SEND pupils IEPs when planning)** **Minimum expectations to check for understanding during lessons = targeted questioning / mini whiteboards/ peer talk /thumb signs** **Long term memory skill development strategy = LAST, LAST, LAST linked to the WALT** **Literacy & Numeracy skills development = ICT vocabulary bank linked to the WALT & include numeracy skills where they are linked to the WALT in the weekly planning**					
On Line Safety: Pupils learn about some common algorithms, recognising that more efficient solutions to the same problem can reduce the impact of computation on energy and other resources. They remix code on Scratch or Snap! websites, as permitted by Creative Commons licences for the code they work with, in much the same way as they might modify open source software. Pupils who wish to register for accounts on these sites need to observe the associated terms and conditions, which typically require parental consent.					
1	Design, write and debug programs that accomplish specific goals. Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	To find the shortest routes on a map	Children can write a sequence of instructions on how to get from school to a familiar location. Children can explain the algorithm for the shortest route.	Laptops/desktops Google Maps Scratch	Algorithm 'Divide and conquer' decomposition
2	Design, write and debug programs that accomplish specific goals. Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	To find the smallest number of coins to make change	Children can record an algorithm for finding the smallest number of coins to make an amount. Children can write a Scratch program to implement their algorithm	Laptops/desktops Google Maps Scratch	Algorithm 'Greedy algorithm' decomposition

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3	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	To understand random and linear search algorithms	Children can play maths games that represent random and linear searches. Children consider how they would program a computer to play the games.	Laptops/desktops Google Maps Scratch	Algorithm Search algorithm
4	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.	To understand binary search algorithms	Children understand that a binary search will cut the range of possible outcomes by half.	Laptops/desktops Google Maps Scratch	Search algorithm Binary search
5	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.	To understand selection sort algorithms	Children can write algorithms for a sort puzzle. Children can test and debug their algorithms	Laptops/desktops Google Maps Scratch	Algorithm Selection sort searches
6	Design, write and debug programs that accomplish specific goals. 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.	To understand quicksort algorithms	Children know real life applications and use of computers to sort information.	Laptops/desktops Google Maps Scratch	Selection sort algorithms Quicksort Search