

Level 3 - (Year 5 and 6) Ages 9-11	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	3.10	3.11	3.12
Science - Year 5												
Properties and Changes in Materials	√			✓				✓				
Forces				✓	√			✓				√
Science - Year 6												
Living things and their habitats							✓					
Light						√						
Electricity		✓				√						
Computing - KS2												
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	√	√	✓	✓	✓	√	✓	✓	✓	✓	√	✓
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	✓	√	√	√	✓	✓	√	√	√	√	√	✓
Design and Technology - KS2												
Design		✓	✓	✓	✓	✓	✓	✓				
Make	✓		√	✓		√	✓	✓				√
Evaluate		✓	√	✓	√	√	✓	✓				
Technical Knowledge	√	✓	√	✓	√	√	✓	✓	✓	✓	✓	✓
Music - KS2												
Play and perform in solo and ensemble contexts, using their voices and playing musical instruments with increasing accuracy, fluency, control and expression			√									
Improvise and compose music for a range of purposes using the interrelated dimensions of music			✓									



Listen with attention to detail and recall sounds with increasing aural memory			√									
English - KS2												
Reading - Word Reading	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reading - Comprehension	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Writing - Transcription		✓									✓	
Writing - Composition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Writing - Vocabulary, Grammar and Punctuation	✓	✓	✓	✓	✓	√	✓	✓	✓	√	√	√
Geography - KS2												
Physical Geography				✓								
Mathematics - Year 5												
Addition and Subtraction									✓	✓		
Multiplication and Division									✓	√		
Measurement	✓					√						
Geometry - properties of shapes				✓								
Mathematics - Year 6												
Number and Place Value									✓	✓		
Geometry - properties of shapes				✓								
Algebra									√	√		



Computing At Schools (CAS) Progression Grid Standards covered throughout the level 3 lessons on SAM Space and SAM Blockly. *Pink and Yellow levels covered throughout all.*



Level 3 - Ages 9-11	3.1 Properties of Matter	3.2 Morse Code	3.3 Guitar	3.4 Earthquake Simulator	3.5 Mars Rover	3.6 The Lighthouse	3.7 SAM Insect	3.8 Lava Lamp	3.9 Describing Expressions	3.10 Comparing Expressions	3.11 Apostrophe	
Software Used	SAM Space	SAM Space	SAM Space	SAM Space	SAM Space	SAM Space	SAM Space	SAM Space	SAM Blockly	SAM Blockly	SAM Space	
ALGORITHMS				•	•		•		•			
Orange Level												
Designs solutions (algorithms) that use repetition and two-way selection i.e. if, then and else.	✓	✓	√	√	√	✓	√	✓		✓	V	
Uses diagrams to express solutions.	✓	✓	✓	√	√	✓	√	✓	√	√	√	
Uses logical reasoning to predict outputs, showing an awareness of inputs.	√	√	√	√	√	√	√	√	√	√	√	
Blue Level												
Shows an awareness of tasks best completed by humans or computers.	√	√	√	√	√	√	√	√	√	√	√	
Designs solutions by decomposing a problem and creates a sub-solution for each of these parts.	√	√	✓	√	√	√	√	√	√	√	√	
Recognises that different solutions exist for the same problem.	√	√	√	√	√	√	√	√	√	√	√	
Purple Level												



Understands that iteration is the repetition of a process such as a loop.	√		√	√							
Recognises that different algorithms exist for the same problem.	√										
Can identify similarities and differences in situations and can use these to solve problems (pattern recognition).	√	√	✓	√							
Red Level											
Understands a recursive solution to a problem repeatedly applies the same solution to smaller instances of the problem.	✓				✓	√	✓			✓	√
Recognises that some problems share the same characteristics and use the same algorithm to solve both.	√	√	✓	√	✓	√	√	√	√	√	√
Understands the notion of performance for algorithms and appreciates that some algorithms have different performance characteristics for the same task.				✓	✓	√	√				√
Programming and D	evelopme	nt		·			•	•	•	•	
Orange Level											
Creates programs that implement algorithms to achieve given goals.	√	✓	✓	√	√	✓	√	√	✓	√	√
Declares and assigns variables.	✓	✓	√	✓	✓	✓	✓	✓			✓
Uses post-tested loop e.g. 'until', and a sequence of selection statements in	√		√	√							



programs, including an if,											
then and else statement.											
Blue Level											
Understands the difference between, and appropriately uses if and if, then and else statements.	√		√	√							
Uses a variable and relational operators within a loop to govern termination.	√			√							
Designs, writes and debugs modular programs using procedures.	√			√							
Knows that a procedure can be used to hide the detail with sub-solution.	√			✓							
Purple Level											
Understands that programming bridges the gap between algorithmic solutions and computers.	✓	√	✓	√							
Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control.	✓	✓		✓		✓	✓			✓	√
Red Level											
Knows the difference between, and uses appropriately, procedures and functions.		√	√	√		✓	√				√

