










Computing – Year 5



Autumn 2	Programming A - Repetition in Shapes					
Prior learning 	This unit progresses students' knowledge and understanding of programming. Within the Year 3 units, Programming A- Sequencing Sounds and Programming B- Events and Actions in programs , learners will have an awareness of the sequence of commands in a program.					
Lesson objective 	To identify that accuracy in programming is important	To create a program in a text-based language	To explain what 'repeat' means	To modify a count-controlled loop to produce a given outcome	To decompose a task into small steps	To create a program that uses count-controlled loops to produce a given outcome
Key vocabulary 	Program, Turtle, Commands, Code snippet	Algorithm, Design, Debug, FD (forwards), BK (backwards), LT (left), RT (right), CS (clear screen), PU (pen up), PD (Pen down), home	Pattern, repeat, repetition, count-controlled loop, algorithm, value	Repeat, repetition, count-controlled loop, trace, value	Repeat, Count-controlled loop, Decompose, Procedure	Count-controlled loop, Procedure, Debug, Program
Creative context 	Guides on how to use Turtle academy - https://turtleacademy.com/lessons				Guide from Turtle academy on how to create a procedure - https://turtleacademy.com/lessons/15	
Substantive knowledge 	Coding commands need to be specific and accurate. Coding/programming can be achieved using written/word-based codes.	An algorithm is an ordered set of precise instructions.	Repeat means 'to do or say something again'. A pattern of repeated code can be written with the repeat code to simplify it.	When repetition is used in programming, it is called looping.	Procedure is a named code snippet that can be run multiple times. This can simplify programs.	

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Disciplinary knowledge 	<p>How to move forward, backwards and side-to-side on a program using written commands.</p>	<p>How to write an algorithm, with specific and accurate code, to create letters.</p>	<p>How to identify repeated elements in a pattern. How to write a repeated code.</p>	<p>How to predict a shape based on the code. How to use repeated code to create a range of different shapes.</p>	<p>How to create a procedure which includes codes for multiple shapes.</p>	<p>How to debug a code by tracing through the code and reading it out loud to check it, Decomposing the program.</p>
Recorded learning 	<p>No recorded learning – Children to explore and trial the new software to move around and create numbers in Turtle academy.</p>	<p>No recorded learning – Children will design and create an algorithm to write their initials in Turtle academy.</p>	<p>No recorded learning – Children will design, create and simplify an algorithm to draw a square by adding a repeat code.</p>	<p>Children will design and create code for a range of shapes to program into Turtle academy (Activity 2 and 3).</p>	<p>No recorded learning – Children to create procedures for multiple shapes in Turtle academy.</p>	<p>Design, code, create and evaluate a program to create a wrapping paper design.</p>
Outcome for unit 	<p>Final piece – Wrapping paper design made up of shapes created in the Turtle academy programming system. Please save the picture of the wrapping paper design and the code into the children’s folders.</p> <p>End of unit evaluation – Please complete the teacher/self evaluation slide for this unit (the slide is in the folder), by writing their names in the correct boxes.</p>					
Future learning 	<p>In year 5, the children will continue to develop their programming skills, specifically with written code.</p>					