Subject: Computing	Year group: 4 Term: Spring 1	Title: Repetition in shapes

What should I already know?	Facts I will learn	Key questions
- Programs start because of an input - A sequence is the order in which instructions occur and are processed - A program includes sequences of commands - The sequence of a program is a process - The order of commands can affect a program's output - Different sequences can achieve the same output - Different sequences can achieve different outputs	- Some everyday tasks include repetition as part of a sequence, e.g. brushing teeth, dance moves - We can use a loop command in a program to repeat instructions - In programming there are indefinite loops and count-controlled loops - An indefinite loop will run until the program is stopped - You can program a loop to stop after a specific number of times - Patterns can occur in sequences, e.g. 'step 3 times' means the same as 'step, step, step' - Instruction order is important in a loop - Not all tools enable more than one process to be run at once	- Why is accuracy important in programming? - Can I create a program in a text-based language? - What does 'repeat' mean? - Can I use a count-controlled loop? - Can I decompose a task into small steps? - Can I create a program using count-controlled loops?

Key Skills	Experiences that school will provide	Key vocab	Definition
- To list an everyday task as a set of instructions including repetition - To use an indefinite loop to produce a given outcome - To use a count-controlled loop to produce a given outcome	- Cross-curricular links with Maths - Use of Logo text-based programming language	**Program**	The entire solution to the task, and an implementation of the algorithm as code
		Turtle	In Logo, the turtle appears on the screen and is given directions to move and draw

• To plan a program that includes appropriate loops to produce a given outcome • To recognise tools that enable more than one process to be run at the same time (concurrency) • To create two or more sequences that run at the same time			**Commands**	A single instruction that can be used in a program to control a computer
			Algorithm	A precise set of ordered steps that can be followed by a human and implemented on a computer to achieve a task
			Debug	The process of finding and correcting errors in a program
			Repeat/ repetition	Part of a program where one or more commands are run multiple times in a loop
Web links • Keeping children safe online | NSPCC Information about internet safety for children • Turtle Academy Activities to complete using the Logo programming language	**Experiences that could be provided at home** Discuss which everyday tasks or games contain repeated actions. Can your child write instructions including repeated steps?		**Loop**	Commands that repeatedly run a defined section of code
			Decompose	To break down a task into smaller, more achievable steps
			Procedure	A named code that can be run multiple times
			Count-controlled	A command that repeatedly runs a defined section of code a predefined number of times