

YEAR 1

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Programming A	<p>The three Prime ELGS of Communication and Language, PSED and Physical Development provide the foundations of which all other learning is built upon.</p> <p>No Specific ELG links.</p>	To introduce early programming concepts, exploring commands and algorithms.	To develop understanding of instructions in sequences, using commands in different orders to investigate how this affects the outcome. To design, test and debug algorithms.	To explore the concept of sequencing, using motion, sound and event blocks to create their own programs with sequences. To begin to apply stages of program design.	Programming A	To introduce early programming concepts, exploring commands and algorithms.	To develop understanding of instructions in sequences, using commands in different orders to investigate how this affects the outcome. To design, test and debug algorithms.

COMPOSITES

Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
 Create and debug simple programs
 Use logical reasoning to predict the behaviour of simple programs
 Recognise common uses of information technology beyond school

COMPONENTS

	1	2	3	4	5	6	End Point
	What do given commands do?	Can I act out a given word?	Can I combine forwards and backwards commands to make a sequence?	Can I combine four direction commands to make sequences?	Can I plan a simple program?	Is there more than one solution to a given problem?	This unit progresses children's knowledge and understanding of giving and following instructions. It moves from giving instructions to each other to giving instructions to a robot by programming it.
CONCEPTS Link to concept map	Programming Computer Science	Programming Computer Science	Programming Computer Science	Programming Computer Science	Programming Computer Science	Programming Computer Science	
SKILLS	Predict the outcome of a command on a device Match a command to an outcome	Follow an instruction Recall words that can be acted out Give directions	Compare forwards and backwards movements Start a sequence from the same place	Compare left and right turns Experiment with turn and move commands to move a robot	Explain what my program should do Choose the order of	Identify several possible solutions Plan two programs	Children will be able to use the commands forwards, backwards, left and right to plan and create a route for a BeeBot. Children will be able to use their computational knowledge to find

	Run a command on a device		Predict the outcome of a sequence involving forwards and backwards commands	Predict the outcome of a sequence involving up to four commands	commands in a sequence Debug my program	Use two different programs to get to the same place	different routes and algorithms for a Beebot, reaching the same destination.
KNOWLEDGE	To identify different devices To know what commands are	To understand forwards and backwards movements	To understand forwards and backwards movements	To understand forwards, backwards, left and right movements	To understand what debug means To identify when a device needs debugging To know what an algorithm is and what it does	To know what an algorithm is and what it does	Children will understand what an algorithm is and how we can use them with technology.
LESSON LINK	Moving a Robot	Moving a Robot	Moving a Robot	Moving a Robot	Moving a Robot	Moving a Robot	
PROGRESSIVE VOCABULARY	forwards backwards turn clear go commands	instructions directions	forwards backwards commands	left right turn commands	plan algorithm program	route plan program	To articulate, understand and use relevant vocabulary.
CURRICULUM EXPERIENCES						To design, create and test algorithms and programs.	
END POINT	Children will be introduced to floor robots. Children will talk about what the buttons might do and then try the buttons out. Children will consider the direction command buttons, as well as clear memory and run program buttons.	Children will think about the language used to give directions and how precise it needs to be. Children will give and follow instructions.	Children will focus on programming the floor robot to move forwards and backwards. Children will think about starting the robot from the same place each time. Using the same start position with fixed commands will allow children to	Children will use left and right turn commands along with forwards and backwards commands. Children will create their programs in this lesson through trial and error before moving on to planning their programs	Children will decide what their program will do. They will then create their program and test it on the robot. Where needed, children will also debug their programs.	Children will plan their routes before they start to write their programs. Children will be introduced to the idea of program design, where children need to plan what they want their program to achieve before they start programming.	Children will plan their routes before they start to write their programs. Children will be introduced to the idea of program design, where children need to plan what they want their program to achieve before they start programming.

			predict what a program will do.	out in the next lesson. Children will predict where given programs will move the robot to. Children make their predictions by stepping through the commands and matching the program steps to movements			
--	--	--	---------------------------------	---	--	--	--

