





MEDIUM TERM PLANNING

Subject	Topic/Key Question	Year Group	Term	Time Allocation
Computing	Algorithms	1	Aut 2	6 Hours
 Software/App – Bee Bots/Blue Bots/Bee Bot App				
 Vocabulary <ul style="list-style-type: none"> • Bee bot • Forward • Backward • Left • Right • Command • Device • Outcome • Plan • Algorithm • Program • Route • Clear • Go 				

Lesson Sequence	Time Allocation	Key Question/ WALT	Teaching Activities	Resources
Lesson 1	1 hour	WALT: explain what a given command will do	<p>Learners will be introduced to floor robots. They will talk about what the buttons on a floor robot might do and then try the buttons out. They will spend time linking an outcome to a button press. Learners will consider the direction command buttons, as well as the ‘clear memory’ and ‘run program’ buttons.</p> <ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to use the visual clues that buttons provide to help them make predictions about the robot’s direction of travel. ➤ Activity 2: Learners should be able to relate the movement of the robot to the command button that was used to cause that movement. ➤ Activities 1 – 2: Learners should have used the buttons as guided during the lesson and be able to relate the buttons to different outcomes. 	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>
Lesson 2	1 hour	WALT: act out a given word	<p>Learners will think about the language used to give directions and how precise it needs to be. They will also work with a partner to give and follow instructions. These real-world activities should, at suitable points during this lesson, be related to the floor robot introduced in Lesson 1.</p> <ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to act out each instruction given and limit their response to just that. 	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>

			<ul style="list-style-type: none"> ➤ Activity 2: Learners should be able to recall words that they have previously heard that can be acted out, and give instructions to each other, as demonstrated in Activity 1. They should be able to follow instructions that they are given by a partner. ➤ Activity 3: Learners should be able to give directions to others. 	
Lesson 3	1 hour	WALT: combine 'forwards' and 'backwards' commands to make a sequence	<p>Learners will focus on programming the floor robot to move forwards and backwards. They will see that the robot moves forwards and backwards a fixed distance. This highlights the idea that robots follow a clear, fixed command in a precise and repeatable way. Learners will think about starting the robot from the same place each time. Using the same starting position with fixed commands will allow learners to predict what a program will do.</p> <p>Note: This lesson focuses specifically on forward and backward movement only. This is to ensure that learners are developing a depth of knowledge in the concepts surrounding programming, as well as developing their ability to make the robot move. The success criteria for this lesson highlight this and ensure that the learners' knowledge is built in a suitably paced way.</p> <ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to program a floor robot using a forwards command. ➤ Activity 2: Learners should be able to program a floor robot using a backwards command. ➤ Activity 4: Learners should be able to step through forwards and backwards commands in a given program and predict where the robot will move to 	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>

Lesson 4	1 hour	WALT: combine four direction commands to make sequence	<p>Learners will use 'left turn' and 'right turn' commands along with 'forwards' and 'backwards' commands. Doing this will allow learners to develop slightly more complex programs. Learners will create their programs in this lesson through trial and error, before moving on to planning out their programs in Lesson 5. In Activity 3, learners will predict where given programs will move the robot to. Learners will make their predictions by looking at the commands and matching the program steps to movements.</p> <ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to identify that left and right commands turn the robot equal amounts left or right. ➤ Activity 2: Learners should apply their knowledge of the robot's movement to input commands to move the robot to a given square. ➤ Activity 3: Learners should be able to step through a given program one command at a time, to predict where the robot will move to from a given start position. 	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>
Lesson 5	1 hour	WALT: plan a simple programme	<p>Learners will decide what their program will do. They will then create their program and test it on the robot. Where needed, learners will also debug their program.</p>	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>

			<ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to identify routes and point out squares that will be travelled over. ➤ Activity 2: Learners should be able to identify appropriate command cards and place them on the route they have identified. 	
Lesson 6	1 hour	WALT: find more than one solution to a problem	<p>Learners will be encouraged to plan routes around a mat before they start to write programs for those routes. The activities in this lesson also introduce the concept of there being more than one way to solve a problem. This concept is valid for a lot of programming activities: the same outcome can be achieved through a number of different approaches, and there is not necessarily a 'right' approach. The lesson also introduces the idea of program design, where learners need to plan what they want their program to achieve before they start programming.</p> <ul style="list-style-type: none"> ➤ Activity 1: Learners should be able to identify at least two different routes to get from the same start position to the same end square ➤ Activity 2: Learners should plan programs for each of the routes they have selected ➤ Activity 2: Learners should test their programs and address any bugs they find 	<p>Bee Bots Blue Bots I-pads Teach Computing resources</p>