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| **Playing & Exploring Bee-Bot: Routes** | |
| **Learning Objective:**  To understand that a computer follows precise commands and will respond to those commands consistently | **Success Criteria:** |
| **Activity: Plugged** | |
| Make Bee-bot part of continuous provision in the room on a table top or marked out space so that children can switch on and explore what Bee-Bot can do.  You might mark out some simple routes for children to try :  follow a straight line  follow a zigzag  climb up and down steps | |
| **Help! I’m Stuck!**  Remember Bee-Bot has the ability to move accurately in 15cm steps and to turn in 90 degree increments. | **Need a challenge!  What next?**  Leave some large sheets of plain paper and felt tips for children to draw their own routes. |

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| **Playing & Exploring Bee-Bot: Surfaces** | |
| **Learning Objective:**  To be able to plan and predict the behaviour of simple programs | **Success Criteria:** |
| **Activity: Plugged** | |
| Identify some different surfaces to try e.g. carpet   * tiles * concrete * grass * plastic * cardboard * wood   Which surface does Bee-Bot work best on? How do you know? Why is this? Does everyone agree?  NOTE: This work might link with other work on materials and so you might want to decide when to intervene in order to introduce specific vocabulary. | |
| **Help! I’m Stuck!** | **Need a challenge!  What next?**  Set up some experiments with different inclines for Bee-bot to travel up and down. |

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| **Playing & Exploring Bee-Bot: How far?** | |
| **Learning Objective:**  To be able to use non-standard measures.  To be able to predict the behaviour of simple programs | **Success Criteria:** |
| **Activity: Plugged** | |
| For this activity, children explore how  far Bee-Bot can travel.  Start with materials available in the room and use as non-standard units of measure. For example, estimate and then investigate how many Lego Bricks, counters or paperclips are needed to represent how far a Bee-Bot moves with each step. | |
| **Help! I’m Stuck!**  Think about how you mark the start and end.  A key part of this activity is the discussion that should take place. Children may need adult intervention to suggest what objects to try. | **Need a challenge!  What next?**  This can then provide a starting point to explore standard units of measure and the use of  rulers and measuring tapes. |

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| **Playing & Exploring Bee-Bot: One Step More** | |
| **Learning Objective:**  To be able to use logical reasoning to predict the behaviour of simple programs | **Success Criteria:** |
| **Activity: Plugged** | |
| Provide large sheets of paper and felt tips or go outside where children can do can do chalk drawings.    Model how to design a Bee-Bot trail from a starting point to a target such as a flower.  Emphasise the importance of measuring the trail to ensure the Bee-Bot can reach and turn at particular points.  Divide children into pairs and then give each pair a Bee-Bot, some chalk and either a ruler or concrete materials they can use as non-standard units. | |
| **Help! I’m Stuck!**  For children who are not yet ready to use standard rulers or measuring tapes make 15cm Bee-Bot rulers. | **Need a challenge!  What next?**  Can children design a circular route to get Bee-Bot back home? |

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| **Bee-Bot Trail : Challenge** | |
| **Learning Objective:**  To be able to work with a friend to plan a route for Beebot  To plan, test and debug simple programs. | **Success Criteria:** |
| **Activity: Plugged** | |
| Children work collaboratively.    Use the Bee-Bot symbol cards to map out a short trail for Bee-Bot to move around the grid.    Draw the path on paper then work together to get Bee-Bot to follow the route. | |
| **Help! I’m Stuck!**  Use squared paper to plan the route and walk it through with fingers first.  Place symbol cards onto the squares to form the route. | **Need a challenge!  What next?**  When ready, children could plan their own route and ask a group of their friends to test it out. Does everyone end up at the same place? |

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| **Bee-Bots Goes Shopping** | |
| **Learning Objective:**  To be able to create an efficient program to achieve a specific goal | **Success Criteria:** |
| **Activity: Plugged** | |
| Either use the purchasable Bee-Bot Busy Street mat or create one of your own.  Provide shopping lists of things Bee-Bot needs to pick up.  You may need to discuss where you would purchase each item from first.  NOTE: Think about how you could record evidence of this activity. | |
| **Help! I’m Stuck!**  Start with just one item then build to two or three moving backwards and forwards along the street. | **Need a challenge!  What next?**  Develop clues relating to the different locations on the street. E.g. ‘Bee-Bot needs to buy some apples but he needs to get some money out from the cash machine first. Help Bee-Bot get to the bank and then program him to visit the shop where he can buy some bananas’. |

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| **Bee-Bot’s Journey** | |
| **Learning Objective:**  To be able to plan and combine a sequence of commands to achieve a specific goal. | **Success Criteria:** |
| **Activity: Plugged** | |
| This kind of activity could be created with any story where a journey is involved- The example here is from the book Rosie the Hen by Pat Hutchins involved  After reading, the class/group jointly construct a Bee-Bot mat that includes the different locations in the farmyard that Rosie visits. Once completed, dress two Bee-Bots as Rosie the Hen and the fox. Collaboratively retell the story and agree the sequence of moves Bee-Bot will need to make to follow the same path that Rosie and the fox followed. Once programmed the students place the Bee-Bots on the mat and see if they can follow the path correctly.  This activity can be a stimulus for other similar activities  Create mats relating to other popular children's texts that include journeys. | |
| **Help! I’m Stuck!**  Use symbol cards to help plan the route. Try one altogether first before more independent work. | **Need a challenge!  What next?**  Can children make their program more efficient? |

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| **Bee-Bot Scenario** | |
| **Learning Objective:**  To be able to extend vocabulary related to position and direction. | **Success Criteria:** |
| **Activity: UnPlugged** | |
| To engage students in discussion about positional and directional language. Provide children with the following scenario:  ***‘The creators of the Bee-Bot have decided they want to make a new Bee-Bot that is even better. One suggestion they have had is that the new robot should be able to be told what to do using a real voice rather than by pressing buttons. What words or sentences would the Bee-Bot need to understand to be able to follow these directions?’***  Pairs should discuss this first – the join to make fours. Next collate ideas from whole class.  Create a mind map of ideas.  Once completed, display the concept map in the room. Encourage children to experiment with the different words and sentences when using the Bee-Bots and providing other students with instructions.  Words could include:  forward, backwards, up, down, around, right, left, under, over, through, beside, next to, wait, pause, move, go, turn, rotate, 360 degrees, face, direction etc. | |
| **Help! I’m Stuck!** | **Need a challenge!  What next?**  Could the children come up with symbols for new words and phrases they have thought of? |

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| **BEE-Bot App: Recording your route?** | |
| **Learning Objective:**  To be able to create, record, test and debug simple algorithms | **Success Criteria:** |
| **Activity: Plugged** | |
| iPhone Screenshot 3  ***Set a rule such as***  ***Only one sequence of instructions before you press go.***  Start at Challenge 1:  How far can you go before you make a mistake?  ***Introduce a method of recording instructions***  Follow your instructions.  Draw a small bug when you spot a mistake.    **Debug** your instructions and try again.  Were you correct? | |
| **Help! I’m Stuck!** | **Need a challenge!  What next?**  How many challenges can you complete by programming Bee-Bot with a complete sequence of instructions and without making a mistake? |

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| **All About Bee-Bot** | |
| **Learning Objective:**  To investigate how a simple program behaves and use logical reasoning to predict future behaviour. | **Success Criteria:** |
| **Activity: Plugged** | |
| Allow the children to explore for themselves but look for opportunities to:  Talk about   * How it looks like a bee but it is a robot * that it is needs batteries – and where these are * it needs a human to program it to move; * what the buttons mean * the 'go' button to make the Bee-Bot move along a mat * the 'clear' button to delete a set of commands and 'tell the Bee-Bot to start again * How to make it turn left and right   Once children start to explore what Bee-Bot can do, consolidate   * how to combine sequences of commands to make the Bee-Bot travel to further and along different routes * how to press the 'pause' button to make the Bee-Bot temporarily stop at a place on a mat before continuing on its journey. | |
| **Help! I’m Stuck!**  **See videos on the TTS website** [**here**](http://www.tts-group.co.uk/shops/tts/Products/PD1723538/Bee-Bot-Floor-Robot/) **:** | **Need a challenge!  What next?**  Explain to an adult or friend what you can make Bee-Bot do. |