



Foundation Stage	Topic Title: Programming Bee Bots	Key Vocabulary
<p>National Curriculum Objectives:</p> <p>To understand the meaning of directional arrows</p> <p>To follow a simple sequence of instructions</p> <p>To experiment with programming a Bee-bot/Blue-bot</p> <p>To explore and tinker with hardware to develop familiarity and introduce relevant vocabulary.</p> <p>To experiment with programming a Bee-bot/Blue-bot and to learn how to give</p>	<ul style="list-style-type: none"> • <u>Understanding arrows</u> <ul style="list-style-type: none"> ▪ With the set of Activity: Arrow cards you have kept aside for classroom use, with the discuss what the arrows mean and their names (forwards, back, left and right) with the children. ▪ Ask the children to stand up. Hold up one of your arrow cards to show them. If you hold up the forwards or back arrow, they must move one step in that direction. If you hold up the left or right arrow, they must turn in that direction (not sidestep). Practise this a few times. ▪ Starting in the classroom, follow the route you have set out around the school. Allow the children to lead the way and simply observe. If the children make a mistake, allow this to happen and then when they realise, encourage them to think about why it happened and how to solve the problem. • <u>Key questions</u> <ul style="list-style-type: none"> ▪ Are the children able to follow simple instructions? ▪ Do the children recognise the meaning of different arrows? ▪ Can the children use their knowledge of the meaning of arrows to move in the correct direction? • <u>Introducing the Bee-Bot</u> <ul style="list-style-type: none"> ▪ Once you have positioned the Bee-Bots in your learning environment, position yourself (or ensure another adult is present) to provide support or guidance if the children ask for it. ▪ Allow the children to explore and experiment with the Bee-Bots at their own pace, without any direction for the learning. • <u>Key questions</u> <ul style="list-style-type: none"> ▪ Show an interest in pressing the buttons on the Bee-Bot to see what happens? ▪ Use their critical thinking skills to explore the functions of the Bee-Bot? ▪ Have an awareness of how to use the Bee-Bot? ▪ Use their knowledge of the meaning of arrows to try to program the Bee-Bot? • <u>Simple Bee-Bot programming</u> <ul style="list-style-type: none"> ▪ Gather a small group of children and ask them to sit in a circle. ▪ Look again at the Activity: Arrow signs from the previous lesson and recap their meanings. ▪ Show the children the arrows on the Bee-Bot and explain how they work. ▪ Choose some of the simpler cards from the Activity: Bee-Bot sequence cards (one-step or two-step sequence cards) and lay them out on the floor, face down. Put the Bee-Bot in the centre of the circle. ▪ Select a child to come and turn over a sequence card. ▪ The child must then program the Bee-Bot to follow the instructions on the card. ▪ If the children encounter a problem, talk them through how to debug the issue by asking: <ul style="list-style-type: none"> ▪ What do you think went wrong? How do you think you could fix it? Let's start again. What can we do differently this time? ▪ Repeat so that each child has at least one turn. • <u>Key questions</u> <ul style="list-style-type: none"> ▪ Recall the meaning of directional arrows? ▪ Use their knowledge of the meaning of arrows to try to program the Bee-Bot? ▪ Associate the picture of an arrow with the movement of the Bee-Bot? ▪ Identify a problem? 	<p>Forward</p> <p>Back</p> <p>Backwards</p> <p>Right</p> <p>Left</p> <p>Arrow</p> <p>Direction</p> <p>Turn</p> <p>Straight on</p> <p>Directions</p> <p>Route</p> <p>Program</p> <p>Algorithm</p> <p>Instructions</p> <p>Circle</p> <p>Debug</p> <p>Sequence</p>



<p>simple command</p> <p>To learn to debug instructions, with the help of an adult, when things go wrong.</p> <p>To learn that an algorithm is a set of instructions to carry out a task, in a specific order.</p> <p>To follow an algorithm as part of an unplugged game.</p>	<ul style="list-style-type: none"> ▪ Solve a simple problem when given some adult guidance? • Understanding algorithms <ul style="list-style-type: none"> ▪ Remind the children that an algorithm is a set of instructions set out in a specific order. Tell them that they are going to use their bodies to follow some algorithms, just like they have been doing with the Bee-Bots. ▪ Hand out a sequence card to each child from the Activity: Bee-Bot sequence cards, tailoring the level of difficulty accordingly (one-step and two-step are the simplest). ▪ Allow the children time to look at their cards and think about the instructions. ▪ Ask the children to stand up one by one, and carry out the instructions on their sequence card, moving their body forwards, back and turning left or right. ▪ Encourage the children to count the number of steps out loud as they move. ▪ When every child has had a turn, swap the cards and repeat. • Programming a Bee-Bot <ul style="list-style-type: none"> ▪ After placing the Bee-Bots and Activity: Bee-Bot sequence cards in your teaching environment, allow the children to explore the Bee-Bots and experiment with pressing the buttons and trying to program a sequence. ▪ Position yourself (or another adult) to provide support or guidance if the children ask for it. Remind the children to look carefully at the arrows on the cards and think about how to program the Bee-Bot to follow the sequence. ▪ If the children encounter problems, encourage them to think critically to try and debug the issue. ▪ Children that are particularly engaged in the activity may enjoy creating a map or drawing out a route or path for their Bee-Bot to follow, creating their own sequences of instructions in the process. <p>Key questions</p> <ul style="list-style-type: none"> ▪ Recall the meaning of directional arrows? ▪ Use their knowledge of the meaning of arrows to move in the correct direction? ▪ Follow the sequence on their card and move in the correct way? ▪ Think of how to solve a simple problem when given some adult guidance? <p>Key questions</p> <ul style="list-style-type: none"> ▪ Recall the meaning of directional arrows? ▪ Follow the sequence to program the Bee-Bot? ▪ Show an awareness of the meaning of an algorithm? ▪ Associate the picture of an arrow with the movement of the Bee-Bot? ▪ Identify a problem? ▪ Think of how to solve a simple problem when given some adult guidance? 	
	Previous Learning Experiences:	
	Future Learning Experiences:	
	Future computing experiences and lessons throughout the school from Years 1-6.	



Foundation Stage	Topic Title: Using a computer	Key Vocabulary
<p>National Curriculum Objectives:</p> <ul style="list-style-type: none"> To learn what a keyboard is and how to locate relevant keys. To learn how to log in and log out. To understand why we need to log in and out. To learn what a mouse is and to develop basic mouse skills such as moving and clicking. To use a simple online paint tool to create digital art. To learn what a mouse is and to develop basic mouse skills such as moving and clicking. 	<ul style="list-style-type: none"> Keyboards <ul style="list-style-type: none"> Look at a real computer together and name the different parts: Monitor Computer tower Keyboard Mouse Look more closely at the keyboard. Ask the children: what it is used for? Have any of them used one before? Explain that sometimes keyboards are not separate but shown on a screen instead. Can the children think of where they have seen this before? (Phone screen or tablet). Hand out a copy of the Activity: Keyboard picture to each child. Look at them together and ask the children to talk about what they can see. Ask the children to point out any letters or numbers that they recognise. Discuss (if relevant) the fact that the letters are uppercase. Ask children to look at the numbers. Call out a number and ask the children to find and point to that number. Repeat. Give each child a coloured pencil and ask them to colour in the letters in their first name. Key questions <ul style="list-style-type: none"> Can they name the keyboard? Can they explain what a keyboard is used for? Can they recognise and identify any familiar letters, numbers or symbols on the keyboard? Can they find the letters in their own name? Are they aware of any other names for the different computer parts (mouse etc.)? Logging in and out <ul style="list-style-type: none"> Explain to the children that they are going to log in and log out of the computer. Ask if any of them know what 'log in' and 'log out' mean. Explain why we log in and out and talk about the importance of computer safety and protecting our personal files. Hand out the Activity: Login cards and give the children time to look at them. Ask them to point to their name on the card and then to read their password. Give children time to locate the correct keys on the keyboard and help them to ensure the cursor is in the correct place so they can start typing. Allow the children time to log in to the computer using their username and password, teaching them to use the tab button to move down to the next textbox when they have typed their username. Show the children how to use the mouse to log out. Repeat the process again so that the children can practise. Keep each child's copy of Activity: Login cards for the next lesson. Key questions <ul style="list-style-type: none"> Use the phrases 'log in' and 'log out' correctly? Recognise and identify any familiar letters, numbers or symbols on the keyboard? Find the letters in their own name? 	<p>Computer Computer tower Monitor Keyboard Mouse Letters Numbers Uppercase Lowercase Type Log in Log out Computer safety Protect Password Private Secure Security Lock Personal Left-click Right-click Arrow Cursor Paint Stamp Click Drag Move Drop</p>



- Find and use the tab key?
- Demonstrate awareness of why it is important to have a password?
- Use and navigate with the mouse?
- **Mouse control**
 - Hand out each child's Activity: Login card and ask the children to log in to the computer.
 - Show them the mouse and ask what it is called. Can any of the children tell you what it is used for?
 - Show the children that moving the mouse moves the arrow on the screen. Remember that moving the mouse will be an alien concept for many children that are only used to touch screens.
 - Allow the children some time to move their mouse around and watch the arrow move around the screen.
 - Stop the children and show them the two buttons. Talk about how to position your hand correctly and use your pointer finger to left-click on the mouse.
 - Open the paint application (whatever software you use in your setting, i.e Microsoft Paint, or Sketchpad) for all the children and ask them to move their mouse around on the screen while holding their finger down on the left button.
 - The rest of the session can be spent allowing the children time to experiment with making marks on the paint tool, using their mouse. If any children are particularly adept at this, talk to them individually about changing the colour or size of the marks.
 - The teacher should close down and log out for the children.
- **Key questions**
 - Explain what the mouse is for?
 - Move the mouse and navigate around the screen with accuracy?
 - Left-click on the mouse?
 - Hold their finger down on the left button while moving the mouse?
 - Use basic mouse skills to make marks on the screen using the paint application
- **Mouse control - clicking**
 - Hand out each child's Activity: Login cards and ask them to log in to the computer.
 - Recap how to use and move the mouse with the children.
 - Talk again about how to position your hand properly and which finger to use to left-click.
 - Open the paint application (whatever software you use in your setting) for all the children and show them how to use the stamp tool. (The stamp tool is used to create stamped images on the screen, by left-clicking with the mouse).
 - The rest of the session can be spent allowing the children time to experiment with creating their own digital art using the stamp tool. Encourage children to move their mouse around the screen and click in different places to create their pictures.
 - Children may also like to add marks to their pictures, using the skills they learned in the previous session.
 - Model how to close down the software (click on the cross in the top right corner).
- **Key questions**
 - Recall how to move and use the mouse?
 - Left- click and then release in order to create a stamp on screen?
 - Navigate around the screen with some accuracy?
 - Use their basic mouse skills to make stamp art on the screen using the paint application?



	<ul style="list-style-type: none"> • <u>Mouse control – clicking and dragging</u> <ul style="list-style-type: none"> ▪ Hand out the children’s individual Activity: Log in cards and ask them to log in to the computer. ▪ Recall how to use and move the mouse. ▪ Talk again about how to position your hand properly and which finger to use to left-click. ▪ Open your chosen game or software application and show children how to play. Talk about the importance of clicking and holding your finger down on the mouse as you move the object across the screen. ▪ The rest of the session should be spent allowing children to play the game and practise clicking and dragging. ▪ Remind the children how to close down the game (recapping from the previous lesson). • <u>Key questions</u> <ul style="list-style-type: none"> ▪ Are they able to recall how to move and use the mouse? ▪ Can they left click and hold their finger down, while simultaneously moving the mouse, in order to click and drag a digital object? ▪ Can they navigate around the screen with increased accuracy? ▪ Are they able to use their basic mouse skills to participate in a simple computer game or application? ▪ Are they able to log in and log out independently? 	
	<p>Previous Learning Experiences:</p>	
<p>Possible Community Links/trips</p>	<p>Future Learning Experiences:</p>	
	<p>Future computing experiences and lessons throughout the school from Years 1-6.</p>	