


Subject	Topic/Key Question	Year Group	Term	Vocabulary
Computing	Programming	EYFS	Summer 1	 <ul style="list-style-type: none"> <li>• Forward</li> <li>• Backwards</li> <li>• Left</li> <li>• Right</li> <li>• Arrow</li> <li>• Route</li> <li>• Instructions</li> </ul>

By the end of this unit children will

- Understand the meaning of directional arrows
- Be able to follow a simple sequence of instructions
- Experiment with programmable toys
- Sequence arrows to create a route
- Be able to program a programmable toy to perform a simple task

Lesson Sequence	Key skill	Teaching Activities (Possible cross curricular opportunities)	Resources/ Enhancements to provision for following week
Lesson 1	To understand the meaning of directional arrows To follow a simple sequence of instructions	<p>1. With the set of <i>Activity: Arrow cards</i> 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.</p> <p>2. 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 <b>turn</b> in that direction (not sidestep). Practise this a few times.</p> <p>3. 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.</p> <p><b>Prompts for learning</b></p> <p>Look at the arrows. Which direction are they asking you to turn?</p> <p>Remember that you need to turn your body to face the correct direction before you move.</p>	Set a route around the school or the outdoor area, pinning the <i>Activity: Arrow cards</i> on the wall or stick on to doors to show which way the children should go.

		<p>Have you gone the wrong way? Why did that happen?</p> <p>Can you work out how to get back on track?</p>	
Lesson 2	<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>	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Allow the children to explore and experiment with the Bee-Bots at their own pace, without any direction for the learning.</li> </ol> <p><b>Prompts for learning</b></p> <p>I wonder what happens if I press this button?</p> <p>I am going to press the right/left/forward/back arrow</p> <p>I am going to press this arrow 5 times. 1, 2, 3, 4, 5. Oh look, it's moving forwards 5 paces!</p> <p>I'm going to try and program my Bee-Bot to go under this chair!</p> <p>I wonder how it knows which way to move?</p> <p>How is the Bee-Bot moving?</p> <p>Let's make our Bee-Bots bump into each other!</p>	Bee-Bots or Blue-Bots (or similar product)
Lesson 3	<p>To experiment with programming a Bee-bot/Blue-bot and to learn how to give simple commands</p> <p>To learn to debug instructions, with the help of an adult, when things go wrong</p>	<ol style="list-style-type: none"> <li>1. Gather a small group of children and ask them to sit in a circle.</li> <li>2. Look again at the Activity: Arrow signs from the previous lesson and recap their meanings.</li> <li>3. Show the children the arrows on the Bee-Bot and explain how they work.</li> <li>4. Choose some of the more simple 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.</li> <li>5. Select a child to come and turn over a sequence card.</li> <li>6. The child must then program the Bee-Bot to follow the instructions on the card.</li> <li>7. If the children encounter a problem, talk them through how to debug the issue by asking: <ol style="list-style-type: none"> <li>a. "What do you think went wrong?"</li> <li>b. "How do you think you could fix it?"</li> <li>c. "Let's start again. What can we do differently this time?"</li> </ol> </li> <li>8. Repeat so that each child has at least one turn.</li> </ol> <p><b>Prompts for learning</b></p> <p>Use the sequence card to program the algorithm.</p> <p>Let's give the Bee-Bot a set of instructions. When we give instructions like this, it's called an algorithm.</p> <p>I wonder how it knows which way to move?</p> <p>How is the Bee-Bot moving?</p> <p>What do you think went wrong?</p> <p>How do you think you could fix it?</p> <p>Let's debug the problem.</p>	<p>Activity: Arrow cards from Lesson 1 (see Classroom resources)</p> <p>Activity: Bee-Bot sequence cards (see Classroom resources)</p> <p>Bee-Bots or Blue-Bots (or similar product)</p>

		Let's start again, what can we do differently this time?	
Lesson 4	<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> <p>To learn to debug instructions, with the help of an adult, when things go wrong</p>	<p>1. 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.</p> <p>2. 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).</p> <p>3. Allow the children time to look at their cards and think about the instructions.</p> <p>4. 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.</p> <p>5. Encourage the children to count the number of steps out loud as they move.</p> <p>6. When every child has had a turn, swap the cards and repeat.</p> <p><b>Teacher Prompts</b></p> <p>Use the sequence card to program the algorithm.</p> <p>Can you follow your set of instructions? When we give instructions like this, it's called an algorithm.</p> <p>Count your steps out loud.</p> <p>What do you think went wrong?</p> <p>How do you think you could fix it?</p> <p>Let's debug the problem.</p> <p>Let's start again, what can we do differently this time?</p>	<i>Bee-Bot sequence cards</i>
Lesson 5	<p>To experiment with programming a Bee-Bot/Blue-Bot and to learn how to give simple commands</p> <p>To learn to debug instructions, with the help of an adult, when things go wrong</p>	<p>1. 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.</p> <p>2. 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.</p> <p>3. If the children encounter problems, encourage them to think critically to try and debug the issue (use the questions and prompts below).</p> <p>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> <p><b>Prompts for learning</b></p> <p>Use the sequence card to program the algorithm.</p> <p>Let's give the Bee-Bot a set of instructions. When we give instructions like this, it's called an algorithm.</p> <p>What do you think went wrong?</p>	<p>Bee-Bots or Blue-Bots</p> <p><i>Bee-Bot sequence cards</i></p>

	<p>How do you think you could fix it?</p> <p>Let's debug the problem.</p> <p>Let's start again, what can we do differently this time?</p> <p>Can you create your own sequence for your Bee-Bot?"</p> <p>In which direction would you like it to move?</p> <p>Which arrows do you need to use?</p>	
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