Dereham Church Infant and Nursery School- Computing

	Year group: Year 1	Area/topic: Algorithm – Beebots (Spring 2)
	(objectives from NC/ELG/Development matters) Pupils to be taught: • 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.	

Prior learning	Future learning
Children would have already been introduced to Beebots in Reception where they explored playing with them. During Spring 1 they learnt about the different directions on a Beebot and used arrow cards to begin to understand that an algorithm is a set of instructions. They will build on this by creating an algorithm for the Beebot to follow using their knowledge of directions and arrow cards.	In Year 2 during Spring 1, the children will be revisiting using Beebots to create algorithms however they will build on this skill by being given different challenges to overcome.

<table>
<tr><th colspan="2">What pupils need to know or do to be secure</th></tr>
<tr><th>Key knowledge and skills</th><th>Possible evidence</th></tr>
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Children to secure their knowledge of what an algorithm is.
Children to be able to input a set of directions using the arrow buttons on a Beebot to get the Beebot to move.
Children to plan the algorithm first on paper before inputting it into the Beebot.
Children to create an algorithm that will get the Beebot from A to B using a Beebot map.
Children to make their own Beebot maps with certain features on for them to then programme their Beebot to get to.
Children to be able to verbally explain the algorithm they created and the effectiveness of it.
Children to consider alternative algorithms that will still achieve the same end goal e.g. (Which other route could the Beebot take on the map to reach the correct place?).
Children to debug their algorithm by making edits to their written plans to improve it.

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Children to use Beebots and a Beebot map to create different algorithms to get the Beebot from A to B.
Children to create their own Beebot maps using paper or tape on the ground.
Children to plan their algorithm before inputting it by drawing the direction arrows or cutting and sticking the arrow cards in a specific sequence.

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<tr><th>Key vocabulary</th></tr>
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Beebot – Robot in the shape of a bee.
Algorithm – A set of ordered steps that can be followed by a human or computer to achieve a task.
Instructions – A direction or order.
Sequence – A basic algorithm. A set of logical steps carried out in order.
Program – A set of ordered commands that can be ran by a computer to complete a task.

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Common misconceptions	Books linking to this area
Children may think they can debug and edit their algorithm mid-way through the Beebot running the program. However, children must be reminded that they need to press the 'X' button to delete the programmed sequence first before creating a new one. Children must also be reminded that unlike Scratch Jr they cannot edit just a small part of the algorithm, they will need to start again.	• The adventures of Beebot! - https://www.storyjumper.com/book/read/71430025/The-adventure-of-a-bee-bot-
Memorable first hand experiences	**Opportunities for communication**
• Children will be hands on using Beebots.	Communication around what their algorithm is and the effectiveness of it will be encouraged throughout this half term. Children should be seen to be 'thinking out loud' when planning their algorithms.

DCINS Reasonable adjustments for pupils with SEND

Communication and Interaction	Cognition and Learning
• Make sure the children are using the correct equipment for them. • Consider headphones to support the child to hear. • Have someone available to read any text that is on the screen.	• Consider adjusting the brightness and colour so they can see the screen more easily. • Have someone available to read any text that is on the screen. • Shorter steps given at appropriate time. • Simpler logins. • Adult to support with logging in. • Print out which the different functions and tools on. • Step by step guide printed out for them to refer to.
Social, Emotional and Mental health	**Sensory and Physical**
• Timer so they understand when they will need to log off. • Clear boundaries. • Online safety instructions made clear.	• Larger text/equipment. • Print offs instead of screen time. • Appropriate desk, chair, keyboard and mouse.