Diocese of Norwich
Education and Academies Trust

Year group: Year 2	Area/topic: Algorithm – Beebots challenges (Spring 1)
(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 will have experienced using Beebots in Reception and Year 1. In Reception, the children will have been first introduced to the robot through exploration. They then built on this in Year 1 where they began to learn how to think more precisely about creating a simple algorithm for the Beebot to follow to get to certain locations on a map. This will then be built on further in Year 2 where they will now use their knowledge of programming the Beebot to complete challenges.	

What pupils need to know or do to be secure

Key knowledge and skills

- Recap knowledge of internet safety rules during a whole school Safer Internet afternoon (6.02.2024).
- To recap knowledge of the buttons on a Beebot and what they do.
- To consider what set of instructions they need to give their Beebot in order to solve different challenges.
- To record the algorithm on paper using arrows to support in modifying and editing the instructions.
- To consider how to modify the algorithm to improve the outcome.

Key vocabulary

- 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.
- Modify – Change or edit.
- Debug – Finding and correcting errors in a program.

Possible evidence

- Teacher to create a maze on the carpet using tape. Children will need to consider what algorithm they will need to create to complete the maze.
- Children to attach felt tip pens to their Beebot using tape and be challenged to program their Beebot to draw specific pictures on paper.

Common misconceptions

- 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

Books linking to this area

Memorable first hand experiences	Opportunities for communication
• Children to make their own challenges for their friends to solve. • Safer Internet Day afternoon (Date will be confirmed on an annual basis depending on the year it is being celebrated that year).	• Children will be encouraged throughout this unit to discuss what instructions they are giving their Beebot and what impact this is having. • Children will also be encouraged to problem solve out loud.

Dereham Church of England Infant and Nursery Academy

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.