

Year 2 Computing Knowledge Organiser

Autumn 2

Theme: Programming (Robot Algorithms)



Key Knowledge and Skills

By the end of this unit children will..

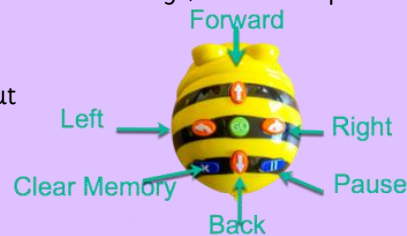
develop their understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Children will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming, develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.

Floor Robots

Robots are machines that we can program to do human jobs. Robots help us to do things, for example to help us clean, mow and learn! Robots in factories make things, and in hospitals they help make us better.

Bee-bots

Bee-bots are small robots that we can use to learn all about programming! They have buttons on the top that each make the Bee-bot do something different (see picture). Each Bee-bot has a computer inside.



Algorithms and Instructions

- Algorithms are a precise set of instructions that a computer can turn into a code.

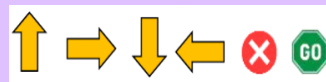


- When we press buttons on our Bee-bots, we are creating a program for it to follow. The program is how the algorithm is run as code on the robot.

- It is important that our instructions to the Bee-bots are clear. If our sequence of instructions is in the wrong order, has anything missing, or has anything additional, the Bee-bot will end up in the wrong place!

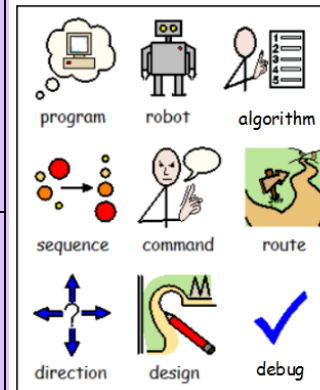
Designing Algorithms

We can create mats for our Bee-bots. We then need to design algorithms so that the Bee-bot follows the given route. We should carefully consider the start and end point, and use symbols to indicate the commands that will be inputted as a program.



If there is an error in our program, we need to debug it by finding and fixing the problem.

Key Vocabulary



program – how the algorithm is run as a code on a computer.

robot – machines that we can program to do human jobs.

algorithm – a precise set of instructions
sequence – the order in which instructions are given

command – a single, specific instruction
route – the path taken to get from a start to an end point.

direction – the position to which something is facing or moving

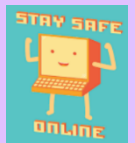
design – when we create an algorithm to follow a particular route

debug – finding and fixing errors in our algorithms and programs

Online Safety

Online Bullying

Bullying is repeated, negative behaviour that is intended to make others feel upset, uncomfortable or unsafe. Online bullying can take place on online games and messaging platforms (e.g. texts). It is important to be able to identify what type of situations are / are not bullying, and the range of emotions people involved might be feeling. If children are worried, they have a network of support around them at school, home and online. The 'Be Code' can help us too:



Be Brave - Stand up for yourself, you have the right to be safe.

Be Firm - Be strong and ask them politely to stop, remember your manners.

Be in control - Don't retaliate, walk away and tell an adult.

