



# COMPUTING: PROGRAMMING

## KNOWLEDGE ORGANISER

Y1



### Overview

#### Moving a Robot



- Programming is when we make a set of instructions for computers to follow.



- Robots are one type of machine that can follow programs. Floor robots include Bee-bots and Blue-bots.



- Floor robots have buttons which help us to direct them. We can use algorithms (a set of guidelines to perform a task) to program floor robots along routes.

### Buttons and Programs

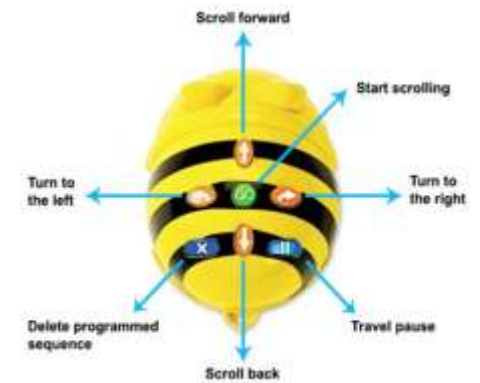
- **Buttons:** Bee-bots have buttons on the top. They each make the Beebot do something different (see picture).

- The arrows move the Bee-bot in different directions.

- The GO button makes the Bee-bot start its program. (on some models, it also pauses the Beebot in-program).

- **Programs:** A program is a series of instructions. We can program the Bee-bot by pressing the direction buttons (in order) that we want it to move in, followed by GO.

- The X button makes the Bee-bot delete the program and make a new program. Switching the Bee-bot off and on again also deletes the program.



### Robots and Floor Robots

- **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 a type of floor robot.



- We can programme Bee-bots to move around.

- **Turning on a Bee-bot:** Before we use a Beebot, we need to make sure it is charged.



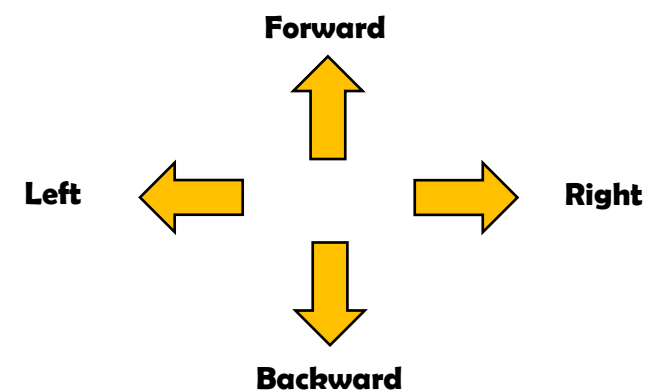
Bee-bots should only be used on the floor, and not tables etc. They can be damaged if they fall from high surfaces. (Other floor robots, e.g. Blue-bot, can also be used).

To turn it on, using the switch underneath. You can tell that the Bee-bot is on because its eyes light up. Switch it back off again after you have finished using it.



### Directions

- In order create clear routes for our Bee-bots, we need to be sure of our directions.



Make sure that you stand behind Bee-bot.

### Routes and Algorithms

- A route is the course that we travel to get somewhere. We use algorithms (a set of guidelines to complete a task) to program our floor robot to take a route to where we want it to go.



- We should think carefully about how to avoid obstacles. We should also consider how many times we need to press each button to travel the correct distance.

### Important Vocabulary

Programmed

Robot

Algorithm

Button

Direction

Forward

Backward

Left

Right

Route