



COMPUTING: PROGRAMMING- Moving a Robot

Y1

KNOWLEDGE ORGANISER



Overview

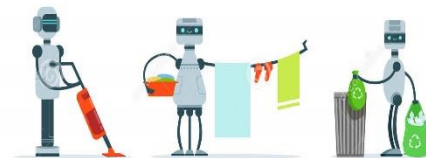
Moving a Robot



- **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 instructions to perform a task) to program floor robots along routes.

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.



Bee-bots should only be used on the floor, and not tables etc. They can be damaged if they fall from high surfaces.

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

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.



Buttons and Programs

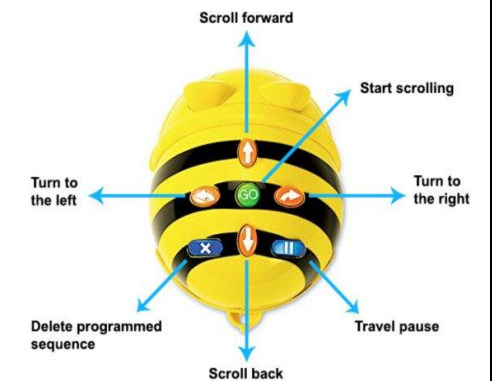
-**Buttons**: Bee-bots have buttons on the top. They each make the Beebot do something different (see picture).

-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).

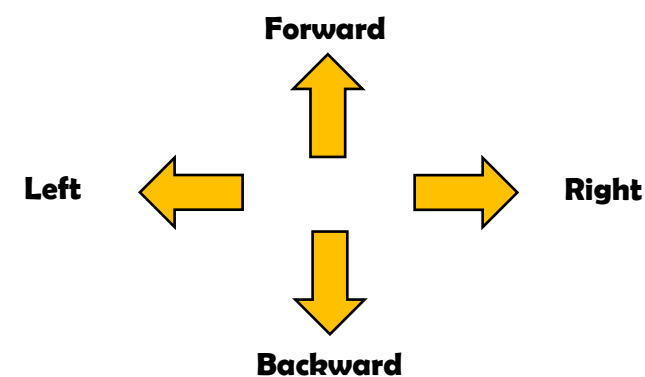
-**Programs**: A program is a series of instructions. We can program the Bee-bot by pressing the direction buttons (in order) that we want it to move in, followed by GO.

-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.



Directions

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

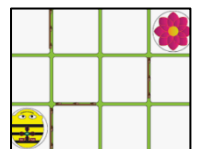


Make sure that you stand behind Bee-bot.

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

Bee-bot forwards backwards turn clear go commands instructions directions plan algorithm program route