

1.3 Programming A – Moving a robot– Knowledge Organiser

Year 7 Topic number Hyperlink to planning

Key prior learning is highlighted in green, but must be revisited and reinforced during this teaching sequence.

Overview

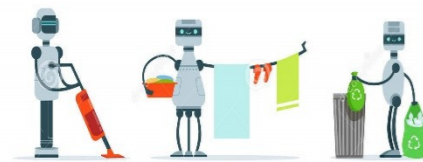
Moving a Robot



- **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.

Buttons and Programs

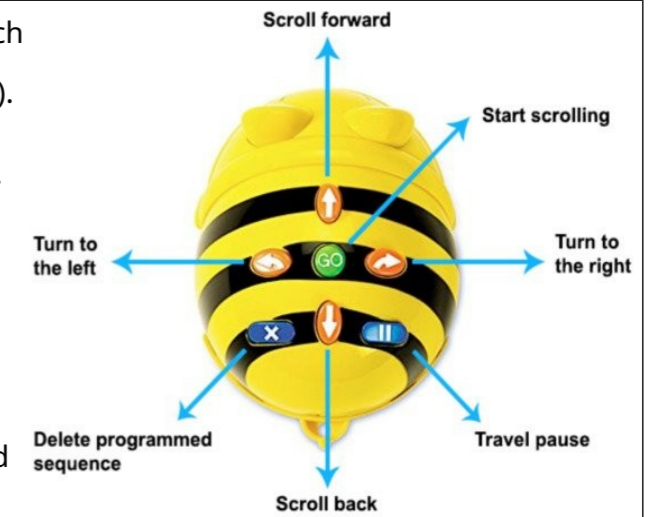
- **Buttons:** Bee-bots have buttons on the top. They each make the Beebot do something different (see picture).

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

- The **GO** button makes the Bee-bot start its program.

- **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 program Bee-bots to move around.

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



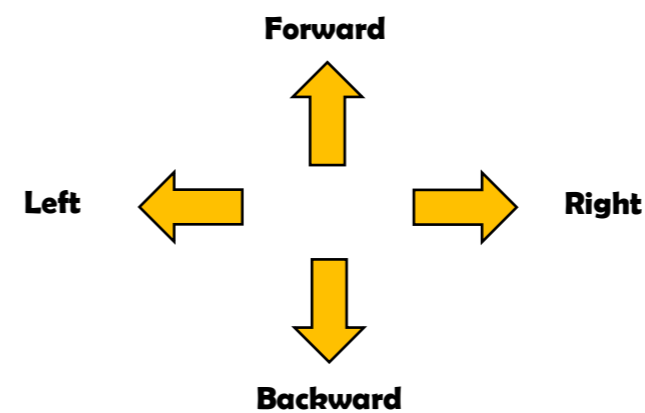
Bee-bots should only be used on the floor, and not tables etc. They can be damaged if they fall from high surfaces.

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

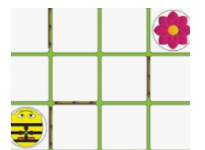
- In order create clear routes for our Bee-bots, we need to be sure of our directions.



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.

Bee-bot

forwards

backwards

turn

clear

go

commands

instructions

directions

plan

algorithm