

- 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

## Algorithm



'How will the Bee-Bot will get from the house on the floor mat to the park on the floor mat?'

'It will need to move forward 6 then turn and move forward 2.'

That is an algorithm. It is the **sequence or the actions needed to let you solve the problem.**

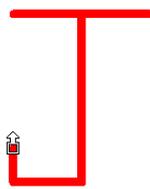
**AND** use 2Go  
(2Simple IVT or PurpleMash)

**OR** [www.j2e.com/j2code](http://www.j2e.com/j2code) JIT

**OR** Apps such as Kodable or Bee-bot



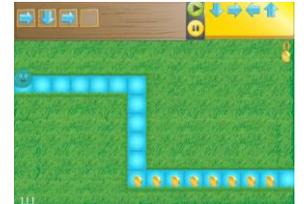
How will the ladybird move from the white flower to the purple flower?



How can I write my name?

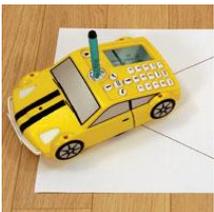


How will you park the car?



How will you pick up the coins in Kodable app?

## Execute programs



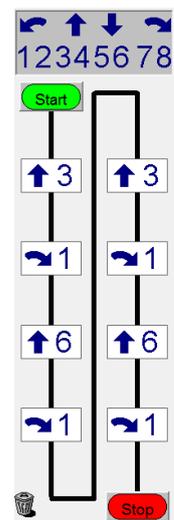
Press the buttons in a particular order on the Bee-Bot. Execute by pressing go.



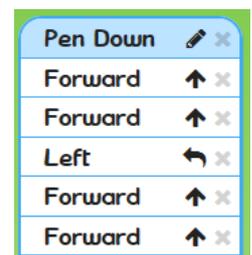
Program a sequence on a Probot or Roamer and press Go to execute.

Use 2Simple Infant Video Toolkit or JIT in [www.j2e.com/j2code](http://www.j2e.com/j2code) to program a sequence. Press start to execute the program.

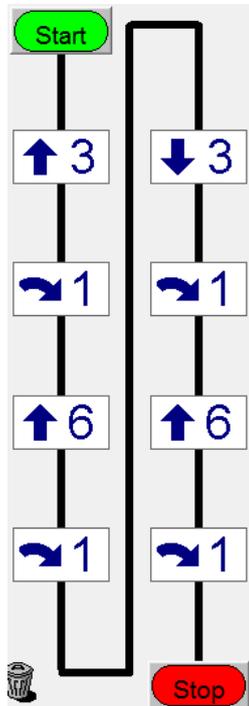
Press a sequence of icons on the Bee-Bot app and then Go to execute the program.



Create a program with Daisy the Dinosaur or Kodable apps. Press the play button to execute.



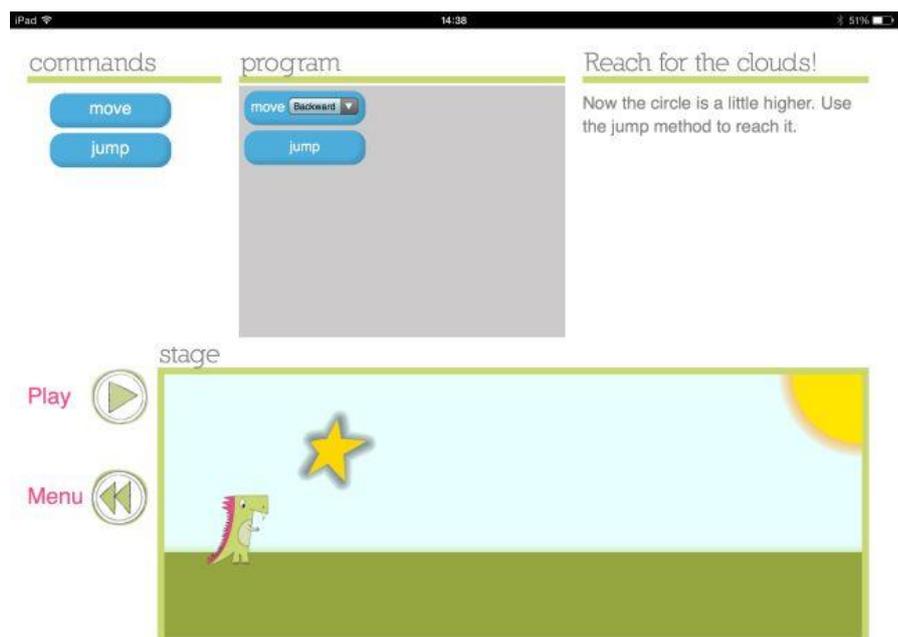
## Create and debug programs



Probot, 2Go, Daisy the Dinosaur and Kodable app let you create a program which can be viewed on a screen. This will allow the user to spot whether there may be any errors which mean the program isn't doing what you want it to do. The user can then debug the program to sort out the error.

2Go is great for watching to see what happens when you press start. Why won't this program draw an oblong? Where does it go wrong? What will need to be changed? In the same way JIT will let children watch what happens each time the program is executed.

A program can be 'written' for BeeBot using instruction cards. Once BeeBot has been programmed and the program has been executed, children can watch BeeBot follow the instructions and spot where any mistakes happen. The program can then be debugged by changing the cards and reprogramming BeeBot.



Use the challenges in Daisy the Dinosaur app. Create a program to solve the problem. Does the program work? Can you debug the program if there are errors?

Can you spot why Daisy won't reach the star? What will you need to do to debug the program?

## Logical reasoning

Can children describe what will happen when they look at a program in 2Go?

Can children predict what will happen when a BeeBot is programmed with a particular sequence of instruction cards?

Can children explain why something happens when particular buttons are pushed on devices or particular icons are selected in an app?

What is the result if I program Probot in a particular way?