

Computing

Coding

Year 2 – Important Information

An algorithm is a set of instructions. We use algorithms all the time: for example, when we follow a recipe or when we play a board game. We also use algorithms to program toys and computers.

It is really important that when we give instructions they are clear and precise. This means that we give the instructions:

- ✓ in order
- ✓ saying exactly what needs to happen

We are always looking for the algorithm with the least number of steps. We call this the most efficient. This is like in real life when we look for the shortest way to get somewhere or the quickest way to make a sandwich.

The Bee-Bot app lets you program an algorithm to make a virtual Bee-Bot reach an end square. It has the same commands as the Bee-Bot: forward, backward, turn left, turn right, pause and clear.

You can make the game easier by:

- doing your journey in stages
- having a Bee-Bot in front of you to help you work out which direction to go in
- using symbol cards to plan out your journey before you program it

You can make it more of a challenge by:

- planning your whole route before you begin (jot it down on a whiteboard) and programming it in one go
- making sure you find the most efficient route



Crucial knowledge

algorithm – set of instructions

code – algorithms (instructions) for a computer

sequence – set of instructions in order

precise - accurate efficient – the quickest or shortest way

app – a computer program designed to run on a tablet computer or a phone

virtual – looks like it's real but isn't

commands - instructions

script – the instructions that makes the object do things

repeat - do something again

grow—when something gets bigger

shrink— when something gets smaller

trigger – make something happen

motion – movement

Activities

You can use the Beebot, Beebot app and Scratch

Crazy Character Algorithms

<https://www.barefootcomputing.org/resources/crazy-character- algorithms>

Lego duck

<https://www.digitalschoolhouse.org.uk/system/files/cms/docs/CT%20Leg o%20Duck%20Teacher%20Guidance%20v2-2019.pdf>

Decomposition – unplugged

<https://www.barefootcomputing.org/resources/decomposition- unplugged-activity-ks1>

Scratch Junior Coding Cards

https://www.amazon.co.uk/gp/product/1593278993/ref=ox_sc_act_title_ 1?smid=AQPJIWMQBN5JN&psc=1

Official Scratch Junior Book

https://www.amazon.co.uk/gp/product/1593276710/ref=crt_ewc_img_d p_2?ie=UTF8&psc=1&smid=AHRB2OK2Q2YCL

outcome

Give and follow instructions accurately

Break down problems into smaller parts to solve them

Talk and plan with others

Use a simple program to create a story or animation

Select and change characters and backgrounds

Make characters move and speak

Come up with your own stories and animations using what you have learnt

Debug your program to fix errors