

Key Vocabulary

algorithm	An algorithm is a list of step-by-step instructions that a computer follows in order to get a task done.
bug	A mistake or error in a computer program.
code	A special digital language that helps information technology to run properly.
command	An instruction given to tell a computer what to do.
debug	To find, remove or correct errors in a computer program.
decomposition	To break things down into smaller parts.
loop	A set of repeated instructions.
predict	To guess what a possible outcome could be.
sequence	The order events must be performed in to complete a task.

Everyday Algorithms

Algorithms are all around us. Here are some **algorithms** you might follow at home or in school.

Following a recipe to bake a cake.



Making a new dance with your friends.

Cleaning your teeth before bed.



To write an **algorithm**, you need to break a task down into smaller steps. This is called **decomposition**. Here is an **algorithm** for making a pizza.

1. Roll the dough.
2. Spread on the tomato sauce.
3. Sprinkle on the cheese.
4. Add the toppings.
5. Cook in the oven.



What would happen if the steps were in the wrong **sequence**?

Computer Code

Computers use a special language. We call this language **code**. Writing in **code** lets you give **commands** to a computer.

There are lots of different ways to write **code**. The **commands** you write in computer **code** can link together to make an **algorithm**.

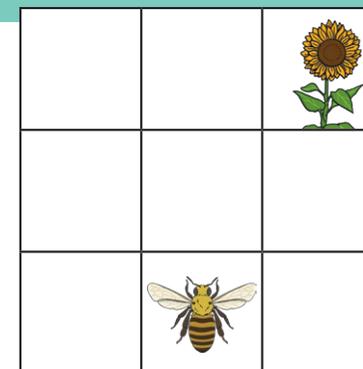
Loops

Sometimes actions happen more than once.

They repeat.

In an **algorithm**, a repeated set of actions is called a **loop**.

Can you see which **command** has been repeated in this **algorithm**?



Algorithms in Scratch

Scratch is an online program that lets you practise writing **code**. In Scratch, you can use blocks of **code** and join them together to create an **algorithm**.

Can you **predict** what this **algorithm** will make the monkey do?



Debugging

An error in computer **code** is known as a **bug**. If your **algorithm** doesn't work, you need to look at the **code** and find the error. This is called **debugging**.

There is a **bug** in this **algorithm**:

- Step 1: Put toothpaste on the toothbrush.
- Step 2: Use the toothbrush to brush your hair.
- Step 3: Spit the toothpaste out.
- Step 4: Clean the toothbrush.

How would you **debug** this **algorithm**?

