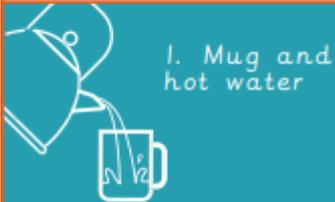## What do we explore in this unit?

We look at tinkering with software as we create a range of images. We begin to use nested loops in our programming to make increasingly sophisticated pieces.
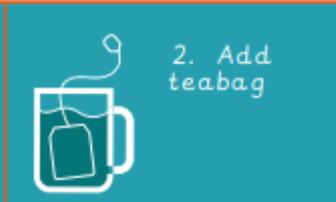
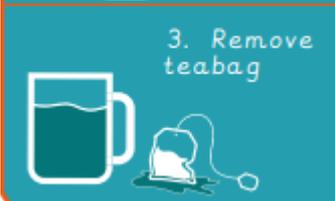What could we make an algorithm for?

Algorithm to make a cup of tea:

The steps in the algorithm must be followed, if we ignored step one, we would have no hot water!

1. Mug and hot water
2. Add teabag
3. Remove teabag
4. Dash of milk

What could Python be used for?

Python program to display times tables:

Try this Python code out yourself, and change the variable (input = 'x') to display a different times table chart.

```
# Times tables in Python
input = 10
# Iterate 10 times from i = 1 to 10
for i in range (1, 11) :
    print (input, 'x', i, '=', input *i)
```

Indentation
Variable
Loop

Key Vocabulary

Algorithm	A sequence of instructions which, when followed, solve a problem.
Code (computer)	A set of instructions written in programming language, to tell a computer what to do.
Computer command	To give an order or instruction to a computer, to complete a particular task.
Decompose	To break something down into smaller chunks.
Import (software)	To pull another file into software, to place, edit and manipulate.
Indentation (programming)	In programming (for example Python), indentation is used to define a block of code.
Loop	A repeated sequence of instructions.
Nested loop	A loop, within a loop.
Random numbers	An unpredictable sequence or reveal of numbers.
Remix	Something that has been reworked to produce a varying version of the original.
Script libraries	A series of pre-written, functional codes that can be accessed and imported into a program to save time.
Variable	This could be a number or text, that can change each time the program is run and often in combination with selection to change the end result of the program.