# PROGRAMMING 2 - SCRATCH

Variables are used to store **data** for use in a program. They can store lots of different types of data such as names and scores.

So set variable score to equal 0
If I score a goal then increase variable by 1
A variable can only hold 1 piece of data at a time.

Lists are used to store data for use in a program.

Lists can hold multiple items of data under one name. Just like a shopping list where you can keep adding items.
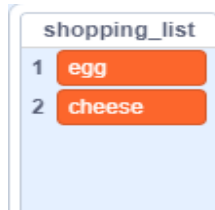
Sequence, **selection** and **iteration** are all processes.

These are three of the key concepts –the BIG 3
Sequence—the challenge of arranging precise instructions into the correct order
Selection—allowing a program to branch down a different route IF a condition is met
Iteration (repetition) - allowing a repetition of commands by looping back.

Iteration allows for the same code to be repeated.

Count controlled iteration will execute the commands a set number of times
Example**:** "perform 200 star jumps"

Condition-controlled iteration will execute the commands until the condition you set is no longer being met
Example: "perform star jumps until 3pm"

Key Words

Abstraction	Identify the important aspects to start with
Algorithm	Precise sequence of instructions
Debugging	Looking at where a program might have errors or can be improved
Decomposition	Breaking down a problem into smaller parts
Iteration	Doing the same thing more than once
Lists	Allows multiple items of data to be held
Selection	Making choices
Sequence	Running instructions in order
Subroutine	A group of instructions that can run when called
Variable	Data being stored by the computer.

This subroutine had been named 'jump'. The y axis has been changed by 50 (so jump up), wait 1 second then jump down (-50).
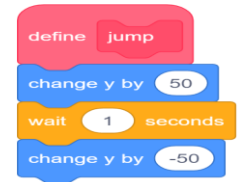
Then the jump subroutine can be called in the program.

Will loop the code forever   Will repeat a set number of times   Will repeat until a condition is met