

Algorithms

- An **algorithm** is a **sequence** of step-by-step **instructions** to solve a problem.
- Algorithms can be written in code, or be a **sequence** of **BLOCKS**.

A computer algorithm



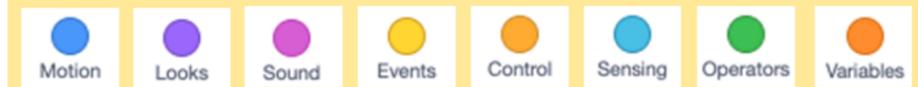
Scratch

Word	Definition	Image
Sprite	The name of a character in Scratch.	
Scratch	The name of the programming language we are learning.	
Turn # degrees	How far to the left or right you want to move your sprite. # is replaced with the number.	
Block	A single instruction in our algorithm.	

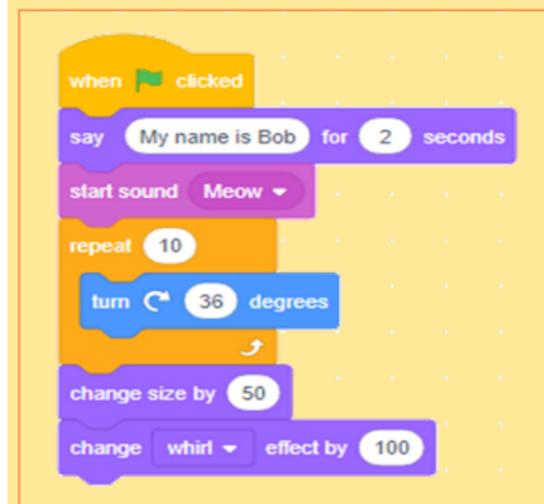
Key Terms

Instructions	Detailed information about how something should be done or operated.
Execute	When you create a program for a computer, you give it a set of commands to execute.
Sequence	The order the instructions need to be in.
Selection	Making choices.
Iteration	Doing the same thing more than once Iteration in computing is the process of repeatedly executing instructions.
Repeat	The block that makes an instruction happen more than once.
Variables	A variable is a name that refers to data being stored by the computer.
Subroutines	In computer programming, a subroutine is a sequence of program instructions that performs a specific task.
If block	Allows us to check a condition and perform an operation if the condition evaluates to 'true'.
Debugging	Finding errors in our code.
Abstraction	Taking away all the information that isn't needed.
Decomposition	Breaking down a problem.
Count-controlled	Count-controlled iteration will execute the commands a set number of times.
Condition-controlled	Condition-controlled will execute the commands until the condition you set is no longer being met.

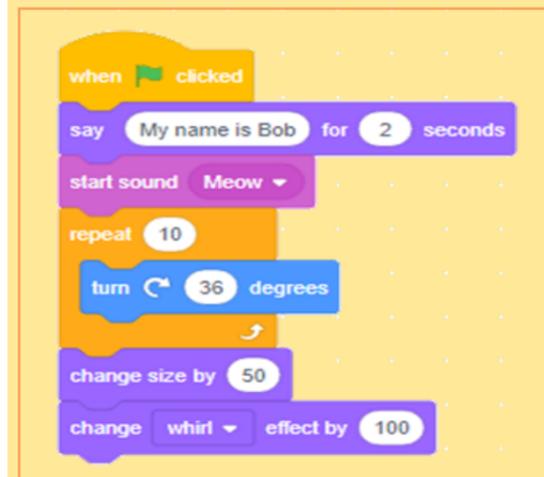
Scratch blocks and programme examples



We can use **algorithmic prediction** to guess what will happen. My **Sprite** is going to get bigger!



The **repeat loop** in this example, will move ten times. This is **more efficient** than writing out ten **commands**.



The **turn # degrees block** will turn my sprite. This **algorithm** will turn my **sprite** in a circle.