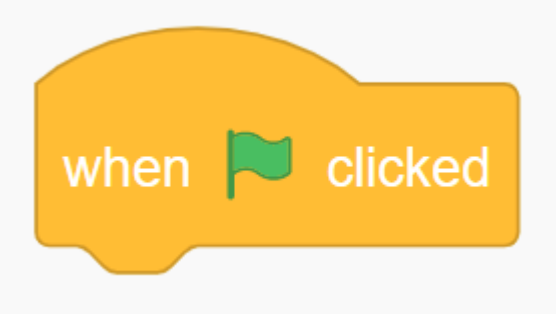
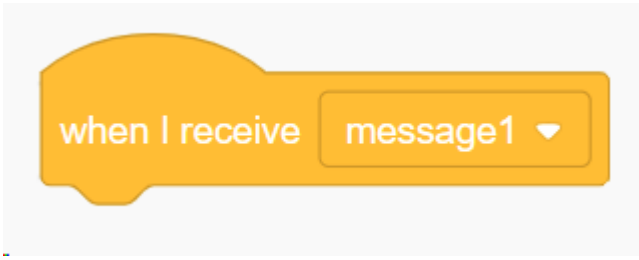
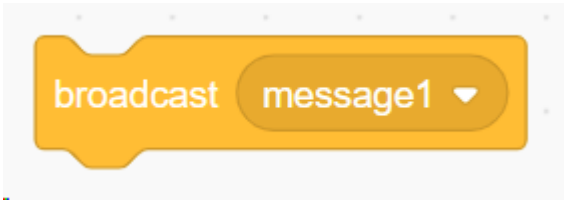
Knowledge Organiser - Scratch Programming

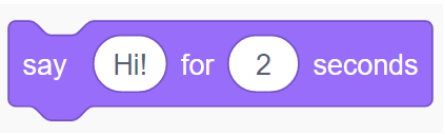
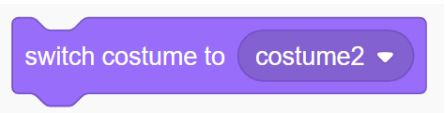
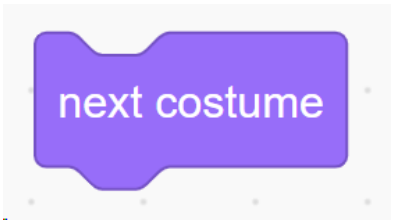
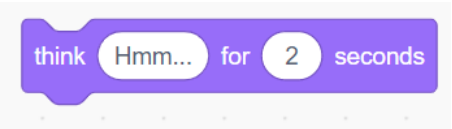
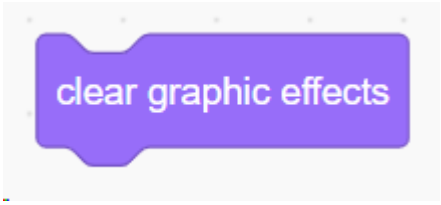
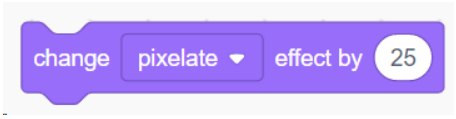
Key Terms & Definitions

1	Sequence	One of the three basic programming constructs. Instructions that are carried one after the other in order.
2	Selection	One of the three basic programming constructs. Instructions that can evaluate a Boolean expression and branch off to one or more alternative paths.
3	Iteration	One of the three basic programming constructs. A selection of code that can be repeated either a set number of times (count-controlled) or a variable number of times based on the evaluation of a Boolean expression (condition-controlled).
4	Variable	A value that can change depending on conditions or information passed to the program.
5	Boolean expression	An algebraic expression which has a Boolean value
6	Comparison operator	Used to compare two expressions
7	Computer bug	Code that causes your computer to behave in an unexpected way
8	Resilience	The capacity to recover quickly from difficulties
9	Subroutine	A block of code within a program that is given a unique, identifiable name. Supports code reuse and good programming technique.
10	Decomposition	Breaking down a problem into smaller, more manageable parts in order to make the problem easier to solve
11	List	A data structure that allows multiple pieces of data under a single name
12	Data structure	A way or organising and managing data in a programming language that ideally enables efficient access and modification of the data

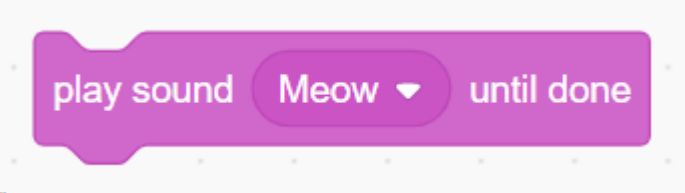
Control/Event Blocks

	
Used to identify the starting point of the program. When you click the green flag, the program will start by running the block after this one	Forces the program to wait a certain amount of time before moving onto the next instruction
	
Used to run sprite code when a certain message is received from another sprite	Used to send a message to other sprites

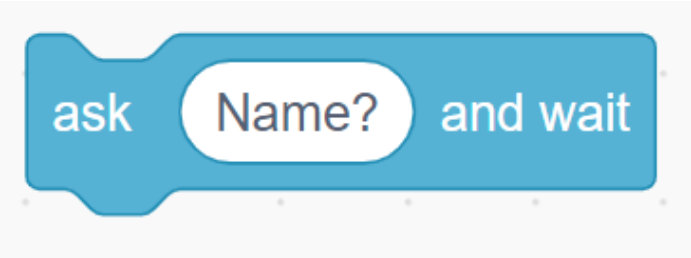
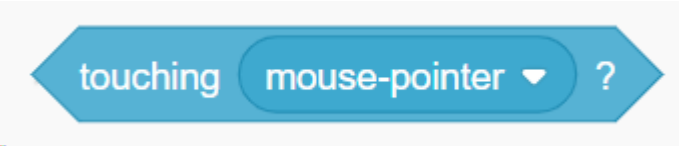
Looks Blocks

		
Causes the sprite to say a message for a certain amount of time	Used to change the appearance of a sprite	Changes the costume (appearance) of the sprite to the costume after the current costume
		
Another way to output to the screen. Causes the message to appear in a ‘thought bubble’ next to the sprite	Removes any graphical effects that have been applied to the sprite	Used to apply a graphical effect to a sprite

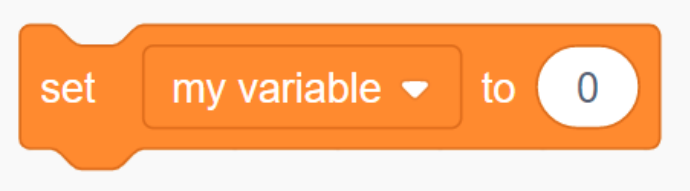
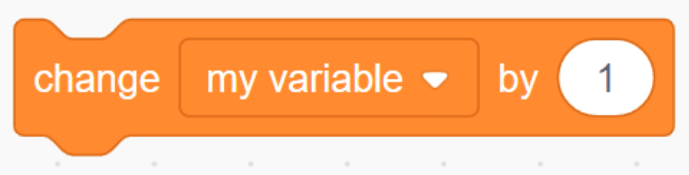
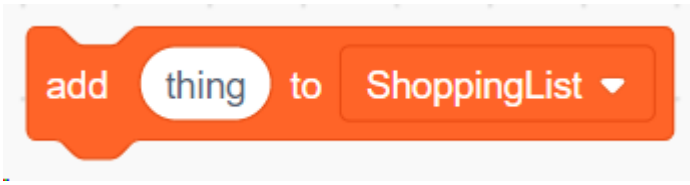
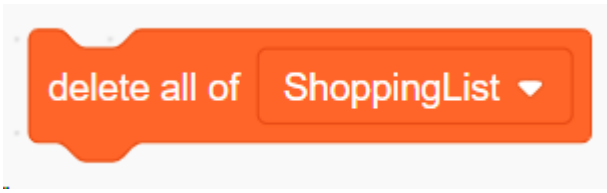
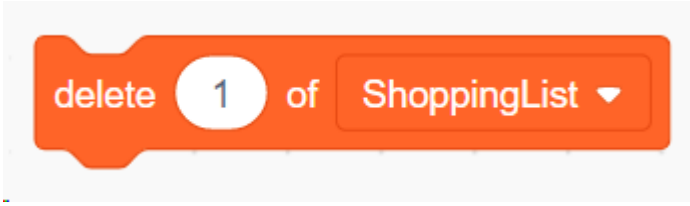
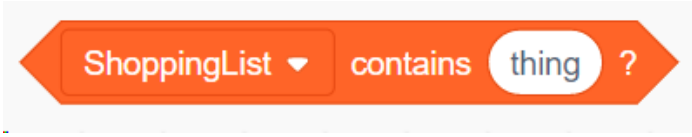
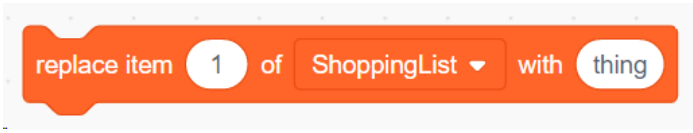
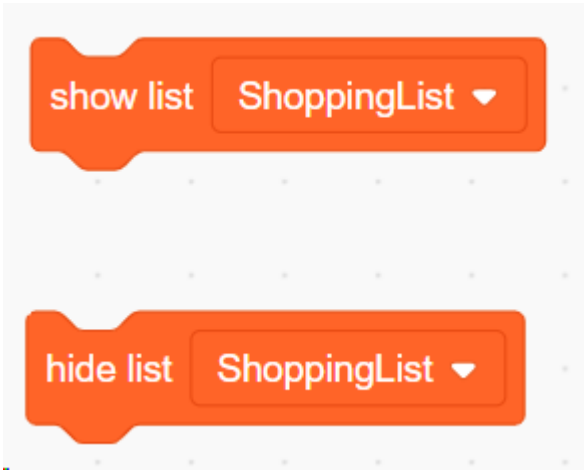
Sound Blocks


Plays a sound until the sound is finished

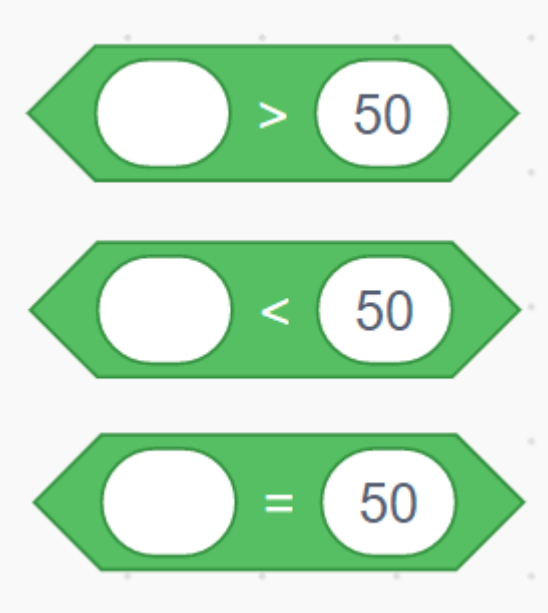
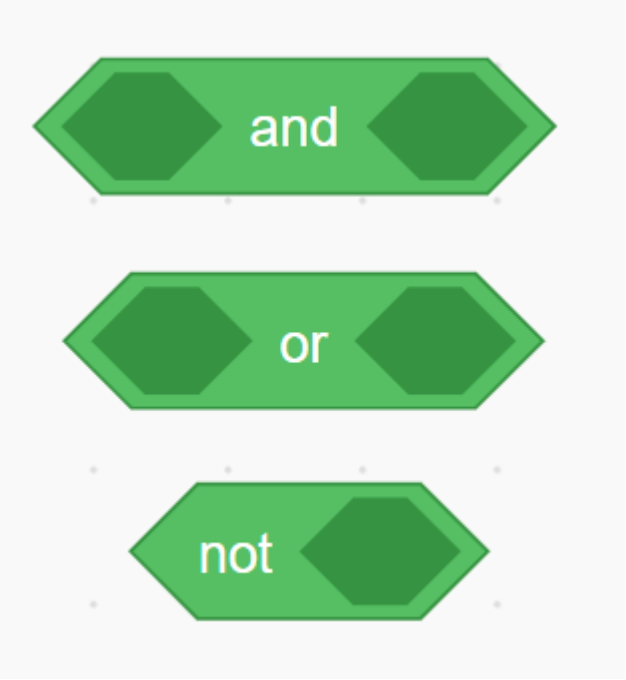
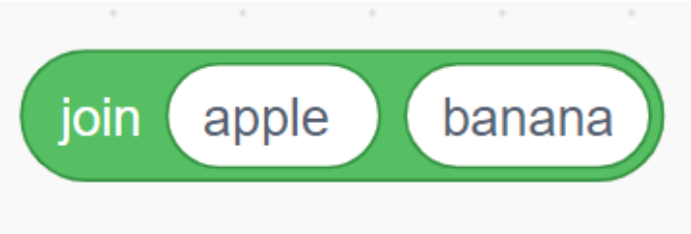
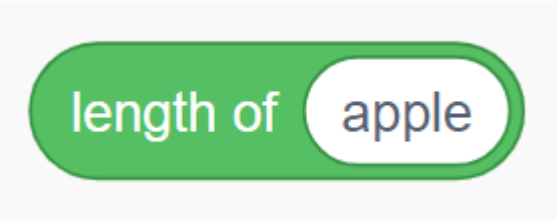
Sensing Blocks

	
Used when you want the user to enter some information.	Checks if the sprite is touching an object

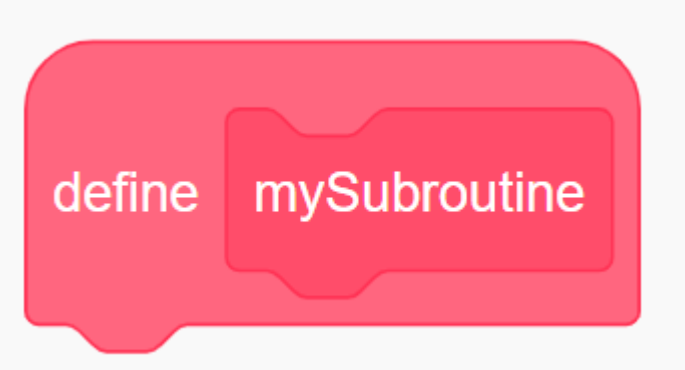
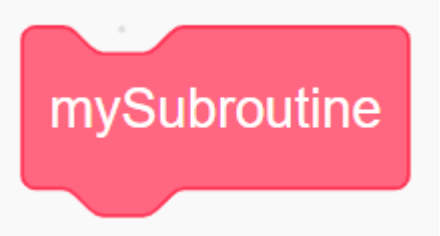
Variables Blocks

	
Used to set the value of a variable.	Used to change the value of a variable.
	
Adds an item to a list variable	Deletes all the items in a list variable
	
Deletes a certain item in a list variable	Checks if an item is in a list variable
	
Swaps an item in the list out with another item	Used to display or hide a list on the screen

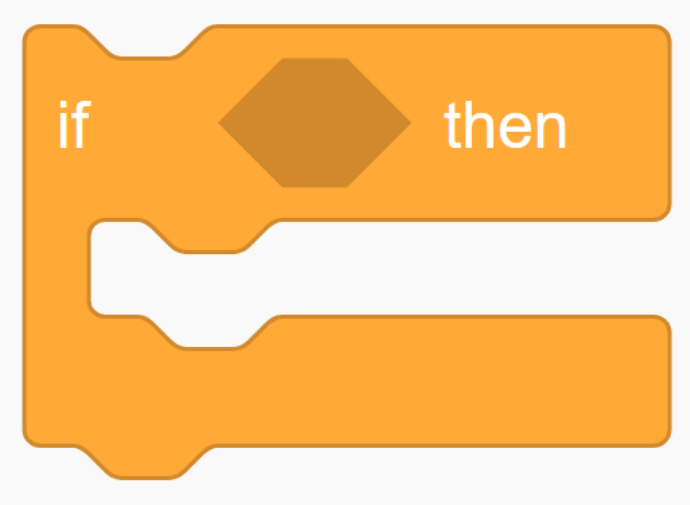
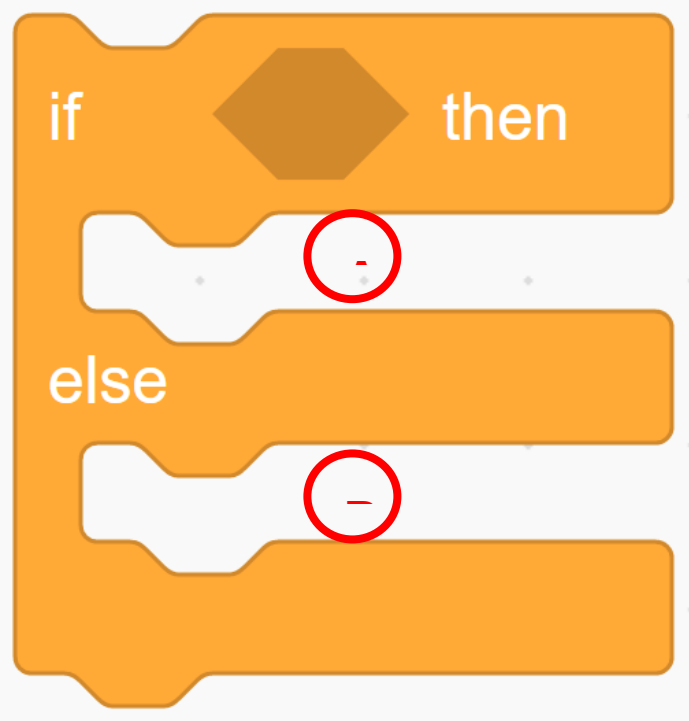
Operator Blocks

	
Comparison operators. Used to make a comparison between two values or variables.	Logical operators. Used to create boolean expressions.
	
Joins together (concatenates) two strings into a single string.	Finds the length of a string.

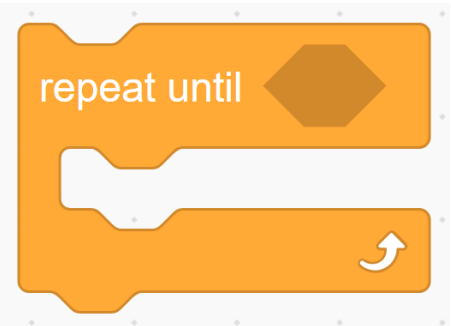
Subroutine Blocks

	
Used at the start of a subroutine to identify where the subroutine begins.	Used to tell Scratch to run code in a subroutine.

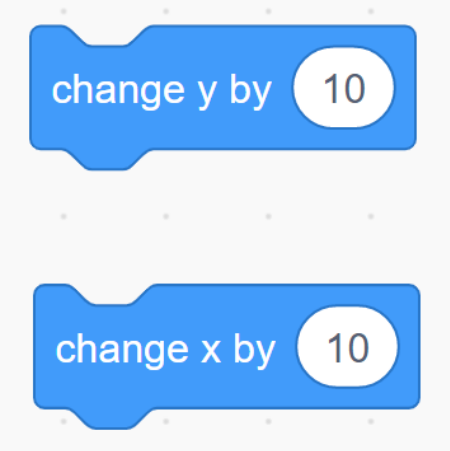
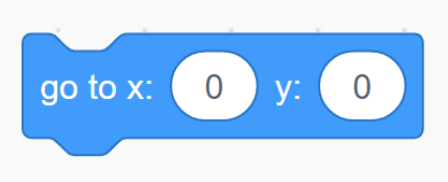
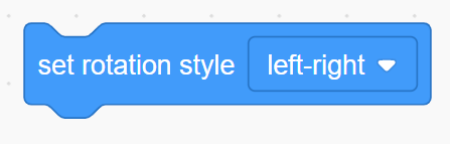
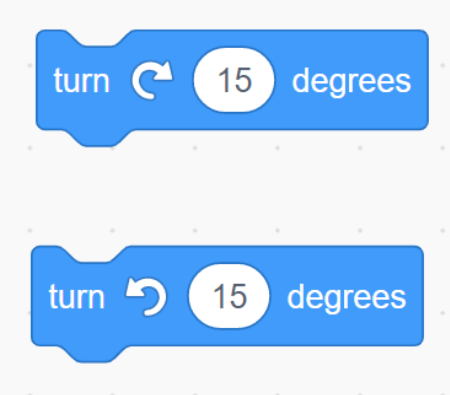
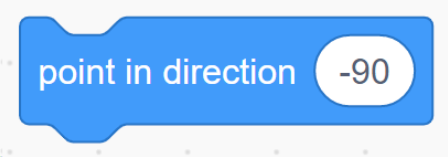
Selection Blocks

	
Runs the code in the block if the condition is true	Runs the code in gap A if the condition is true. Runs the code in gap B if the condition is not true (false)

Iteration Blocks

		
Count-controlled iteration - code inside the block repeats a set number of times	Condition-controlled iteration - code inside the block repeats until the condition is met (true)	Infinite iteration - repeats the code inside the block until the program is stopped by the user

Motion Blocks

		
Used to move the sprite by a certain distance along the x or y axis	Moves the sprite to a particular position on the screen	Determines the direction in which the sprite can rotate
		
Rotates the sprite clockwise or anti-clockwise by a certain distance	Changes the direction in which the sprite is pointing	

Scratch Interface