

Coding



What Is Scratch?

Scratch is a **block-based** coding language that allows users to create animations, games and programs. Scratch uses puzzle-shaped **blocks** of code that can be dragged into a code area and connected to create algorithms. Scratch refers to these as **scripts**. The **scripts** define the behaviour of characters. In Scratch, these characters are called **sprites**.

The Basics



Click here to select a **backdrop**.



Click here to select a **sprite**.



Click on the bin to delete a **sprite** from the **Stage**.



Click here to start and stop a **script** if using the **green flag block**.



Click on the **Add Extension** icon to add the **Pen Extension** to draw on the **Stage**.

Loops

A loop is a tool to repeat an action. There are three types of loops in Scratch, these include:

- count-controlled **repeat** loop;
- repeat until** loop
- forever** loop

They are found in the **Control** category.



Scratch Blocks

There are nine categories of blocks in Scratch. Blocks are shaped like puzzle pieces as they fit and connect together vertically to create an **algorithm**.

Block Categories

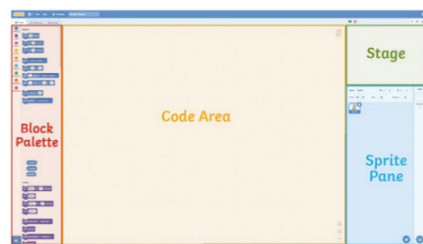
Each block category has its own set of coloured blocks, which each have their own function.

- Motion
- Looks
- Sound
- Events
- Control
- Sensing
- Operators
- Variables
- My Blocks

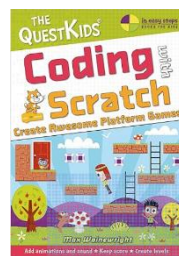
Key Blocks

- when green flag is clicked**: This block starts an **algorithm** when the green flag is clicked.
- when key pressed**: This block uses the input of a specified key to begin an **algorithm**.
- forever**: This block makes the code inside the loop repeat continuously.
- if/then**: This block determines the outcome of a condition.
- touching color**: This block detects if a sprite is touching a specific colour.
- switch backdrop to**: This block changes the **backdrop** to one from the drop-down menu.

The Scratch Interface



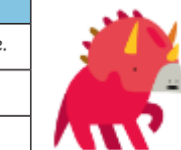
Read more:



Research more:

<https://scratch.mit.edu/>

<https://projects.raspberrypi.org/en/projects/getting-started-scratch/0>



What Is an Algorithm?

Algorithms on a computer are exactly the same as everyday **algorithms**. They are a set of **sequenced** instructions or rules for solving a problem or completing a task in a logical order.

Adding Effects to Sprites and Backdrops

switch costume to costume2

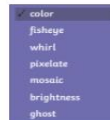
Use this **block** to switch a sprite's costumes.

switch backdrop to backdrop1

Use this **block** to switch between different backdrops.

change color effect by 25

change color effect to 0



Use these **blocks** to alter the size, colour or other effects of a sprite. These types of effects could be used when a sprite successfully answers a question or when they win in the quiz.

change size by 10

set size to 100%

Use these **blocks** to increase and decrease the size of a sprite.

clear graphic effects

Use this **block** to clear any changes made to the sprite or backdrop.

Key Vocabulary

Program	
Sprite	
Blocks	
Count-controlled loops	
Infinite loops	
Costume	
Repeat	
Value	
Animate	
Design	
Debug	