

COMPUTING · Y3-Y6

Programming with Scratch

Knowledge Organiser — KS2 Computing

Key vocabulary

1

Scratch

Free block-based programming language created by MIT for children. Used in most UK primary schools.

2

Block

A coloured piece of code in Scratch that does one specific thing. Blocks snap together like Lego.

3

Sprite

A character or object on the screen that you can program.

4

Stage

The big white area where your sprites move. Like the 'screen' of your project.

5

Event

A trigger that starts something happening — like clicking the green flag, pressing a key, or clicking a sprite.

6

Loop

A block that repeats other blocks. 'Repeat 10 times' or 'Forever' are loops.

7

Variable

A box that stores information you can change — like a score in a game.



8

Conditional

A 'IF... THEN' block that only runs when something is true.

9

Broadcast

A message a sprite can send to other sprites to make them do something.

Categories in Scratch

What each colour means

- ■ EVENTS (yellow) — when the green flag is clicked, when a key is pressed
- ■ MOTION (blue) — move, turn, go to position
- ■ LOOKS (purple) — say, change costume, hide/show
- ■ SOUND (pink) — play sound, change volume
- ■ CONTROL (orange) — repeat, forever, if/then, wait
- ■ SENSING (light blue) — touching, ask, mouse position
- ■ OPERATORS (green) — maths, joining text, random numbers
- ■ VARIABLES (orange) — set, change, show your variables

Common patterns

Snippets you'll use a lot

- MAKE A SPRITE MOVE WITH ARROW KEYS: when [right arrow] key pressed → change x by 10
- MAKE A SPRITE FOLLOW THE MOUSE: forever → point towards mouse pointer → move 5 steps
- GAME LOOP: when flag clicked → forever → if touching [enemy] → game over
- SCORE COUNTER: variable 'score' → when sprite touches coin → change score by 1
- TIMER: variable 'time' → when flag clicked → forever → wait 1 sec → change time by 1
- JUMP TO RANDOM POSITION: go to x: pick random -240 to 240 y: pick random -180 to 180



mistakes (and fixes)

Why programs don't work

- Sprite doesn't move → Did you start with 'when flag clicked'? Did you put the move block **INSIDE** a forever loop?
- Sprite goes off the screen → Add 'if on edge, bounce' or check x and y limits
- Costume doesn't change → Use 'next costume' or 'switch costume to' — not just one block
- Score keeps resetting → Make sure 'set score to 0' is only at the **START**, not in the loop
- Sprites won't talk to each other → Use **BROADCAST** messages
- Loop runs too fast → Add 'wait 0.5 seconds' inside the loop

