Events and actions in programs

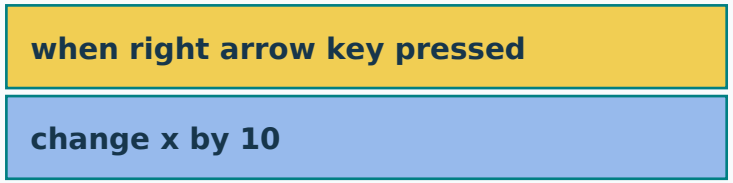
Year 3 Computing | Knowledge organiser

Use events to control a sprite in Scratch and draw a trail through a maze.

Words to know

Event: something that starts code running.
Action: what the code makes a sprite do.
Sprite: an object or character we can program.
Sequence: commands in a particular order.
Extension: extra blocks added to Scratch.
Bug: a mistake in a program.
Debug: find and fix mistakes in a program.

An event causes an action



Pressing the right arrow is the event.
Moving the sprite right is the action.
Each sprite follows its own code.

Move in four directions

Right →
change x by 10

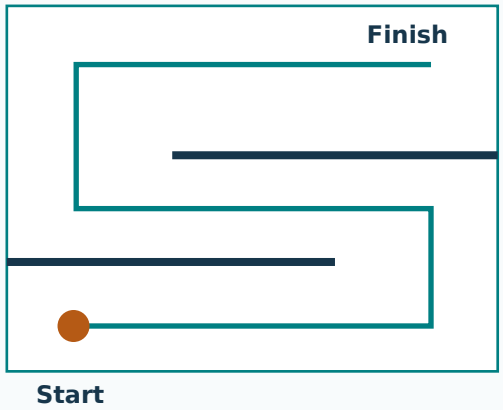
Left ←
change x by −10

Up ↑
change y by 10

Down ↓
change y by −10

x controls left/right. y controls up/down.

Design a maze challenge



Choose a backdrop.
Size the sprite to fit between the walls.

Choose movement keys.
A pen trail can show the route travelled.

Draw with the Pen extension

Pen down: draw as the sprite moves.
Pen up: move without drawing a line.
Erase all: remove the lines already drawn.
Change pen colour and size to add features.

Set up in order: pen up → go to the start → erase all → pen down. This avoids drawing an unwanted line while returning to the start.

Predict, test and debug

Predict what each sequence will do. Run it.
Test every key against your design.
If a direction is wrong, check x/y and +/− values.
Fix the code, test again and save your project.
Keep personal details private and be kind online.

Adapted from Raspberry Pi Foundation and STEM Learning for NCCE | Open Government Licence v3