

Scratch Programming Curriculum: Level 1 (45 Sessions)

This curriculum is designed to introduce students to the fundamentals of computer programming using Scratch. It is structured into multiple modules, each focusing on key concepts and building upon previously learned skills.

Getting Started with Scratch

Session	Topic	Description
1	Exploring Scratch Basics	Introduction to the Scratch interface, sprites, and stage.
2	Motion Blocks: An Introduction	Understanding basic movement commands like <code>move</code> and <code>turn</code> .
3	Step-by-Step Coding with Motion	Creating simple scripts to control sprite movement.
4	Random Motion Made Simple	Implementing random movement using <code>go to random position</code> .
5	Understanding the Scratch Coordinate Grid	Introduction to X and Y coordinates on the stage.
6	Working with Directions & Angles	Using <code>point in direction</code> and <code>turn</code> blocks effectively.
7	Mini Project 1	A short project to apply learned motion concepts.

Programming with Sounds & Visuals

Session	Topic	Description
8	Running Programs in Parallel + Sound Block	Understanding how multiple scripts can run simultaneously and using sound blocks.

Session	Topic	Description
9	First Look at Looks Blocks	Exploring <code>say</code> , <code>think</code> , and <code>switch costume</code> blocks.
10	Visual Effects using Looks	Applying graphic effects like <code>color</code> and <code>ghost</code> .
11	Expanding with More Looks Options	Advanced uses of looks blocks and sprite properties.
12	Playing with Backgrounds	Changing and manipulating backdrops.
13	Advanced Sound Features	Recording sounds and using sound effects.

Events and Interactions

Session	Topic	Description
14	Event-Driven Programming in Scratch	Understanding <code>when green flag clicked</code> , <code>when space key pressed</code> , etc.
15	Keyboard-Based Interactions	Creating programs that respond to keyboard input.
16	Recap of Key Concepts Learned	Review of motion, looks, sound, and event blocks.
17	Mini Project 2	A project incorporating event-driven programming.

Loops & Control Structures

Session	Topic	Description
18	Repeat Loops Explained	Understanding the <code>repeat</code> block for repetitive actions.
19	Using Loops Inside Loops	Creating nested loops for complex patterns.

Session	Topic	Description
20	Communicating Between Scripts	Introduction to broadcast and when I receive .
21	Introduction to Cloning	Creating copies of sprites using the create clone block.
22	Making Clones Do More (Scripting Clones)	Controlling the behavior of clones using when I start as a clone .
23	Conditional Logic in Scratch	Introduction to if then and if then else blocks.

Control, Sensing & Operators

Session	Topic	Description
24	Deeper Dive into Control Blocks	Further exploration of wait , stop all , and forever .
25	Becoming Fluent with Control	Practical applications of control blocks in various scenarios.
26	Ask & Answer Interactions	Using the ask and answer blocks for user input.
27	Detecting Key Presses	Using key pressed? for more precise keyboard detection.
28	Detecting Mouse Clicks	Using mouse down? and mouse x, mouse y .
29	Mini Project 3	A project combining control, sensing, and user interaction.
30	Drag-and-Drop Mode	Exploring the functionality and benefits of drag-and-drop.

Operators & Variables

Session	Topic	Description
31	Getting Started with Operators	Introduction to arithmetic operators (+, -, *, /).
32	Comparison Operators in Action	Using >, <, = for conditional statements.
33	Measuring Distance to Mouse Pointer	Applying distance calculations in projects.
34	Working with Multiple Variables	Creating and using multiple variables for game states and scores.

Game Development Essentials

Session	Topic	Description
35	Adding Lives to Characters	Implementing a life system in games.
36	Adding a Timer to Games	Creating countdown and count-up timers.
37	Game Build 1: Applying Concepts	Building a basic game incorporating previously learned concepts.
38	Game Build 2: Extending Features	Enhancing the game with additional functionalities.
39	Mini Project 4	A game project focusing on advanced features.

Capstone Projects

Session	Topic	Description
40	Assessment	

41	Final Project (Main Build)	Students work on their main project, integrating all learned concepts.
42	Expanding on the Final Project	Students refine and add more features to their final project.
43	Final Project-2	Students work on their second main project
44	Final Project Extension	They refine second major project
45	Final Evaluation	Evaluating students.
<hr/>		
End Of Level 1		
<hr/>		