

Game Development with Scratch: Level II Suitable for: G4 - G7

Prerequisite: Basics of Scratch: Level I

Duration: 20 Weeks

Classes per Week: 1 class (45 minutes each)

Course Overview:

Deepen understanding of programming concepts using Scratch with a focus on advanced game mechanics, conditionals, cloning, variables, and operators to create more complex and interactive games.

Covered Topics

Unit 1: Advanced Programming Concepts

- Overview of Conditional Statements
- Review conditionals from Level I
- Using conditionals to control game flow
- Combining Loops and Conditionals
- Creating complex actions in response to in-game events

Game Development Basics: Scratch Junior Level II Suitable for: G1 - G3

Unit 2: Cloning and Sprite Management

- Introduction to Cloning
- Duplicating sprites with clones for dynamic game elements
- Managing multiple sprites with clones
- Advanced Sprite Interactions
- Using clones for multi-sprite interactions and challenges

Unit 3: Precision Movement and Controls

- Gliding Blocks and Coordinates
- Mastering the use of the gliding block for smooth movements
- Understanding and using the coordinate system for precise control
- Advanced Movement Techniques
- Combining movement with timing for smooth gameplay

Game Development Basics:

Scratch Junior Level II

Suitable for: G1 - G3

Unit 4: Visual and Interactive Effects

- Using Graphic Effects
- Applying effects like color changes, fisheye, and pixelation
- Enhancing visual elements of games
- Broadcast Messaging
- Using broadcast messages to trigger actions and sprite interactions
- Coordinating game events across multiple sprites

Unit 5: Variables and Operators

- Introduction to Variables
- Using variables to track game scores, health, and other elements
- Managing multiple variables in complex games
- Operators and Logic
- Applying operators (greater than, less than, AND, OR)
- Using logic for more dynamic and engaging gameplay

Materials Needed:

- Access to a computer or tablet
- Internet connection
- Chrome browser

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Assessment

At the end of each lesson, learners will be assessed on their ability to apply concepts such as conditionals, cloning, sprite interactions, variables, and messaging within their game projects. Each assessment will focus on how effectively they integrate these advanced programming elements to create dynamic, functional, and engaging games using Scratch.

Certification

A certificate of completion will be awarded upon the successful completion of the course.