



Scratch Block Coding Syllabus

Course Overview

This course introduces students to Scratch, a beginner-friendly (Ages 8+) programming platform that uses block-based coding to develop interactive projects like animations, games, and simulations. It focuses on fostering creativity, logical thinking, and problem-solving skills.

This course consists of 12 lessons with 20+ hours of content. Each lesson includes a project that the students will create throughout each lesson, allowing them to have a goal each lesson provides.

Course Objectives

By the end of this course, students will:

- Understand the fundamentals of block coding using Scratch.
- Develop interactive games, animations, and creative projects.
- Explore concepts such as variables, loops, conditionals, and broadcasting.
- Enhance projects using sounds, music, and visual elements.
- Apply problem-solving strategies to debug and improve their projects.

Course Outline

Lesson 1: Introduction to Scratch

- 1.1: Intro to Scratch Part 1
- 1.2: Intro to Scratch Part 2
- 1.3: Vector v.s. Bitmap
- 1.4: Sharing Your Project
- Quiz

Lesson 2: Introduction to Scripts

- 2.1: Scripts Part 1

- 2.2: Scripts Part 2
- 2.3: Scripts Part 3
- 2.4: Scripts Part 4
- Quiz

Lesson 3: Costumes and Sounds

- 3.1: Costumes Part 1
- 3.2: Costumes Part 2
- 3.3: Sounds Part 1
- 3.4: Sounds Part 2
- Quiz

Lesson 4: Game Mechanics

- 4.1: Game Play Area
- 4.2: Game Enemies
- 4.3: Game Score
- Quiz

Lesson 5: Shapes and Messages

- 5.1: Shapes Part 1
- 5.2: Shapes Part 2
- 5.3: Broadcasting Part 1
- 5.4: Broadcasting Part 2
- Quiz

Lesson 6: Custom Blocks

- 6.1: Custom Blocks Part 1
- 6.2: Custom Blocks Part 2
- 6.3: Custom Blocks Part 3
- 6.4: Custom Blocks Part 4
- Quiz

Lesson 7: Project Upgrades

- 7.1: Modify Existing Projects
- 7.2: Limiting Attempts
- 7.3: Creating Instructions
- 7.4: Game Scoring Project
- Quiz

Lesson 8: Music and Sounds

- 8.1: Music Maker
- 8.2: Song
- 8.3: Surprise Ending
- 8.4: Music Maker Project
- Quiz

Lesson 9: Custom Maze

- 9.1: Maze Creation
- 9.2: Collision Detection
- 9.3: Jump Scare
- 9.4: Maze Project
- Quiz

Lesson 10: Guessing Numbers

- 10.1: Guess My Number
- 10.2: Logging
- 10.3: Win and Lose
- 10.4: Guess My Number Project
- Quiz

Lesson 11: Frogger

- 11.1: Frogger
- 11.2: Obstacles
- 11.3: Finishing
- 11.4: Obstacles Project
- Quiz

Lesson 12: Dance Party

- 12.1: Dance Party
- 12.2: Dancing Sprites
- 12.3: Completion
- 12.4: Dance Party Project
- Quiz

Resources

Required:

Hardware: A computer or tablet with internet access.

Software: Access to Scratch (online or offline editor).

Additional Tools: Headphones for sound-related activities (optional)