Power Up: Designing Games with Scratch

Designed for learners in Grades 3-5

NextWaveSTEM

PLAY

Course Description:

In this course, students will learn the basics of block coding using Scratch as they modify and customize a variety of video games. Through 15 engaging lessons, students will design custom levels, characters, rules, and controls, bringing their game ideas to life. The course emphasizes creativity and problem-solving, providing students with the skills to create the game of their dreams.

Equipment, Curriculum, and Training Available:

- No equipment required
- 15 Lesson Hours Curriculum and supporting materials
- Ongoing product and curriculum support
- Professional development Facilitation by a trained STEM instructor (optional)

Lesson	Learning Target Examples
Introduction to Scratch	Familiarize with the Scratch interface and community.
Basics of Block Coding	Learn about different categories of blocks in Scratch (e.g., Motion, Looks, Sound).
Creating Simple Animations	Understand how to create basic animations using loops and timing events.
Interactive Sprites	Learn how to make sprites respond to user inputs.
Basics of Game Design	Introduce elements of game design: objectives, rules, and play mechanics.
Storyboarding	Create a simple storyboard for a game with basic objectives and rules.
Building a Simple Game	Start coding a simple game based on the storyboard.
Adding Challenges and Levels	Learn to add challenges and multiple levels.
Debugging and Testing	Understand the basics of debugging and the importance of testing.
Sound and Effects	Enhance games with sound effects and visual effects.
Advanced Animation Techniques	Learn advanced animation techniques using costumes and loops.
Game Optimization	Learn how to optimize gameplay experience.
Peer Review	Learn to receive and give feedback.
Iteration and Improvement	Use feedback to improve game design.
Showcase and Reflection	Display and discuss individual and group projects.