



# Game Development Foundations

This web-based course leverages the excitement of creating games to teach computer science, mathematics, and problem solving. Upon completion of this course, students will be proficient in JavaScript, computational thinking, 2D and 3D graphics, animations, and game development principles. Students will work through four units to complete code projects with visual elements and access their projects on the web from any browser.

## At a Glance

Capstone Project	Builds Portfolio	Grade Band	Prerequisites
YES	YES	6-12	None

## Who is this for?

This course is recommended for grades 6-12. It assumes familiarity with some mathematics concepts and is best suited for students who:

- Have previous exposure to using computer programs
- Are taking pre-algebra or higher alongside this course
- Haven't coded before, but are interested in learning to write programs
- Have taken the Mastery Coding™ Web Development course
- Want to have an edge or warm-up before taking the Game and App Development I and II course line

## Overview

In this course, students will:

- Write code that translates directly to drawing shapes and animation on the screen using JavaScript and P5.js.
- Use ELA and creative writing skills to code a choose-your-own adventure game with their own narrative.
- Apply computer science concepts such as loops and conditionals to build 2D games.
- Use the mathematics of perspective to give 2D shapes the illusion of depth and create a 3D pong game.