



**COLORADO**  
Department of Education

# Colorado CTE Programs Solutions

## Who is Mastery Coding?

Founded by a California Teacher of the Year Award Winner, Mastery Coding provides expertly-crafted coding curriculum to K-12 schools. Our students learn coding and technology skills aligned to modern workforce needs. This way, students can step into high-paying jobs with the critical aptitudes employers desperately seek.

## Our Mission

To provide schools with coding curriculum that is accessible, engaging, data-driven, updated, and sustainable for years to come.

## What We Do

Mastery Coding provides expert coding curriculum that allows:

**Students** with no prior coding experience learn to integrate academic and technical skills that focus and reinforce the concepts that are needed in the increasingly digital workplace. Colorado students have the opportunity to work in an industry-based coding landscape that offers Industry Recognized Certifications and transferable skills with endless potential for stackable credentials.

**Teachers** with no prior coding experience to successfully teach a series of project-based coding classes with confidence, and be supported with the resources necessary to engender academic achievement.

**Districts** to onboard a comprehensive curriculum that offers cutting-edge coding courses for elementary, middle and high school students (including several Colorado CTE Programs).

## Coding Pathway

Mastery Coding has developed a 3-year course sequence solution to fully support the Colorado Coding pathway utilizing the following courses:

■	MC-CO Coding I	Available NOW
■	MC-CO Coding II	Available NOW
■	MC-CO Game Design	BTS 2022

These courses incorporate following the Colorado standards preparing students to apply scripting languages such as C#, program customization, program analysis, as well as, other aspects of operating systems and application design. Industry standards are used in all Mastery Coding courses providing real world programming experience for students in the following:

- Logic, Critical Thinking, and Problem Solving
- Beginning Application Development (Coding)
- Advanced Application Development (Database, Files, Security, Storage)
- Program Analysis and Design
- Programming Fundamentals and Syntax
- Leadership and Teamwork

# Coding Pathway

## MC-CO Coding I

MC-CO Coding I leverages the excitement of creating games to teach students 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 also complete multiple code projects to build an online portfolio.

**Topics Include:** JavaScript Coding, Cartesian Coordinate Systems, Vector Arithmetic, 2D Animation, User Interface, Game Development Organization

## MC-CO Coding II

MC-CO Coding II teaches C# coding and game design with the Unity 3D Engine. Upon course completion students will have the ability to create a 3D game from scratch on their own.

**Topics Include:** Object Oriented Programming, C#, game physics, vector arithmetic, programming best practices, git version control, asset management, 3D modeling, animation, cross-platform input support.

**Certifications:** Unity User: Programmer, Unity User: Artist

## MC-CO Game Design

MC-CO Game Design focuses on the full development lifecycle. From design, to asset creation, to coding tools and behaviors. Students learn new skills and techniques in C# and Unity.

**Topics Include:** Intermediate C#, git version control, asset management, 3D modeling, animation, code collaboration, cross-platform input support.

**Prerequisites:** MC-CO Coding II

**Certifications:** Unity Certified Associate: Game Developer