

Computer Science: Blocks Pro Track Semester 1

Grade Level: 3–5
Credit: 0.5

Course Overview

Welcome to Blocks Pro Track, a vibrant, fully online, self-paced, competency-based journey into coding mastery! This course empowers upper elementary students to become confident creators, building interactive stories and mini-games through intuitive block-based programming. Every module aligns with state and national computer science standards and is carefully sequenced for students to demonstrate true understanding before moving on—guaranteeing mastery, confidence, and a strong foundation in computational thinking.

Learners begin by exploring algorithmic thinking, using step-by-step logic to solve problems creatively. They then delve into event-driven coding, where clicks, movements, and interactions trigger dynamic responses—bringing their creations to life. Along the way, they engage in creative storytelling, integrating characters, animations, backgrounds, and sound to enrich their digital worlds.

This course emphasizes resilience and iteration, encouraging students to debug, test, and refine their work as real coders do. They'll earn competency badges as they progress, marking achievements in sequencing, interactivity, visual design, and polish. By semester's end, students showcase a portfolio of polished interactive creations—demonstrating critical-thinking, creativity, and programming prowess.

What Students Will Explore

- Algorithm Design & Sequencing – Break complex problems into simple steps and create sequences that guide character actions.
- Event-Driven Interactivity – Make sprites respond to clicks, keystrokes, or interactions, teaching responsive, dynamic coding.
- Visual & Audio Integration – Experiment with animation, costume changes, backgrounds, and sound to tell engaging stories.
- Debugging & Problem Solving – Tackle errors through logic and testing, learning to refine and improve their projects.
- Self-Paced Progression – Learn at your own pace—only advancing when skills are mastered, building strong foundations step by step.

Key Learning Experiences

- Guided Tutorials featuring interactive demos and hands-on block challenges
- Creative Mini-Projects including animated scenes, simple logic puzzles, or click-triggered stories
- Debugging Missions designed to teach troubleshooting, error detection, and validation
- Peer Showcase & Feedback allowing learners to share creations and offer supportive design comments
- Badge-Based Competency System recognizing mastery of core skills and progression milestones

Learning Objectives

By the end of the semester, students will:

- Break tasks into precise, ordered steps and compose working algorithms
- Create responsive programs using events and user input
- Decorate and animate interactive scenes using visuals and sound
- Debug and refine projects to improve functionality and creativity
- Build a thoughtful portfolio and clearly explain coding choices
- Demonstrate computational thinking—logical reasoning, abstraction, sequencing—in multiple projects

Why Take This Course

Blocks Pro Track transforms learners into problem solvers, creators, and technological storytellers. Research confirms that block-based coding enhances critical thinking, resilience, and confidence in young learners, and jumpstarts familiarity with logic and programming concepts that support future learning .

With its fully online, self-paced, competency-based design, students progress according to their own timeline—building real confidence without competition or pressure. They emerge with a portfolio of polished digital creations, a collection of badges marking their achievements, and a growth mindset fueled by debugging, iteration, and creativity.

Whether your child dreams of designing games, telling interactive stories, or simply learning how to think like a coder, Blocks Pro Track provides a playful yet rigorous launchpad into future-ready skills. It's a fun, standards-aligned programming adventure that builds real-world thinking—one block at a time!

The course is a fully online, self-paced, competency-based program, and we're very proud of it!

Students only advance once they've demonstrated true mastery of each skill—no rushing, no guessing. This flexible structure not only supports individual learning styles and schedules but also empowers learners to take ownership of their progress, knowing exactly what they can do next.

Moreover, every module, assignment, and assessment is meticulously aligned with state standards and clear learning objectives, guaranteeing comprehensive coverage of essential knowledge and real-world skills students need to succeed. This isn't just online learning—it's purposeful, rigorous, and personalized, ensuring no student advances until they truly understand the material.