



Kindergarten Massachusetts Digital Literacy and Computer Science Course Syllabus

One Year for Elementary School, 36 Hours

Course Overview and Goals

The Kindergarten Massachusetts Digital Literacy and Computer Science course introduces students to foundational programming concepts through a block-based programming language. Students will develop computational thinking and problem-solving skills while learning to create interactive projects, animations, and games. This course emphasizes creativity and collaboration, providing students with a solid base in computer science concepts and digital literacy.

Learning Environment: This course is teacher-led and includes ready-to-use lessons following a consistent structure: Introduction, Guided Practice, Independent Practice, Extension, and Reflection. Instruction follows an “I do, we do, you do” model and incorporates spiral review to reinforce concepts and build confidence over time. The course includes 36 lessons, each approximately 30 minutes long, providing a full year of instruction when taught once per week. While the course allows for instructional flexibility, some lessons are required to fully meet state computer science standards and are clearly identified within the syllabus. All Digital Literacy lessons are required to ensure full standards alignment, as they address essential non-programming computer science concepts. Required lessons are labeled with the specific standards they address to support planning and compliance.

Standards Alignment Note: Lessons that list “*Standards Met*” (below) are required to fully meet state computer science standards. Lessons without a standards tag support spiral review, practice, or enrichment.

Programming Environment: Students will write and run programs that are saved in students’ accounts. The environment supports interactive, hands-on programming, enabling students to create and debug projects in a user-friendly interface.

Assessments: Some units conclude with a brief 2-question quiz designed to assess student understanding of the concepts and skills introduced in the unit. Quizzes can be assigned digitally, completed as a QuizBuzz activity, or printed for paper-based completion.

Prerequisites: There are no prerequisites for this course. It is designed to support all learners, regardless of prior computer science experience.

More Information: Browse the content of this course at <https://codehs.com/course/28645/overview>



A clickable PDF can be found at https://codehs.com/MA_Roadmaps

Course Breakdown

Unit 1: Unplugged Exploration (2 lessons)

Introduces computational thinking through screen-free activities that build sequencing and pattern-recognition skills before students begin programming.

Objectives / Topics Covered	• Sequence steps in order • Break a task into smaller parts • Identify patterns in daily routines
Lessons	Sequences • Create a sequence of step-by-step instructions for a dance. Computational Thinking: Morning Routines • Use computational thinking to identify patterns and sequence steps in a morning routine.

Unit 2: Getting Started (3 lessons)

Introduces students to the CodeHopJr platform and builds the mouse and keyboard skills needed to navigate the programming environment.

Objectives / Topics Covered	• Log in and navigate CodeHopJr • Use mouse skills to drag and click • Identify and use keyboard letters, numbers, and functions
Lessons	Welcome to CodeHop! (K-2.DTC.a.1, K-2.CS.a.4) • Learn to log in and navigate the CodeHopJr Playground. Mouse Practice (K-2.DTC.a.1, K-2.CS.a.4) • Practice dragging and clicking with the mouse through several games. Keyboard Introduction (K-2.DTC.a.1, K-2.DTC.a.2, K-2.CS.a.4) • Explore the keyboard's letters, numbers, and basic functions. Kindergarten Getting Started Quiz (2 questions)

Unit 3: Introduction to Programming (6 lessons)

Follows Scout through a story-driven series of lessons that introduce the programming interface, characters, backgrounds, and motion blocks.

Objectives / Topics Covered	• Navigate the programming interface • Add and modify characters and backgrounds • Sequence motion blocks to move characters • Build a multi-page animated story
Lessons	Scout Adventures 1: Introducing Scout (K-2.DTC.a.3, K-2.CT.d.1) • Explore the programming interface and add characters to a story. Scout Adventures 2: Scout Starts Exploring • Add backgrounds and a new page to a program. Scout Adventures 3: Scout Meets a Friend • Delete and modify characters within a program. Scout Adventures 4: Scout Explores the Forest • Use motion blocks to move characters around the stage. Scout Adventures 5: Scout and Bluebird Help • Build a sequence of motion blocks to collect objects on stage. Scout Adventures 6: Scout Celebrates with Friends • Create a celebration scene with characters, pages, backgrounds, and motion sequences.

	Kindergarten Introduction to Programming Quiz (2 questions)
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Unit 4: Sequences & Events (6 lessons)

Builds on sequencing skills by introducing events, expanding students' ability to create multi-step programs with visual tools.

Objectives / Topics Covered	• Create programs using sequences and events • Use painting and grow/shrink tools creatively • Combine sequences to convey a message
Lessons	Drawing Tools: Fairy Tale Painting (K-2.DTC.a.3) • Use painting tools to create a fairy-tale scene. Introduction to Events • Build a program using different types of events. Sequences: Snowball Fight (K-2.CT.d.3) • Create a program using multiple sequences. Draw and Tell (K-2.DTC.a.4) • Create a short scene and write or dictate a sentence about it. Our Responsibilities • Program two characters to explain responsible behavior at school and at home. Introduction to Grow and Shrink Blocks • Use grow and shrink blocks to change a character's size. Kindergarten Sequences & Events Quiz (2 questions)

Unit 5: Pages (2 lessons)

Introduces multi-page programs and the tools students use to navigate between pages.

Objectives / Topics Covered	• Create a program with multiple pages • Use a go-to-page block to switch pages
Lessons	Introduction to Pages (K-2.CT.d.3) • Create a program with multiple pages. Using the Go To Page Block • Add a go-to-page block to switch between pages in a program.

Unit 6: Block Exploration (2 lessons)

Explores sound, speed, and design-process blocks through hands-on transportation and animation projects.

Objectives / Topics Covered	• Use say/sound and speed blocks • Apply the design process to solve a problem
Lessons	Transportation Speeds and Sounds • Program modes of transportation using speed and sound/say blocks. Introduction to the Design Process • Follow the steps of the design process to build a simple animation.

Unit 7: Loops (1 lesson)

Introduces loops as a way to repeat code efficiently.

Objectives / Topics	• Create a program using loops • Explain how loops repeat code
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Covered	
Lessons	Loops (K-2.CT.d.2) Create a program using loops and explain how loops repeat code. Kindergarten Pages, Block Exploration & Loops Quiz (2 questions)

Unit 8: Computing Systems (3 lessons)

Explores what computers are made of, how they work, and how they connect to other devices over networks.

Objectives / Topics Covered	- Identify computer input, output, hardware, and software - Compare types of software - Explain how devices connect over networks - Practice basic keyboarding
Lessons	Keyboarding Basics - Type simple words and sentences using a keyboard. Computer Basics: Introduction - Identify a computer's input, output, hardware, and software. Types of Software - Compare software applications to select the right one for a task. Using Networks to Connect - Describe how devices connect and share information over networks. Kindergarten Computing Systems Quiz (2 questions)

Unit 9: Safety & Responsibility (3 lessons)

Introduces safe, responsible, and kind behavior when using technology and going online.

Objectives / Topics Covered	- Identify private information - Follow an Acceptable Use Policy - Recognize kind vs. unkind online behavior
Lessons	Keeping Information Safe (K-2.CAS.a.6, K-2.CAS.a.7) - Identify private and personal information. Introduction to Responsible Technology Use (K-2.CAS.b.1, K-2.CAS.b.2) - Identify safe and responsible ways to use technology, including an Acceptable Use Policy. Being Kind Online (K-2.CAS.a.5, K-2.CAS.a.8) - Recognize kind and unkind online messages, including cyberbullying. Kindergarten Safety & Responsibility Quiz (2 questions)

Unit 10: Data & Analysis (3 lessons)

Introduces students to collecting, organizing, researching, and storing data.

Objectives / Topics Covered	- Collect and organize data - Research and communicate findings - Explain how computers store data as files
Lessons	What Can Data Tell Us? (K-2.CT.c.1, K-2.CT.c.2, K-2.CT.c.4) - Collect, organize, and analyze data about school transportation. Introduction to Research (2 classes K-2.DTC.c.1, K-2.DTC.c.2) - Research information and create a program to share findings visually. Introduction to Data Storage and Files (K-2.CT.c.5) - Model how computers collect and store data as files. Kindergarten Data & Analysis Quiz (2 questions)

Unit 11: Impacts of Computing (2 lessons)

Explores how technology shows up in daily life and in different careers.

Objectives / Topics Covered	- Identify computing devices in daily life - Explain how technology changes how people live and work - Connect technology to different careers
Lessons	Impacts of Computing: Daily Life (K-2.CAS.c.5, K-2.DTC.b.3) - Identify computing devices in daily life and explain how technology has changed how people live and work. Careers in CS: Spacecraft Design (K-2.CAS.c.5) - Explain how technology helps different careers and animate a spacecraft and astronaut.

Unit 12: AI Exploration (3 lessons)

Introduces students to what artificial intelligence is and how it learns from data.

Objectives / Topics Covered	- Identify examples of AI in daily life - Explain how AI learns from data - Build a simple decision tree
Lessons	What is AI? - Identify examples of AI in daily life and explain how a smart machine differs from a regular tool. Sorting with Decision Trees (K-2.CT.a.1) - Create a simple decision tree to sort items based on rules. Machine Learning: What is a Blorg? - Explain how AI learns by being trained to identify an alien. Kindergarten Impacts of Computing & AI Exploration Quiz (2 questions)

Kindergarten Massachusetts Digital Literacy and Computer Science Supplemental Materials

Resources	Description
Parent Welcome Letter (Spanish)	Send this letter home to introduce families to their new computer science curriculum.
Warm-Up Activities	This warm-up activity slide deck provides 5-10 minute problems aligned with computer science skills to engage students at the start of class, allowing teachers to preview or review concepts with answer keys and discussion tips included in the Speaker Notes.
Program Self-Assessment (Spanish)	This is a student self-assessment tool designed to help K-6 learners reflect on their programming projects, evaluate their skills in algorithms, debugging, collaboration, and reflection, and set goals for improvement.
Peer Review Resources (Spanish)	This provides structured worksheets to facilitate student feedback during collaborative coding projects. It encourages reflection by guiding students to highlight successes, ask questions, and offer constructive feedback on their partner's work.
Lesson Reflection & Computational Thinking	This guides students in engaging with computational thinking concepts, preparing for discussions, reflecting on lessons, and applying their learning to

[\(Spanish\)](#)

real-world problem-solving.

These resources and more are found on the [CodeHop Resources Page](#).