Oklahoma Computer Science: 1st Grade Course Syllabus

One Year for Elementary School, 36 Hours

Course Overview and Goals

The Oklahoma Computer Science: 1st Grade 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.

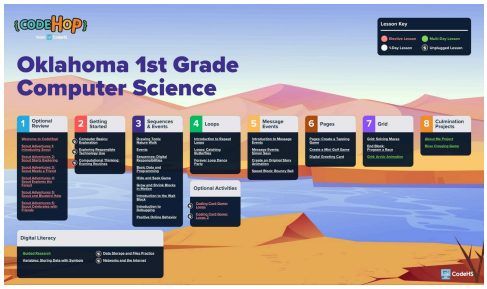
The course includes 36 lessons, each approximately 45 minutes long, providing a full year of instruction when taught once per week. While the course allows for instructional flexibility, some lessons are required to fully meet state computer science standards and are clearly identified within the syllabus. 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.

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 three-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/OK_1/overview



A clickable PDF can be found at https://codehs.com/OK-K-5Roadmaps

Course Breakdown

Optional Review

Students revisit the CodeHopJr environment through the story-driven Scout Adventures series, reviewing how to add and modify characters, backgrounds, pages, and motion sequences.

Objectives / Topics Covered	● Log in and navigate the CodeHopJr Playground ● Add and modify characters, backgrounds, and pages ● Build sequences of motion blocks to move characters
Lessons	**Welcome to CodeHop!** ● Learn to log in and explore the CodeHopJr Playground. **Scout Adventures 1: Introducing Scout** ● Explore the programming interface and add characters. **Scout Adventures 2: Scout Starts Exploring** ● Add backgrounds and a page to a program. **Scout Adventures 3: Scout Meets a Friend** ● Delete and modify characters in 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 the stage. **Scout Adventures 6: Scout Celebrates with Friends** ● Create a celebration scene using characters, pages, backgrounds, and motion sequences with events.

Unit 1: Getting Started (3 lessons)

Students explore what computers are and how they work, practice safe and responsible technology use, and apply computational thinking to everyday routines.

Objectives / Topics Covered	● Identify input, output, hardware, and software ● Explain safe and responsible technology use ● Apply computational thinking to everyday routines
Lessons	**Computer Basics: Exploration (1.CS.D.01, 1.CS.HS.01, 1.CS.T.01, 1.IC.C.01)** ● Learn what a computer is and identify input, output, hardware, and software. **Exploring Responsible Technology Use** ● Explain ways to use technology safely and responsibly. **Computational Thinking: Evening Routines** ● Break down evening routines into patterns and step-by-step sequences. **Getting Started Quiz (3 questions)**

Unit 2: Sequences and Events (9 lessons)

Students program with sequences and events using a growing set of blocks, collect and present data, practice debugging, and learn what it means to be responsible online.

Objectives / Topics Covered	● Create programs using events and sequences ● Collect data and present it visually ● Find and correct bugs in sequences ● Practice positive online behavior

Lessons	**Drawing Tools: Nature Walk (1.AP.A.01)** ● Use drawing tools to create a nature-walk scene. **Events (1.AP.A.01, 1.AP.C.01, 1.AP.PD.03)** ● Explain what an event is in programming and use multiple event blocks in a program. **Sequences: Digital Responsibilities** ● Use sequences to program characters and explain how to be responsible online. **Basic Data and Programming (1.DA.CVT.01, 1.DA.IM.01)** ● Collect data and create a program to present it visually. **Hide and Seek Game (1.AP.A.01, 1.AP.C.01)** ● Program an interactive game of hide-and-seek using the hide block. **Grow and Shrink Blocks in Motion (1.AP.A.01)** ● Create a program that changes character sizes using motion, grow, and shrink blocks. **Introduction to the Wait Block (1.AP.A.01, 1.AP.C.01)** ● Use “wait” blocks to make characters pause in a program. **Introduction to Debugging (1.AP.PD.03, 1.AP.PD.04)** ● Find and correct bugs in sequences. **Positive Online Behavior (1.IC.SI.01, 1.NI.C.01)** ● Identify appropriate and inappropriate online behavior in a CodeHopJr program. **Sequences and Events Quiz (3 questions)**

Optional Unplugged Loops Activities

Students step away from the computer to practice loops, working together with coding cards to move Scout through mazes.

Objectives / Topics Covered	● Build instruction sequences that use loops ● Work together to solve mazes with coding cards
Lessons	**Coding Card Game: Loops (1.AP.A.01, 1.AP.C.01)** ● Work together to build a sequence of instructions with loops that moves Scout through a maze. **Coding Card Game: Loops 2 (1.AP.A.01, 1.AP.C.01)** ● Practice building longer maze sequences with loops in the coding card game.

Unit 3: Loops (3 lessons)

Students learn how loops are used to repeat code, using repeat and forever loops to build games and animations.

Objectives / Topics Covered	● Use repeat loops to run code multiple times ● Combine loops with show and hide blocks ● Use forever loops to repeat actions
Lessons	**Introduction to Repeat Loops (1.AP.C.01, 1.AP.PD.03)** ● Use repeat loops to run a section of code multiple times. **Loops: Catching Butterflies (1.AP.A.01, 1.AP.C.01)** ● Create a butterfly-catching game using “show” and “hide” blocks with loops. **Forever Loop Dance Party (1.AP.A.01, 1.AP.C.01, 1.AP.PD.03)** ● Create a dance sequence using a “repeat forever” loop to make characters repeat actions. **Loops Quiz (3 questions)**

Unit 4: Message Events (4 lessons)

Students use message events to make characters communicate and interact, building relay races, games, and story animations.

Objectives / Topics Covered	• Use messages to make characters interact • Communicate from one character to many • Animate an original story
Lessons	**Introduction to Message Events (1.AP.A.01, 1.AP.C.01)** • Program a relay race that uses messages to make characters interact. **Message Events: Simon Says (1.AP.A.01, 1.AP.C.01)** • Use message events to make one character communicate with many characters. **Create an Original Story Animation (1.AP.A.01, 1.AP.C.01, 1.AP.PD.01, 1.AP.PD.03)** • Create a program that animates an original story. **Speed Block: Bouncy Ball (1.AP.A.01, 1.AP.C.01, 1.AP.PD.03)** • Use speed blocks and messages to program a character to move at different speeds. **Message Events Quiz (3 questions)**

Unit 5: Pages (3 lessons)

Students build multi-page programs and games, combining pages with events, messages, and loops.

Objectives / Topics Covered	• Create games that move from page to page • Combine messages and loops in projects • Design interactive multi-page programs
Lessons	**Pages: Create a Tapping Game (1.AP.A.01, 1.AP.C.01)** • Create a game that moves from one page to the next using “go to page” blocks. **Create a Mini Golf Game (1.AP.A.01, 1.AP.C.01)** • Use messages and loops to build a mini golf game. **Digital Greeting Card (1.AP.A.01, 1.AP.C.01)** • Create a digital greeting card with events and loops. **Pages Quiz (3 questions)**

Unit 6: Grid (4 lessons)

Students use the CodeHopJr grid to plan precise character movement, designing mazes, races, and animations.

Objectives / Topics Covered	• Use the grid to program character movement • Design and solve mazes • Use the “end” block in animations
Lessons	**Grid: Solving Mazes (1.AP.A.01, 1.AP.C.01, 1.AP.PD.03)** • Design a maze and use the grid to program a character to move through it. **End Block: Program a Race** • Program a race and use the “end” block in an animation. **Grid: Arctic Animation (2 classes | 1.AP.A.01, 1.AP.C.01, 1.AP.PD.01)** • Use the grid in CodeHopJr to create an arctic animation. **Grid Quiz (3 questions)**

Unit 7: Culmination Projects (5 lessons)

Students plan and build larger projects that bring together sequences, events, loops, and speed blocks.

Objectives / Topics Covered	• Plan a program before building it • Combine events, sequences, and loops in projects • Adjust game difficulty using speed blocks
Lessons	**About Me Project (3 classes | 1.AP.A.01, 1.AP.C.01, 1.AP.PD.01, 1.AP.PD.04)** • Plan a program that describes their characteristics and interests. **River Crossing Game (2 classes | 1.AP.A.01, 1.AP.C.01, 1.AP.PD.03)** • Program obstacles in a game and change the level of difficulty using speed blocks.

Unit 8: Digital Literacy (5 lessons)

Students research with digital sources, model how programs store data with variables and files, and learn how networks and the Internet carry messages.

Objectives / Topics Covered	• Find information using research sources • Model how programs store data using variables • Recognize how computers store data as files • Explain how messages travel over networks and the Internet
Lessons	**Guided Research (2 classes | 1.AP.C.01, 1.AP.PD.02)** • Find information using research sources and create a program to share it visually. **Variables: Storing Data with Symbols (1.AP.V.01)** • Model how programs store and manipulate data using variables. **Data Storage and Files Practice (1.DA.S.01)** • Recognize that computers store data as files and model how data is collected and stored. **Networks and the Internet (1.NI.NCO.01)** • Explain what a network is and model how messages travel over the Internet. **Digital Literacy Quiz (3 questions)**

Oklahoma Computer Science: 1st Grade 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 (Spanish)	This guides students in engaging with computational thinking concepts, preparing for discussions, reflecting on lessons, and applying their learning to real-world problem-solving.
These resources and more are found on the **CodeHop Resources Page**.	