Arkansas Computer Science: Kindergarten Course Syllabus

One Year for Elementary School, 36 Hours

Course Overview and Goals

The **Arkansas Computer Science: Kindergarten Course** introduces students to foundational programming concepts through a block-based programming language. Students explore digital literacy and computer science skills while learning to create interactive projects, animations, and games. This course emphasizes creativity, collaboration, and real-world connections, providing students with a strong foundation in computer science concepts and digital literacy.

Learning Environment: This course is designed to be teacher-led, with ready-to-use lesson plans. Each programming lesson follows a structured format: **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. Many digital literacy lessons contain unplugged activities, requiring printed handouts and class activities to support hands-on learning.

The course includes a total of **36 lessons,** each approximately 30 minutes long. The concepts taught in this course spiral across grade levels, ensuring that students can revisit and build upon their understanding year after year, even if all lessons are not completed within a single year.

Standards Alignment Note: Lessons that list standards in bold parentheses (below) are required to fully meet state computer science standards.

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/AR_K/overview



A clickable PDF can be found at https://codehs.com/AR-K-4Roadmaps

Course Breakdown

Unit 1: Getting Started (3 weeks)

In this unit, students learn to log in to CodeHop, practice using the mouse and keyboard, and use computational thinking to break down their morning routines.

Objectives / Topics Covered	● Log in and navigate the Playground ● Use the mouse and keyboard to interact with a computer ● Identify patterns and sequence steps in everyday routines
Lessons	**Welcome to CodeHop! (Optional)** ● Learn how to log in and explore the Playground to prepare for future lessons. **Mouse Practice (CSK4.K.4.1.3)** ● Practice dragging and clicking with the mouse by playing a series of games. **Keyboard Introduction (CSK4.K.4.2.4)** ● Use the letters, numbers, and basic function keys on the keyboard. **Computational Thinking: Morning Routines (CSK4.K.2.1.3, CSK4.K.2.2.1, CSK4.K.2.3.1)** ● Identify patterns, break down tasks, and sequence the steps of a morning routine. **Getting Started Quiz (2 questions)**

Unit 2: Sequences & Events (6 weeks)

In this unit, students act out and program step-by-step sequences, then learn how events trigger actions in a program.

Objectives / Topics Covered	● Create step-by-step sequences of instructions ● Explain how an event triggers an action ● Use event and motion blocks in a program
Lessons	**Sequences (Unplugged) (CSK4.K.2.1.2, CSK4.K.2.3.1)** ● Create a sequence of step-by-step instructions for a class dance. **Coding Card Game: Sequences (CSK4.K.2.3.2)** ● Work together to build a sequence of instructions that moves Scout through a maze. **Acting with Events (CSK4.K.2.1.2, CSK4.K.2.3.1)** ● Act out how an event can trigger an action. **Introduction to Events (CSK4.K.2.3.2)** ● Create a program that uses different types of events. **Sequences: Snowball Fight (CSK4.K.2.2.1, CSK4.K.2.3.1)** ● Program a snowball fight scene using multiple sequences. **Events: Submarine Sequences (CSK4.K.2.3.1, CSK4.K.2.2.1)** ● Use event and motion blocks to program an underwater scene. **Sequences & Events Quiz (2 questions)**

Unit 3: Pages (2 weeks)

In this unit, students create programs with multiple pages and use the “go to page” block to move between them.

Objectives / Topics Covered	● Add multiple pages to a program ● Use the “go to page” block to switch pages
Lessons	**Introduction to Pages (CSK4.K.4.1.3)** ● Create a program that has more than one page.

	Using the Go to Page Block (CSK4.K.4.1.3) ● Use the “go to page” block to move from page to page in an activity. **Pages Quiz (2 questions)**

Unit 4: Block Exploration (6 weeks)

In this unit, students explore new blocks to change the speed, size, and sounds of characters, design mazes, fix bugs, and follow the design process.

Objectives / Topics Covered	● Use speed, grow, shrink, say, and sound blocks ● Find and fix bugs in a sequence ● Follow the steps of the design process with guidance
Lessons	**Introduction to Speed Blocks (CSK4.K.4.1.3)** ● Animate characters using different speed blocks. **Introduction to Grow and Shrink Blocks (CSK4.K.4.1.3)** ● Change the size of characters using “grow” and “shrink” blocks. **Animal Sounds (CSK4.K.4.1.3)** ● Program animal characters to speak using “say” and “sound” blocks. **Counting with Mazes (CSK4.K.3.2.2)** ● Use counting skills to design a maze that takes a specific number of steps. **Debugging: Events and Motion (CSK4.K.2.2.2)** ● Find and correct bugs in event and motion sequences. **Introduction to the Design Process (CSK4.K.2.1.4, CSK4.K.4.2.2)** ● Follow the steps of the design process to solve a simple problem with an animation. **Block Exploration Quiz (2 questions)**

Unit 5: Loops (3 weeks)

In this unit, students learn how loops repeat code and use repeat and forever loops to animate characters.

Objectives / Topics Covered	● Explain how loops repeat code ● Use repeat and forever loops in a program
Lessons	**Loops (CSK4.K.2.1.1)** ● Create a program with loops and explain how loops repeat code. **Loops: Frog and Rabbit (CSK4.K.4.1.3)** ● Use loops to repeat code that animates a frog and a rabbit. **Loops: Play in the Park (CSK4.K.4.1.3)** ● Use “repeat” and “forever” loops to program a park scene. **Loops Quiz (2 questions)**

Unit 6: Culmination Projects (4 weeks)

In this unit, students apply events, sequences, and loops to create personal and creative projects.

Objectives / Topics Covered	● Plan and create an original program ● Combine events, sequences, and loops in a project
Lessons	**All About Me! (2 part lesson | CSK4.K.4.1.3, CSK4.K.4.2.2)** ● Create a program that shares information about their favorite things. **Wildlife Scene Project (2 part lesson | CSK4.K.4.1.3)** ● Create an animated wildlife scene using events, sequences, and loops.

Unit 7: Computing Systems (2 weeks)

In this unit, students learn what a computer is, identify its parts, and discover how devices connect and share information through networks.

Objectives / Topics Covered	● Identify input, output, hardware, and software ● Describe what to do when a computer doesn't work ● Explain how devices connect using a network
Lessons	**Computer Basics: Introduction (CSK4.K.4.1.1, CSK4.K.4.1.2, CSK4.K.4.1.4, CSK4.K.4.2.1, CSK4.K.4.3.3)** ● Identify what a computer is, how we use it, and its input, output, hardware, and software. **Using Networks to Connect (CSK4.K.4.3.1, CSK4.K.4.3.2)** ● Describe how people and devices connect and share information with and without wires. **Computing Systems Quiz (2 questions)**

Unit 8: Safety & Responsibility (4 weeks)

In this unit, students learn to be kind online, keep personal information private, and use technology and websites safely and responsibly.

Objectives / Topics Covered	● Recognize kind and unkind online behavior ● Identify private and personal information ● Use technology and websites safely
Lessons	**Being Kind Online (CSK4.K.1.1.1, CSK4.K.1.1.2, CSK4.K.1.1.3)** ● Recognize kind and unkind online messages, including cyberbullying. **Keeping Information Safe (CSK4.K.1.2.1)** ● Identify private and personal information that should not be shared. **Introduction to Responsible Technology Use (CSK4.K.1.1.2, CSK4.K.1.3.1)** ● Identify safe and responsible ways to use technology, including following an Acceptable Use Policy. **Introduction to Website Safety (CSK4.K.1.1.4, CSK4.K.1.2.2, CSK4.K.1.2.3)** ● Recognize safe websites and apps and practice interacting with them safely. **Safety & Responsibility Quiz (2 questions)**

Unit 9: Data & Analysis (4 weeks)

In this unit, students use research sources to find information, explore what data can tell us, and learn how computers store data as files.

Objectives / Topics Covered	● Find information using research sources ● Collect, organize, and describe simple data ● Recognize that computers store data as files
Lessons	**Introduction to Research (2 part lesson | CSK4.K.1.3.2)** ● Find information using research sources and create a program to share what they learned. **What Can Data Tell Us? (CSK4.K.3.1.1, CSK4.K.3.1.2, CSK4.K.3.1.3, CSK4.K.3.2.3, CSK4.K.3.3.1, CSK4.K.3.3.2)** ● Collect and organize simple data, then use it to answer questions and make predictions. **Introduction to Data Storage and Files (CSK4.K.4.2.3)** ● Model how data is collected and stored as files on a computer. **Data & Analysis Quiz (2 questions)**

Unit 10: Artificial Intelligence (2 weeks)

In this unit, students discover examples of AI in their daily lives and learn how AI uses data and rules to make decisions.

Objectives / Topics Covered	• Identify examples of AI in daily life • Explain how a smart machine differs from a regular tool • Sort items using 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 (CSK4.K.3.2.1)** • Create a simple decision tree to sort items and explain how AI uses data to make decisions. **Artificial Intelligence Quiz (2 questions)**

Kindergarten Course 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**.	