



# Alabama Digital Literacy and Computer Science: 5th Grade Course Syllabus

One Year for Elementary School, 36 Hours

## Course Overview and Goals

The **Alabama Digital Literacy and Computer Science: 5th Grade 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.

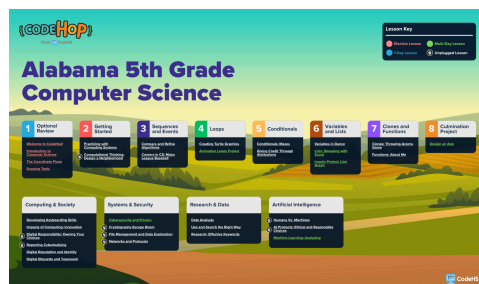
The course includes a total of **36 lessons**, each approximately 45 minutes long. The concepts taught in this course spiral across grade levels, ensuring that students can revisit and build upon their understanding year after year, even if all lessons are not completed within a single year.

**Standards Alignment Note:** Lessons that list “*Standards 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.

**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/AL\\_5/overview](https://codehs.com/course/AL_5/overview)



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

## Course Breakdown

### Optional Review

In this optional unit, students are introduced to key computer science vocabulary, practice logging into and navigating the Playground, and explore basic programming.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Log in and navigate the Playground.</li><li>● Understand and use key computer science vocabulary.</li><li>● Create a simple program to demonstrate basic programming skills.</li><li>● Use the coordinate plane to position sprites.</li></ul>
Lessons	<p><b>Welcome to CodeHop!</b></p> <ul style="list-style-type: none"><li>● Learn how to log in and explore the Playground to prepare for future lessons.</li></ul> <p><b>Introduction to Computer Science</b></p> <ul style="list-style-type: none"><li>● Define key computer science vocabulary and create a simple program to apply foundational programming concepts.</li></ul> <p><b>The Coordinate Plane</b></p> <ul style="list-style-type: none"><li>● Use the coordinate plane to position sprites and create an open-ended animation.</li></ul> <p><b>Drawing Tools</b></p> <ul style="list-style-type: none"><li>● Create customized sprites and backdrops using drawing tools.</li></ul>

### Unit 1: Getting Started (2 weeks)

In this unit, students apply computational thinking to design a neighborhood. They will also begin exploring computing systems.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Apply computational thinking skills.</li><li>● Explore how to interact with and operate basic computing systems.</li></ul>
Lessons	<p><b>Practicing with Computing Systems</b></p> <ul style="list-style-type: none"><li>● Interact with and troubleshoot basic computing systems.</li><li>● <i>Standard Met: DLCS25.5.14</i></li></ul> <p><b>Computational Thinking: Design a Neighborhood</b></p> <ul style="list-style-type: none"><li>● Use computational thinking skills to design a neighborhood layout.</li></ul>

### Unit 2: Sequences and Events (2 weeks)

In this unit, students build foundational programming skills by using events and comparing and refining algorithms for efficiency.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Use events to control when actions occur in a program.</li><li>● Compare and refine multiple algorithms to choose the most effective solution for a task.</li></ul>
Lessons	<p><b>Compare and Refine Algorithms</b></p> <ul style="list-style-type: none"><li>● Explore multiple algorithms for completing the same task and refine them to choose the most efficient solution.</li><li>● <i>Standards Met: DLCS25.5.1, DLCS25.5.3</i></li></ul> <p><b>Careers in CS: Major League Baseball</b></p> <ul style="list-style-type: none"><li>● Explain how coding can be used in sports and retell events in a timeline program.</li><li>● <i>Standard Met: DLCS25.5.12</i></li></ul>

### Unit 3: Loops (3 weeks)

In this unit, students explore how loops can be used to create visual effects by programming turtle graphics and building multi-scene animations using repeat blocks.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Use repeat loops to simplify and organize code.</li></ul>
Lessons	<b>Creating Turtle Graphics</b> <ul style="list-style-type: none"><li>● Use the pen tool and loops to create turtle-style drawings with repeated patterns.</li></ul> <b>Animation Loops Project (2 part lesson)</b> <ul style="list-style-type: none"><li>● Use repeat loop blocks to build a multi-scene animation, demonstrating how loops can simplify and organize repeated actions.</li></ul>

### Unit 4: Conditionals (2 weeks)

Students explore conditional logic to make programs respond dynamically to different conditions and inputs.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Use if/then and if/else blocks.</li><li>● Use conditionals to build interactive and reactive programs.</li></ul>
Lessons	<b>Conditionals: Mazes</b> <ul style="list-style-type: none"><li>● Create a program that uses conditionals to guide characters through a maze.</li><li>● <i>Standard Met: DLCS25.5.3</i></li></ul> <b>Giving Credit Through Attributions</b> <ul style="list-style-type: none"><li>● Learn to give proper credit when using or remixing programs and images to support respectful digital content use.</li><li>● <i>Standard Met: DLCS25.5.21</i></li></ul>

### Unit 5: Variables and Lists (5 weeks)

In this unit, students explore variables, lists, and comparison operators to manage and organize data in programs.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Learn how variables store information.</li><li>● Use comparison operators to create more complex decision-making logic.</li></ul>
Lessons	<b>Variables in Dance</b> <ul style="list-style-type: none"><li>● Use variables to control features like pitch and speed in a dance animation program.</li><li>● <i>Standard Met: DLCS25.5.4</i></li></ul> <b>Lists: Shopping with Scout (2 part lesson)</b> <ul style="list-style-type: none"><li>● Create a shopping simulator that uses variables, lists, and operators to track items and purchases.</li><li>● <i>Standard Met: DLCS25.5.4</i></li></ul> <b>Inquiry Project: Line Graph (2 part lesson)</b> <ul style="list-style-type: none"><li>● Collect and analyze data through an inquiry project, then modify a program to display the results using a line graph.</li><li>● <i>Standards Met: DLCS25.5.4, DLCS25.5.5</i></li></ul>

## Unit 6: Clones and Functions (2 weeks)

In this unit, students explore advanced programming concepts by using clones to build interactive games and applying randomization to create variety in gameplay.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Use clones to create repeated sprites.</li><li>● Create and use functions to organize and reuse code efficiently.</li></ul>
Lessons	<b>Clones: Throwing Acorns Game</b> <ul style="list-style-type: none"><li>● Create a throwing acorns game using clones.</li><li>● <i>Standard Met: DLCS25.5.4</i></li></ul> <b>Functions: About Me</b> <ul style="list-style-type: none"><li>● Create and use a function with input to personalize a program that shares information about the student.</li></ul>

## Unit 7: Culmination Project (3 weeks)

In this unit, students apply their understanding of conditionals, variables, booleans, and events to design and build interactive programs.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Combine creativity, problem-solving, and programming skills to develop a program.</li></ul>
Lessons	<b>Design an App (3 part lesson)</b> <ul style="list-style-type: none"><li>● Use the design thinking process to plan and design an app that addresses a specific user need, combining creativity, problem-solving, and coding skills.</li><li>● <i>Standards Met: DLCS25.5.4, DLCS25.5.14, DLCS25.5.21, DLCS25.5.23</i></li></ul>

## Unit 8: Computing & Society (5 weeks)

In this unit, students explore how different computing technologies impact the world around them and gain an understanding of how to use digital tools responsibly.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Understand how technology impacts society.</li><li>● Learn strategies for staying safe online.</li></ul>
Lessons	<b>Developing Keyboarding Skills (Ongoing typing program)</b> <ul style="list-style-type: none"><li>● Use proper finger placement to practice typing on a keyboard.</li><li>● <i>Standard Met: DLCS25.5.24</i></li></ul> <b>Impacts of Computing: Innovation</b> <ul style="list-style-type: none"><li>● Learn how computing affects individuals, society, and the world.</li><li>● <i>Standards Met: DLCS25.5.12, DLCS25.5.13</i></li></ul> <b>Digital Responsibility: Owning Your Choices</b> <ul style="list-style-type: none"><li>● Identify online dangers and demonstrate how to make responsible choices online.</li><li>● <i>Standards Met: DLCS25.5.9, DLCS25.5.11</i></li></ul> <b>Reporting Cyberbullying</b> <ul style="list-style-type: none"><li>● Recognize and compare types of cyberbullying and explain how online interactions can escalate.</li><li>● <i>Standard Met: DLCS25.5.18</i></li></ul> <b>Digital Reputation and Identity</b> <ul style="list-style-type: none"><li>● Analyze how online interactions affect digital reputation.</li><li>● <i>Standard Met: DLCS25.5.19</i></li></ul> <b>Digital Etiquette and Teamwork</b> <ul style="list-style-type: none"><li>● Use proper etiquette when communicating online.</li><li>● <i>Standard Met: DLCS25.5.21</i></li></ul>

### Unit 9: Systems & Security (5 weeks)

In this unit, students will learn how to stay safe online and explore how networks connect devices.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Recognize common digital threats.</li><li>● Understand how messages move between devices using a network.</li><li>● Manage files on a device.</li></ul>
Lessons	<p><b>Cybersecurity &amp; Privacy (2 part lesson)</b></p> <ul style="list-style-type: none"><li>● Demonstrate how to solve a real-world cybersecurity issue.</li><li>● <i>Standards Met: DLCS25.5.8, DLCS25.5.10</i></li></ul> <p><b>Cryptography Escape Room</b></p> <ul style="list-style-type: none"><li>● Learn basic cryptography to solve multiple ciphers.</li><li>● <i>Standard Met: DLCS25.5.2</i></li></ul> <p><b>File Management and Data Exploration</b></p> <ul style="list-style-type: none"><li>● Explore how to save, organize, and manage digital files effectively.</li><li>● <i>Standard Met: DLCS25.5.22</i></li></ul> <p><b>Networks and Protocols</b></p> <ul style="list-style-type: none"><li>● Learn how network protocols work, how data is transferred, and compare the functions of WiFi, wired, and cellular networks.</li><li>● <i>Standard Met: DLCS25.5.7</i></li></ul>

### Unit 10: Research & Data (3 weeks)

In this unit, students will learn how to search for trustworthy information online and communicate what they learn through interactive programs.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Follow laws when researching online.</li><li>● Analyze data for accuracy and to draw conclusions.</li></ul>
Lessons	<p><b>Data Analysts</b></p> <ul style="list-style-type: none"><li>● Analyze data to draw conclusions and make predictions.</li><li>● <i>Standard Met: DLCS25.5.5</i></li></ul> <p><b>Use and Search the Right Way</b></p> <ul style="list-style-type: none"><li>● Provide proper attribution when searching for information online.</li><li>● <i>Standard Met: DLCS25.5.15, DLCS25.5.16, DLCS25.5.17</i></li></ul> <p><b>Research: Effective Keywords</b></p> <ul style="list-style-type: none"><li>● Evaluate the effectiveness of different keywords when using a search engine.</li><li>● <i>Standard Met: DLCS25.5.15, DLCS25.5.16, DLCS25.5.17</i></li></ul>

### Unit 11: Artificial Intelligence (4 weeks)

In this unit, students will learn how to use AI tools responsibly and effectively.

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● Understand how machines learn information and make predictions.</li><li>● Describe how emerging technologies can be used in daily life.</li><li>● Write AI prompts.</li></ul>
Lessons	<p><b>Humans Vs. Machines</b></p> <ul style="list-style-type: none"><li>● Compare human and computer performance on similar tasks.</li><li>● <i>Standard Met: DLCS25.5.20</i></li></ul> <p><b>AI Products: Ethical and Responsible Choices</b></p> <ul style="list-style-type: none"><li>● Analyze the benefits and challenges of various AI products from multiple perspectives.</li><li>● <i>Standards Met: DLCS25.5.12, DLCS25.5.13</i></li></ul> <p><b>Machine Learning: Analyzing (2 part lesson)</b></p> <ul style="list-style-type: none"><li>● Train and interact with an AI model using Teachable Machine.</li><li>● <i>Standard Met: DLCS25.5.6</i></li></ul>

## 5th Grade Course Supplemental Materials

Resources	Description
<a href="#">Parent Welcome Letter (Spanish)</a>	Send this letter home to introduce families to their new computer science curriculum.
<a href="#">Warm-Up Activities</a>	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.
<a href="#">Program Self-Assessment (Spanish)</a>	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.
<a href="#">Peer Review Resources (Spanish)</a>	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.
<a href="#">Lesson Reflection &amp; Computational Thinking (Spanish)</a>	This guides students in engaging with computational thinking concepts, preparing for discussions, reflecting on lessons, and applying their learning to real-world problem-solving.
<a href="#">Design-Your-Own-Lesson Templates</a>	Empower your students to explore and express their knowledge creatively with our versatile graphic organizer templates. Designed with adaptability and ease of use in mind, these interactive tools transform any subject into an engaging, hands-on learning experience.
These resources and more are found on the <a href="#">CodeHop Resources Page</a> .	