

# Alabama Digital Literacy and Computer Science (Grade 8)

Middle School (75 Contact Hours)

## Course Overview and Goals

Alabama Digital Literacy and Computer Science (Grade 8) builds students' programming foundations and expands their understanding of computing, digital citizenship, and artificial intelligence through hands-on exploration. Students develop coding skills by using sequences, loops, and functions to solve increasingly complex problems. They then examine how AI systems work, practice communicating effectively with AI tools, and critically evaluate AI's growing impact on society and everyday life.

## Learning Environment

This course utilizes a blended classroom approach. The content is a mix of web-based and physical activities. Each module of the course is broken down into lessons. Lessons are composed of short video tutorials, interactive learning pages, quizzes, explorations, simulations, and free-response prompts.

## Technology Requirements

To complete all activities and exercises in this course, students must have access to the 3rd party sites and tools listed here: [Alabama Digital Literacy and Computer Science \(Grade 8\) Course Links](#).

## Prerequisites

The Alabama Digital Literacy and Computer Science (Grade 8) course is designed for complete beginners with no previous background in computer science. The course is highly visual, dynamic, and interactive, making it engaging for those new to computer science.

## More Information

Browse the content of this course at <https://codehs.com/course/27991/overview>.

## Course Breakdown

### Module 1: Karel Adventures 1 (2 weeks/10 hours)

Students learn the basics of JavaScript as they follow Karel the Dog on two fun-filled adventures.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40178>

Topics Covered	<ul style="list-style-type: none"><li>● Sequencing</li><li>● Syntax</li><li>● Commands</li></ul>
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	<ul style="list-style-type: none"> <li>● Debugging</li> <li>● Conditionals</li> <li>● Conditional Statements</li> <li>● While loops</li> </ul>
Example Assignments	<ul style="list-style-type: none"> <li>● Debug #1 <ul style="list-style-type: none"> <li>○ In this program, Karel should move forward 4 times, but there are some errors. Use the error messages to help find and fix the bugs!</li> </ul> </li> <li>● Riley the Troublemaker <ul style="list-style-type: none"> <li>○ Protect the tennis balls from Riley the Rabbit (he's just a gray square in Karel's world) by building a wall around the bucket!</li> </ul> </li> <li>● Asteroid Field <ul style="list-style-type: none"> <li>○ It looks like there is an asteroid field in between Karel and Mars! Help Karel to destroy each asteroid. Program Karel to use if statements and conditions to paint each asteroid (orange square) black.</li> </ul> </li> <li>● Tracking Tracy <ul style="list-style-type: none"> <li>○ Tracy left a trail through the sand. Follow the trail to find Tracy! You can nest different code structures together by putting if statements, if/else statements, and while loops inside each other.</li> </ul> </li> </ul>

## Module 2: Karel Adventures 2 (2 weeks/10 hours)

Students learn the basics of JavaScript as they follow Karel the Dog on another fun-filled adventure.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40274>

Topics Covered	<ul style="list-style-type: none"> <li>● Syntax</li> <li>● Commands</li> <li>● Conditional Statements</li> <li>● Control Statements</li> <li>● Functions</li> <li>● Top-Down Decomposition</li> <li>● Loops</li> </ul>
Example Assignments	<ul style="list-style-type: none"> <li>● Karel Clean Up <ul style="list-style-type: none"> <li>○ For this exercise, you are going to help Karel pick up all the dropped balls to take them to the park and hide them for the scavenger hunt. There are multiple Karel worlds of different sizes, so you will need to use a “while” loop to get you to the end, and inside the while loop you will need an “if” statement to pick up a ball if one is present.</li> </ul> </li> <li>● Find the Park <ul style="list-style-type: none"> <li>○ Karel needs to set up the scavenger hunt in the park. You need to help Karel navigate the city streets to make it to the park. Watch out</li> </ul> </li> </ul>

	<p>for the cars (black squares)! Karel needs to go around these squares on the way to the park. Once at the park, Karel should grab the tennis ball and finish facing east.</p> <ul style="list-style-type: none"> <li>● Making Custom Colors             <ul style="list-style-type: none"> <li>○ For this activity, you are going to create 4 squares with custom colors. The first will be all red, the second all green, and the third all blue. The fourth color can be any color you choose!</li> </ul> </li> <li>● Collect the Tennis Balls             <ul style="list-style-type: none"> <li>○ In this challenge, you will combine all of the coding skills you have learned with Karel to write a program that has Karel pick up all of the tennis balls. Your program should work in all three worlds.</li> </ul> </li> </ul>
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### Module 3: All About Computers (2 weeks/10 hours)

Students will explore how the internet works, compare widely used operating systems such as Windows, Linux, and macOS, gain an understanding of cloud computing, and examine the impact of technology on health and well-being.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40275>

<p>Objectives / Topics Covered</p>	<ul style="list-style-type: none"> <li>● Computers Speak Binary</li> <li>● What is the Internet?</li> <li>● Operating Systems</li> <li>● Computer Hardware</li> <li>● Cloud Computing</li> <li>● Compatibility</li> <li>● Software and Applications</li> <li>● Technology and Your Health</li> </ul>
<p>Example Assignments</p>	<ul style="list-style-type: none"> <li>● Digital Health Awareness             <ul style="list-style-type: none"> <li>○ In this activity, there are four different topics to explore about digital wellness. Click on the HOME button to get started. Then work through the modules in this learning page to discover important facts and ideas about digital wellness.</li> </ul> </li> <li>● AI Safety Comic Strip             <ul style="list-style-type: none"> <li>○ Create a 3-panel comic strip that tells a short story about using AI safely. Your comic should show how a student might run into a problem with AI, and then how they solve it in a safe way. Be sure to answer the questions below in your comic panels, or in your submission!</li> </ul> </li> <li>● How Networks Work             <ul style="list-style-type: none"> <li>○ Explore how modems, routers, devices, and servers work together. Then design your own network!</li> </ul> </li> </ul>

## Module 4: Exploring Digital Citizenship (2 weeks/10 hours)

Students learn about Internet etiquette and how to stay safe on the world wide web.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40186>

<p>Objectives / Topics Covered</p>	<ul style="list-style-type: none"> <li>● Digital Footprint</li> <li>● Cyberbullying</li> <li>● Internet Safety</li> <li>● Privacy &amp; Security</li> <li>● Information Literacy</li> <li>● Copyright</li> <li>● Hacking Ethics</li> <li>● Cyber Hygiene</li> </ul>
<p>Example Assignments</p>	<ul style="list-style-type: none"> <li>● Digital Footprint and Reputation             <ul style="list-style-type: none"> <li>○ <i>Building a Positive Digital Footprint:</i> Spend some time reflecting on you and your friends' social media activity. Give an example of a social media post that builds a positive digital footprint. How does the post build a positive digital footprint? Give an example of a social media post that builds a negative digital footprint. How does the post build a negative digital footprint? Thinking about your digital footprint, are you going to make any changes in what you post on social media? How about what you write to share in a group message? Why or why not?</li> </ul> </li> <li>● Internet Safety             <ul style="list-style-type: none"> <li>○ <i>Scenario: School Stranger:</i> You begin to receive direct messages on Instagram from a person you don't recognize. They claim to go to your school, and they know a lot of information about your classes and teachers. They also follow a lot of your classmates, so you believe them. After a bit, they start asking questions about you and your friends. What steps should you take to respond to this situation?</li> </ul> </li> <li>● Information Literacy             <ul style="list-style-type: none"> <li>○ <i>Evaluate the Source 1:</i> Take a look at this resource, and consider the following questions: What evidence do you see that this source is credible? What evidence do you see that makes you question the source's credibility? Is this a credible source?</li> </ul> </li> </ul>

## Module 5: What is AI? (11-15 hours)

In this module, students will build a foundational understanding of artificial intelligence by exploring what AI is, where it appears in everyday life, and how it differs from other technologies. Through examples, discussions, and interactive activities, they'll examine different types of AI systems. Students train their own mini model and design an original AI helper.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40277>

Objectives / Topics Covered	<ul style="list-style-type: none"> <li>● What is AI?</li> <li>● Staying Safe with AI</li> <li>● How AI Learns from Data</li> <li>● Project: Training a Mini-Model</li> <li>● What is Machine Learning?</li> <li>● Types of Machine Learning</li> <li>● Project: Design Your Own AI Helper</li> </ul>
Example Assignments	<ul style="list-style-type: none"> <li>● Train-A-Bot <ul style="list-style-type: none"> <li>○ Design and train a virtual AI bot. Choose what it will learn, decide how much data to give it, and test how fair and accurate it is.</li> </ul> </li> <li>● Unsupervised Learning: Emoji Clusters <ul style="list-style-type: none"> <li>○ Sort the emojis into groups in any way that makes sense, then compare to a computer's groupings.</li> </ul> </li> </ul>
AI Tools/Permissions	<ul style="list-style-type: none"> <li>● <a href="#">ChatGPT/Gemini</a></li> <li>● <a href="#">Neal.fun</a></li> </ul>

### Module 6: Communicating with AI (12-14 hours)

Students will learn how to effectively interact with AI systems by practicing prompt creation, testing chatbot responses, and even fooling AI into giving incorrect responses. Through hands-on projects and guided explorations, they'll see how inputs shape outputs, and how communication strategies can make AI more useful and accurate.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40278>

Objectives / Topics Covered	<ul style="list-style-type: none"> <li>● Communicating with AI</li> <li>● Large Language Models (LLMs)</li> <li>● Tool Exploration</li> <li>● Challenging Conversations</li> <li>● Prompt Engineering</li> <li>● Prompt Injections</li> <li>● Can You Stump an AI?</li> </ul>
Example Assignments	<ul style="list-style-type: none"> <li>● Train Your Language System Model <ul style="list-style-type: none"> <li>○ Train a model to recognize student-created symbols.</li> </ul> </li> <li>● Stump an AI <ul style="list-style-type: none"> <li>○ Intentionally mislead a chatbot into hallucinating information.</li> </ul> </li> </ul>
AI Tools/Permissions	<ul style="list-style-type: none"> <li>● <a href="#">ChatGPT/Gemini</a></li> </ul>

## Module 7: AI's Impacts on Society (12-14 hours)

Students will investigate how AI affects individuals, communities, and the world at large. Through readings, discussions, and reflection activities, they'll examine topics such as bias, fairness, and ethics in AI, while also considering the benefits, risks, and responsibilities of using AI in everyday life.

Browse the full content of this unit at <https://codehs.com/course/27991/explore/module/40279>

Objectives / Topics Covered	<ul style="list-style-type: none"><li>● AI at Work: Changing Careers</li><li>● Debate: Should AI Replace Certain Jobs?</li><li>● Ethics, Bias, and Risks of AI</li><li>● AI and Accessibility</li><li>● Case Study: AI Tools for Accessibility</li><li>● Advising the Mayor: Impacts of AI</li><li>● Your Future with AI</li></ul>
Example Assignments	<ul style="list-style-type: none"><li>● AI Advisor: Letter to the Mayor<ul style="list-style-type: none"><li>○ Research one area where AI is making an impact on the world and then write a clear, helpful letter to the mayor with recommendations.</li></ul></li><li>● AI for Accessibility<ul style="list-style-type: none"><li>○ Explore real-world AI tools that help people. Find out what problems they solve, who they help, how they work, and why they are important.</li></ul></li></ul>
AI Tools/Permissions	<ul style="list-style-type: none"><li>● <a href="#">ChatGPT/Gemini</a></li></ul>