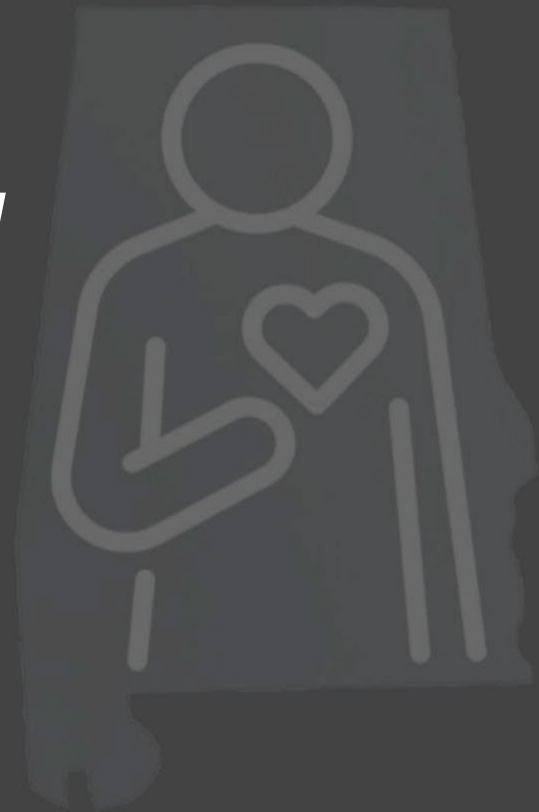# 2025 *Alabama Course of Study: Digital Literacy and Computer Science*

An Introduction and Overview

A Statewide Effort: From Start to Finish

- Dedicated effort from school systems, universities, and industry partners

- Surveying national framework and state needs

- Input from Governor's Advisory Council for Computer Science

- Multiple rounds of feedback

  - Initial feedback (February - March 2025)

  - Draft feedback (August 2025)

  - Upcoming two week period (November 13 - 27)
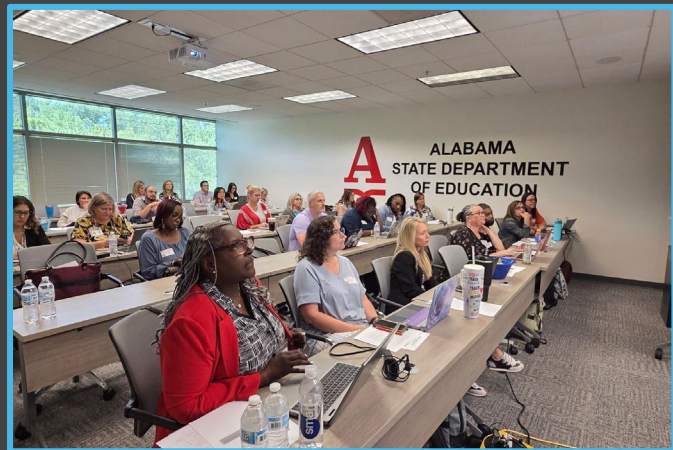
Our Committee and Task Force

Our Team: Committee Members and Expert Reviewers

- Alabama School of Cyber Technology and Engineering
- Alabama School of Math and Science
- Alexander City Schools
- Butler County Schools
- Chilton County Schools
- Cullman City Schools
- Decatur City Schools
- DeKalb County Schools
- Elmore County Schools

- Escambia County Schools
- Gulf Shores City Schools
- Hale County Schools
- Homewood City Schools
- Hoover City Schools
- Jefferson County Schools
- Madison City Schools
- Marengo County Schools
- Montgomery County Schools
- Mountain Brook City Schools

- Muscle Shoals City Schools
- Opelika City Schools
- Orange Beach City Schools
- Pell City Schools
- Perry County Schools
- Roanoke City Schools
- Russellville City Schools
- Shelby County Schools
- Sylacauga City Schools

Conceptual Framework

COMPUTATIONAL THINKING
COMPUTING SYSTEMS
DATA SCIENCE
IMPACT OF COMPUTING
DIGITAL PROFICIENCY

Kindergarten - Grade 5 Overview:
Building Foundational Knowledge in a Digital World

Students will…

- Identify ways technology shapes the world around them.

- Begin crafting digital literacy skills.

- Establish a foundational understanding of basic computer science concepts.

- Develop and strengthen their problem-solving abilities.

Kindergarten - Grade 2 Emphases

Theme	Summary of Student Learning
Computational Thinking	Dissect problems into steps, recognize patterns, and use logical thinking to create simple plans or solutions.
Data Science	Exploring how information can help make decisions and solve problems in everyday situations.
Computing Systems	Identifying types and functions of basic computing devices. Investigating how hardware and software work together. Describing how to use devices responsibly and correctly.
Impact of Computing	Identifying ways in which computers are used in many places. Explaining how technology helps people and how users must be responsible, safe, and kind when using technology.
Digital Proficiency	Gaining comfort with and developing skills using age-appropriate digital tools to create, communicate, and explore. Describing how individuals are part of society in a digital world.

Grades 3 - 5 Emphases

Theme	Summary of Student Learning
Computational Thinking	Applying structured problem-solving strategies to write and debug algorithms. Evaluating and creating representations of information that help reframe and clarify real-world challenges.
Data Science	Collecting, organizing, and interpreting data as they develop the ability to draw conclusions and make informed decisions based on their analyses.
Computing Systems	Developing deeper insights into how devices and software interact. Utilizing a variety of computing tools strategically to solve problems and complete tasks efficiently.
Impact of Computing	Demonstrating a growing awareness of how technology shapes behavior, communication, and society. Reflecting on ethical use, digital security, and the responsibilities that come with being part of a digital world.
Digital Proficiency	Researching and communicating tools effectively as they collaborate with others to create digital artifacts and responsibly exchange information in digital spaces.

Grades 6 - 8 Overview:
Growing Independence in a Digital World

Students will…

- Begin shaping their global online presence.
- Deepen digital literacy skills and explore digital citizenship.

- Develop computer science skills.
- Establish balance between technical proficiency and responsible technology use.

Grades 6 - 8 Emphases

Theme	Summary of Student Learning
Computational Thinking	Strengthening problem-solving skills using decomposition, abstraction, and debugging. Modifying, writing, and improving their own algorithms.
Data Science	Utilizing effective and appropriate means to analyze data and connect what they learn about data and its patterns to make informed decisions and gain a deeper understanding of AI.
Computing Systems	Deepening their understanding of how networks operate. Exploring cybersecurity by identifying threats, practicing safe online behavior, and developing strategies to protect data and devices.
Impact of Computing	Analyzing how technology affects and shapes society. Evaluating emerging technologies. Understanding the legal and ethical responsibilities involved in using technology.
Digital Proficiency	Evaluating digital content for credibility and citing sources. Reflecting on their own digital lives to understand how technology affects their wellbeing.

Grades 9-12 Overview:Preparing for the Future
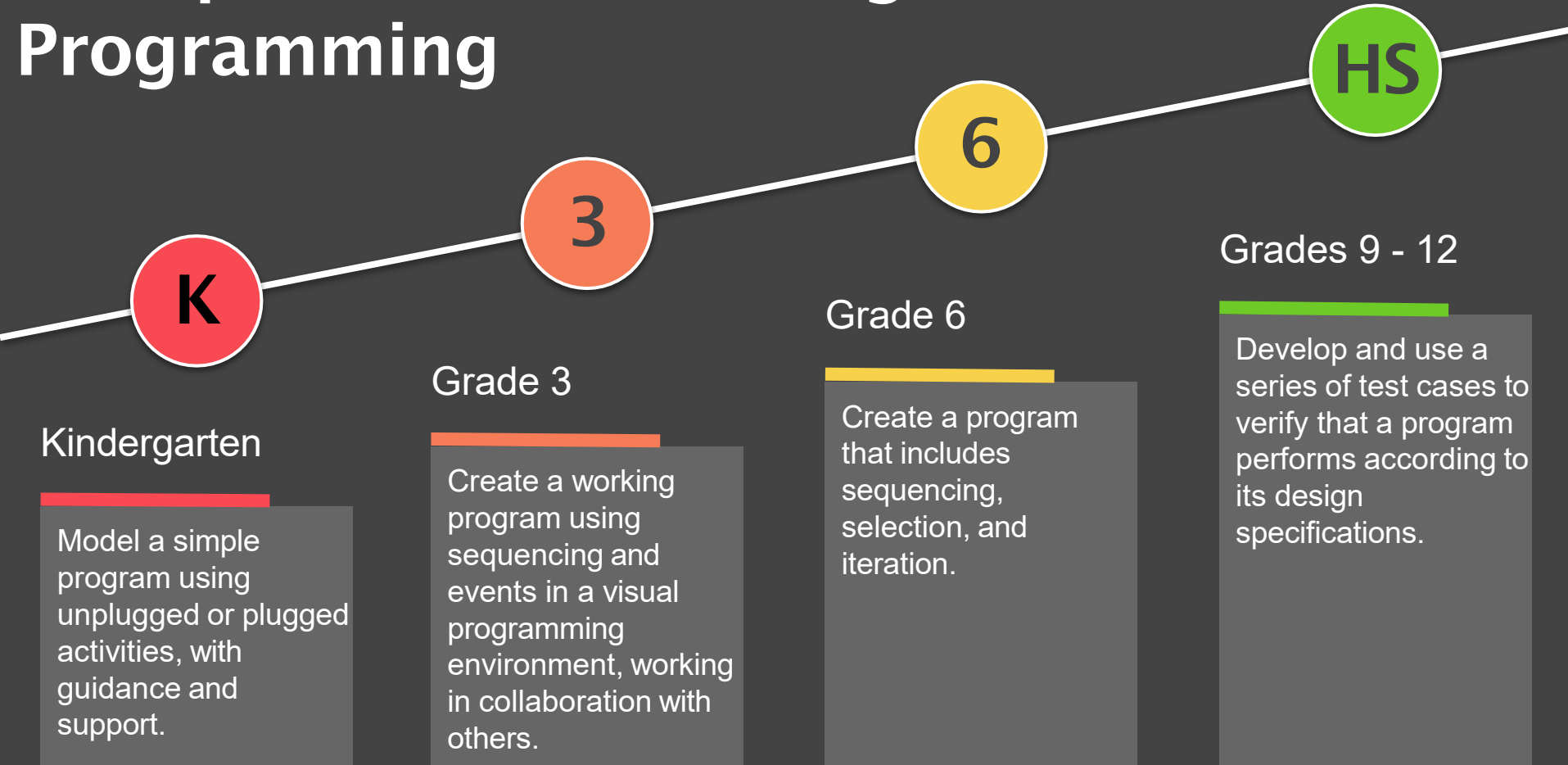
Students will…

- Prepare for post-secondary education and future careers.

- Refine their skills and take greater ownership of their learning.

- Engage in more complex academic challenges.

- Balance independence with collaboration.

- Develop essential skills in problem-solving, leadership, and communication.

- Develop proficiency in the use of emerging technologies, including AI.

Grades 9 – 12 Emphases

Theme	Summary of Student Learning
Computational Thinking	Dissecting complex problems, designing algorithmic solutions, and applying programming concepts to simulate and solve real-world challenges.
Data Science	Collecting, organizing, and interpreting data using appropriate tools to generate meaningful insights and make informed decisions.
Computing Systems	Analyzing how hardware, software, and networks work together, evaluating system performance, and troubleshooting issues in modern digital environments.
Impact of Computing	Examining the ethical, legal, and societal implications of computing technologies. Exploring how innovations shape access, fairness, and global interaction.
Digital Proficiency	Demonstrating responsible, adaptive, and secure use of digital tools to communicate, collaborate, and create effectively in dynamic digital contexts.

Example of Standards Progression: Programming

HS

6

3

K

Grades 9 - 12

Grade 6

Grade 3

Kindergarten

Model a simple program using unplugged or plugged activities, with guidance and support.

Create a working program using sequencing and events in a visual programming environment, working in collaboration with others.

Create a program that includes sequencing, selection, and iteration.

Develop and use a series of test cases to verify that a program performs according to its design specifications.

Questions? Concerns? General Comments?