



# Louisiana Computer Science: 3rd Grade Course Syllabus

One Year for Elementary School, 36 Hours

## Course Overview and Goals

The Louisiana Computer Science: 3rd Grade 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 30 required class sessions across five standards-aligned units, plus optional lessons in math and science, for a total of roughly 40 class sessions of 45 minutes each — a full year of instruction when taught once per week. The units follow the categories of the Louisiana computer science standards, and teaching Units 1 through 5, Computing Systems through Impacts of Computing, is what is required to fully meet those standards. The optional Thinking Across Disciplines lessons in math and science can be taught in any order and integrated throughout the school year as needed.

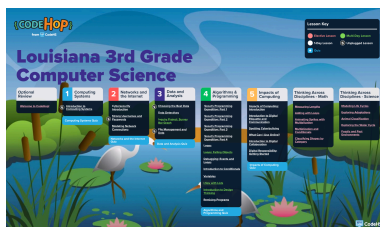
**Standards Alignment Note:** Lessons that address a specific standard list it in bold in parentheses after the lesson title. Lessons without a standards tag support spiral review, practice, or enrichment.

**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.

**Assessments:** Some units conclude with a brief 5 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/28979/overview>.



A clickable PDF can be found at <http://codehs.com/LA-CSRoadmaps>.

## Course Breakdown

### Optional Review

An optional introductory lesson that helps students get comfortable logging in and moving around the CodeHop Playground. It can be taught on its own or used as a warm-up right before a full lesson.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"><li>• Log in to a CodeHop account</li><li>• Navigate the CodeHop Playground</li><li>• Explore block-based coding tools</li></ul> |
| Lessons                           | <b>Welcome to CodeHop!</b> <ul style="list-style-type: none"><li>• Log in and explore the CodeHop Playground before beginning the course.</li></ul>                |

### Unit 1: Computing Systems (1 lesson)

Students identify the parts of a computing system and how they work together. They also practice recognizing and solving simple hardware and software problems.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"><li>• Identify the parts of a computing system</li><li>• Describe the function of hardware and software</li><li>• Match hardware and software to a task</li><li>• Solve simple hardware and software problems</li></ul>         |
| Lessons                           | <b>Introduction to Computing Systems (E.CS.1A, E.CS.1B, E.CS.1C, E.CS.2A)</b> <ul style="list-style-type: none"><li>• Identify parts of a computing system and solve simple hardware and software problems.</li></ul> <b>Computing Systems Quiz (5 questions)</b> |

### Unit 2: Networks and the Internet (3 lessons)

Students learn what cybersecurity means and how to recognize online threats. They build strong usernames and passwords and model how messages travel between devices on a network.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"><li>• Recognize common online threats</li><li>• Build a strong username and password</li><li>• Explain how a strong password protects information</li><li>• Model how messages move between devices</li></ul>                                                                                                                                                                                                                                                                                                                                             |
| Lessons                           | <b>Cybersecurity Introduction (E.NI.2B)</b> <ul style="list-style-type: none"><li>• Recognize online threats and identify ways to stay safe online.</li></ul> <b>Strong Usernames and Passwords (E.NI.2A)</b> <ul style="list-style-type: none"><li>• Build a strong username and password and explain how each keeps information safe.</li></ul> <b>Modeling Network Connections (E.NI.1A)</b> <ul style="list-style-type: none"><li>• Program a model showing how data travels from one device to another across a network.</li></ul> <b>Networks and the Internet Quiz (5 questions)</b> |

### Unit 3: Data and Analysis (5 lessons)

Students evaluate data for reliability, analyze it to draw conclusions, and run an inquiry project that displays their own survey results. They also learn how digital data is sized and stored.

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| Objectives<br>/ Topics | <ul style="list-style-type: none"><li>• Evaluate data for reliability</li><li>• Analyze data to draw conclusions and make predictions</li></ul> |
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| Covered | <ul style="list-style-type: none"> <li>Follow the inquiry process to investigate a question</li> <li>Explain where digital data is stored and how much space it takes</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lessons | <p><b>Choosing the Best Data (E.DA.1B)</b></p> <ul style="list-style-type: none"> <li>Compare data sources and choose the one that best fits a question.</li> </ul> <p><b>Data Detectives (E.DA.4B, E.DA.5A, E.DA.5B)</b></p> <ul style="list-style-type: none"> <li>Evaluate data for reliability, then analyze it to draw conclusions and make predictions.</li> </ul> <p><b>Inquiry Project: Survey Bar Graph (2 classes   E.DA.1A, E.DA.2A, E.DA.2B, E.DA.4A)</b></p> <ul style="list-style-type: none"> <li>Follow the inquiry process and modify a program to display survey results as a bar graph.</li> </ul> <p><b>File Management and Data (E.DA.3A, E.DA.3B)</b></p> <ul style="list-style-type: none"> <li>Explain how different types of digital data vary in size and where each can be stored.</li> </ul> <p><b>Data and Analysis Quiz (5 questions)</b></p> |

#### Unit 4: Algorithms and Programming (15 lessons)

Students follow a four-part story-driven programming expedition, then build skills with loops, conditionals, variables, and lists. They finish by working through the design thinking process and remixing a classmate's program with proper credit.

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| Objectives / Topics Covered | <ul style="list-style-type: none"> <li>Program sequences, loops, and conditionals</li> <li>Create and change the value of a variable</li> <li>Decompose a program to find and fix bugs</li> <li>Apply the design thinking process to a real problem</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lessons                     | <p><b>Scout's Programming Expedition: Part 1</b></p> <ul style="list-style-type: none"> <li>Use basic programming commands to make a sprite move and talk.</li> </ul> <p><b>Scout's Programming Expedition: Part 2</b></p> <ul style="list-style-type: none"> <li>Add sprites and build a sequence to animate a story.</li> </ul> <p><b>Scout's Programming Expedition: Part 3</b></p> <ul style="list-style-type: none"> <li>Animate a story using loops, events, looks, and motion blocks.</li> </ul> <p><b>Scout's Programming Expedition: Part 4</b></p> <ul style="list-style-type: none"> <li>Complete the animated story using events, looks, and motion blocks.</li> </ul> <p><b>Loops</b></p> <ul style="list-style-type: none"> <li>Explain how a loop repeats instructions and use loops in a program.</li> </ul> <p><b>Loops: Falling Objects (2 classes   E.AP.1B)</b></p> <ul style="list-style-type: none"> <li>Compare the advantages and disadvantages of different loop algorithms in one program.</li> </ul> <p><b>Debugging: Events and Loops (E.AP.3A, E.AP.4B)</b></p> <ul style="list-style-type: none"> <li>Decompose a program to debug it and make it run as intended.</li> </ul> <p><b>Introduction to Conditionals (E.AP.2A)</b></p> <ul style="list-style-type: none"> <li>Explain what a conditional is and build a program using if/then blocks.</li> </ul> <p><b>Variables</b></p> <ul style="list-style-type: none"> <li>Explain what a variable is, then create one and change its value in a program.</li> </ul> <p><b>I-Spy with Lists (2 classes   E.AP.1A)</b></p> <ul style="list-style-type: none"> <li>Build an I-Spy style activity using variables and lists.</li> </ul> <p><b>Introduction to Design Thinking (2 classes   E.AP.3B, E.AP.4A, E.AP.4C, E.AP.4E, E.AP.4F)</b></p> <ul style="list-style-type: none"> <li>Use the design thinking process to make a tool accessible to more users.</li> </ul> <p><b>Remixing Programs (E.AP.4D)</b></p> <ul style="list-style-type: none"> <li>Develop code from a classmate's algorithm and give appropriate credit to the original creator.</li> </ul> <p><b>Algorithms and Programming Quiz (5 questions)</b></p> |

#### Unit 5: Impacts of Computing (6 lessons)

Students examine how technology and culture shape each other, and what it takes to participate responsibly online. They practice digital etiquette, spot cyberbullying, attribute sources, and collaborate digitally.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"> <li>• Explain how technology and culture influence each other</li> <li>• Demonstrate proper digital etiquette online</li> <li>• Recognize cyberbullying and respond appropriately</li> <li>• Provide proper attribution for online sources</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Lessons                           | <p><b>Impacts of Computing: Introduction (E.IC.1A)</b></p> <ul style="list-style-type: none"> <li>• Build a project comparing a past technology to its present version and weigh its impacts.</li> </ul> <p><b>Introduction to Digital Etiquette and Communication (E.IC.2A)</b></p> <ul style="list-style-type: none"> <li>• Demonstrate proper digital etiquette when communicating in an online community.</li> </ul> <p><b>Spotting Cyberbullying (E.IC.2B)</b></p> <ul style="list-style-type: none"> <li>• Recognize examples of cyberbullying and identify age-appropriate ways to respond.</li> </ul> <p><b>What Can I Use Online? (E.IC.3A)</b></p> <ul style="list-style-type: none"> <li>• Search for information online and provide proper attribution to sources.</li> </ul> <p><b>Introduction to Digital Collaboration (E.IC.3B)</b></p> <ul style="list-style-type: none"> <li>• Collaborate digitally with others to complete a program promoting a community event.</li> </ul> <p><b>Digital Responsibility: Getting Started (E.IC.3C)</b></p> <ul style="list-style-type: none"> <li>• Identify online dangers and demonstrate responsible choices that keep students safe.</li> </ul> <p><b>Impacts of Computing Quiz (5 questions)</b></p> |

### Thinking Across Disciplines - Math (Optional)

Optional lessons that apply coding to third grade math content, programming interactive games and animations that model measurement, place value addition, multiplication, and shape classification. These can be taught in any order and integrated throughout the year as needed.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"> <li>• Measure lengths and plot data on a number line</li> <li>• Use loops to add multi-digit numbers by place value</li> <li>• Animate sprites using multiplication</li> <li>• Classify quadrilaterals by their properties</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Lessons                           | <p><b>Measuring Lengths</b></p> <ul style="list-style-type: none"> <li>• Build an interactive game where the user measures lengths and plots the data on a number line.</li> </ul> <p><b>Adding with Loops</b></p> <ul style="list-style-type: none"> <li>• Use loops to repeat commands and add multi-digit whole numbers based on place value.</li> </ul> <p><b>Animating Sprites with Multiplication</b></p> <ul style="list-style-type: none"> <li>• Use multiplication with loops and wait blocks to animate sprites.</li> </ul> <p><b>Multiplication and Conditionals</b></p> <ul style="list-style-type: none"> <li>• Build a program that uses if/then blocks to review multiplication facts.</li> </ul> <p><b>Classifying Shapes by Category</b></p> <ul style="list-style-type: none"> <li>• Use events to program a tool that classifies quadrilaterals by their properties.</li> </ul> |

### Thinking Across Disciplines - Science (Optional)

Optional lessons that use programming to explore third grade science concepts, including life cycles, adaptations, animal classification, the water cycle, and fossils. These can be taught in any order and integrated throughout the year as needed.

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| Objectives<br>/ Topics<br>Covered | <ul style="list-style-type: none"> <li>• Model a life cycle using message events</li> <li>• Explain how adaptations help animals survive</li> <li>• Model how animals are sorted into groups</li> <li>• Use conditionals and loops to interpret science data</li> </ul> |
| Lessons                           | <b>Modeling Life Cycles</b>                                                                                                                                                                                                                                             |

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|  | <ul style="list-style-type: none"> <li>• Program a model of a frog's life cycle using broadcast message events.</li> </ul> <p><b>Exploring Adaptations</b></p> <ul style="list-style-type: none"> <li>• Build an interactive program showing how adaptations help animals survive in their habitats.</li> </ul> <p><b>Animal Classification</b></p> <ul style="list-style-type: none"> <li>• Use events to model how animals are sorted into groups.</li> </ul> <p><b>Exploring the Water Cycle</b></p> <ul style="list-style-type: none"> <li>• Explain the phases of the water cycle using broadcast message events.</li> </ul> <p><b>Fossils and Past Environments</b></p> <ul style="list-style-type: none"> <li>• Use conditionals and loops to model interpreting fossil evidence of past environments.</li> </ul> |
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## Louisiana Computer Science: 3rd Grade Supplemental Materials

| Resources                                                                          | Description                                                                                                                                                                                                                                                               |
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| <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> . |                                                                                                                                                                                                                                                                           |