2nd Grade Digital Literacy & AI Course Syllabus

One Year for Elementary School, 17 Hours

Course Overview and Goals

The **Digital Literacy & AI Course** introduces students to essential digital skills and foundational computer science concepts needed to thrive in today's technology-driven world. Throughout the course, students build problem-solving skills and responsible technology practices while engaging in hands-on activities and real-world applications. They will develop an understanding of artificial intelligence, digital tools, online safety, and emerging technologies, building a strong foundation in digital literacy. This flexible course can be taught in any order to meet the needs of diverse classrooms.

Learning Environment: This course is designed to be teacher-led, with ready-to-use lesson plans that follow a structured format: **Introduction, Guided Practice, Independent Practice, Extension, and Reflection**. Lessons are built with spiral review to reinforce key concepts and culminate in engaging projects to showcase student understanding.

The lessons are delivered in an **"I do, we do, you do"** format, ensuring a gradual release of responsibility and fostering confidence in students as they learn. Teachers can adapt the content to fit their schedule and instructional needs. 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. The course includes a total of **17 lessons**, each approximately 45 minutes long.

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/28005/explore

A clickable PDF can be found at https://codehs.com/DigLit_Roadmap

Course Breakdown

Unit 1: Getting Started (2 lessons)

In this module, students learn to log in and navigate the CodeHop Playground and are introduced to basic programming concepts by using the CodeHopJr interface to create interactive scenes with characters.

Objectives / Topics Covered	● Log in and navigate the CodeHop Playground independently. ● Explore the programming interface to create a simple programmed scene with characters.
Lessons	**Welcome to CodeHop!** (optional) ● Learn how to log in and use the CodeHop Playground. This short introductory lesson can be used on its own or right before a full lesson. **Introduction to Programming** ● Navigate the programming interface to create a scene with characters.

Unit 2: Computing Systems (5 lessons)

In this module, students explore how computer components connect and work together, and how computers communicate across networks. Students explore common productivity tools by creating documents, spreadsheets, and presentations. Students build a deeper understanding of hardware relationships and the infrastructure behind the Internet.

Objectives / Topics Covered	● Identify and describe how computer hardware components connect and interact. ● Create a document using word processing tools. ● Use a spreadsheet to organize and present data. ● Design a simple presentation. ● Collaborate digitally on a shared project. ● Explain how computers communicate through networks and the Internet.
Lessons	**Computer Basics: Connections** (Unplugged | E2-SYS-HW-11) ● Learn what a computer is, how we use it, and what to do when it doesn't work. They will also be able to identify input, output, hardware, and software, and explain how they work together. **Exploring Word Processing** ● Use word processing tools to create a document explaining their favorite season of the year. **Exploring Spreadsheets** ● Use spreadsheet software to review and present data on class pets and favorite colors. **Exploring Presentations** ● Use presentation software to create a presentation on their favorite things. **Exploring Computer Networks** ● Describe how networks connect devices to share information and model the sending and receiving of information using message blocks.

Unit 3: Safety & Responsibility (2 lessons)

In this module, students practice safe online behavior and responsible technology use. Through unplugged activities and real-world scenarios, students develop the digital citizenship skills needed to navigate technology safely and ethically.

Objectives / Topics Covered	● Practice safe online behavior, including protecting personal information. ● Demonstrate responsible and respectful technology use in digital environments.
Lessons	**Responsible Digital Citizens** (Unplugged | E2-SYS-SE-12) ● Explain what it means to be a responsible digital citizen, including understanding digital footprints, discussing cyberbullying, and knowing how to report concerns. **Practicing Responsible Technology Use** (Unplugged | E2-SYS-IM-13) ● Demonstrate ways to use technology safely and responsibly.

Unit 4: Impacts of Computing (3 lessons)

In this module, students explore how computing shapes industries, careers, and society. Students discover real-world applications of computer science and examine how technology has transformed the world over time.

Objectives / Topics Covered	● Describe how computer science is used across different industries and careers. ● Explain how computing has changed society and examine its broad impacts.
Lessons	**Impacts of Computing: Changing World** (E2-SOC-HI-14, E2-SOC-HU-15) ● Identify examples of computing devices in their daily lives and use programming to explain how technology has changed the way people live, work, and play. **Careers in CS: Coding for Fashion-Retail** (E2-SOC-CE-16) ● Explain how coding helps create and improve fashion designs and will create a program to design and animate a fashion character.

Unit 5: Data & Analysis (3 lessons)

In this module, students collect, organize, analyze, and present data. Students explore how files and data are stored digitally, and conduct independent research to create data-driven programs that communicate their findings.

Objectives / Topics Covered	● Collect, organize, and analyze data to draw conclusions and identify patterns. ● Understand how digital files are organized and stored. ● Conduct independent research and present findings through a program.
Lessons	**Choice Research** (2 classes | E2-DAT-IM-10) ● Collect and assess sources to answer a research question and communicate their findings visually. **Data Explorers** (E2-DAT-DC-08, E2-DAT-DI-09, E2-DAT-IM-10) ● Develop an investigative question and collect data using a survey. Then, students will create a program to present their collected data visually. **Managing Data Storage and Files** ● Develop an investigative question and collect data using a survey. Then, students will create a program to present their collected data visually.

Unit 6: AI Exploration (2 lessons)

In this module, students explore how artificial intelligence is used in everyday life and experience machine learning firsthand. Students discover how AI systems learn from examples to recognize patterns and make predictions.

Objectives / Topics Covered	● Identify ways AI is used to help people in everyday life. ● Explain how machine learning systems learn from data to recognize patterns.
Lessons	**How AI Helps Us** (Unplugged | E2-SOC-HU-15) ● Explain how AI assistants answer questions by observing a demonstration and describe how AI helps people by solving problems and changing jobs. **Machine Learning: AutoDraw** (E2-ALG-ML-02) ● Describe how AutoDraw uses AI and a classifier to recognize and suggest drawings.

2nd Grade 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**.	