Unit 8: Advanced Topics (Grades 10-12)

Content Area: **Computer Science**
Course(s):
Time Period: **Marking Period 4**
Length: **4-6 Weeks**
Status: **Published**

Summary

Students have been introduced to many methods and processes for building websites. This unit provides the students an opportunity to expand that knowledge and understanding in a direction that they choose. Students develop a long term goal with assistance from the teacher, and break the process down into attainable weekly short term goals. Those goals are revisited each week to adjust for roadblocks and technical issues. The unit culminates in a presentation by the student in front of their peers and invited staff members.

Revision Date: July 2026

Information Literacy: This unit challenges students to locate, evaluate, and use information effectively. Information literacy includes, but is not limited to, digital, visual, media, textual, and technological literacy. Lessons may include the research process and how information is created and produced; critical thinking and using information resources; research methods, including the difference between primary and secondary sources; the difference between facts, points of view, and opinions, accessing peer-reviewed print and digital library resources; the economic, legal, social, and ethical issues surrounding the use of information.

1	Fostering an Inclusive Computing and Design Culture
1	Make sense of problems and persevere in solving them
1.2.12prof.Cr1	Generating and conceptualizing ideas.
L.SS.11–12.1	Demonstrate command of the system and structure of the English language when writing or speaking.
2	Reason abstractly and quantitatively
2	Collaborating Around Computing and Design
1.2.12prof.Cr1a	Formulate multiple ideas using generative methods to develop artistic goals and solve problems in media arts creation processes.
L.KL.11–12.2	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
5	Use appropriate tools strategically
3	Recognizing and Defining Computational Problems
6	Attend to precision
4	Developing and Using Abstractions
5	Creating Computational Artifacts

6	Testing and Refining Computational Artifacts
7	Communicating About Computing and Design
8.2.12.EC.1	Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made.

Essential Questions/Enduring Understandings

- How do you prepare a proposal for a new path in web design?
- How do you overcome roadblocks in self directed learning?
- How do you develop a presentation on the progress towards a goal when the entire goal may not have been achieved?

Objectives

- Students Will Know...
    - how to develop long and short term goals in order to build a proposal to continue learning new web design techniques.
    - how to plan out learning materials to discover new trends & techniques in web site development.

- Students Will be Skilled At...
    - independently studying and self guided learning.
    - keeping up with self proposed deadlines and reflecting on progress to modify future goals.

Learning Plan

Have students decide on long term goal for this project. Utilize previous year's projects to give guidance.

Use the project planning format document to set short term goals for the coming weeks.

Meet weekly with "check-ins" to help students self reflect on their progress and make adjustments on future goals.

Presentations at the end of the unit to display progress & completed goals.

Assessment

Assessments

- Formative: Daily assessments using examples from class notes and CodeHS.com, AP Classroom/Albert Checks for Understanding

- Summative: Teacher-created assessments/projects and CodeHS Computer Science Projects, AP Classroom/Albert Unit Assessments

- Benchmark: Check for understanding benchmark assessments on CodeHS, AP Classroom/Albert/Khan Academy Diagnostics

- Alternative Assessments: Student-centered activities such as a doorbell coding project, game design projects, and other activities listed below:

- Create a website-based resume.
- Present the resume in a mock interview based setting.
- Receive feedback from rubrics and comments from students/teachers/administration.
- Make adjustments and complete self assessment.
- Answer the essential questions.

- Developing a plan for long and short term goals
- Weekly check in meetings
- Presentation on results & progress

Materials

Core instructional materials: Core Book List

Supplemental materials:

- District Approved Textbook
- HTML5 Resources
- CSS3 Resources
- Internet Access
- Khan Academy
- Codeacademy
- Codehs
- Computers

Integrated Accommodation and Modifications

Possible accommodations/modification for Web Design 2