Unit 6: Analyzing AI Tools

Content Area: **Computer Science**
Course(s):
Time Period: **Marking Period 4**
Length: **20-25 days**
Status: **Published**

Brief Summary of Unit

In this unit, students examine how artificial intelligence is transforming web development and website management. Building on their knowledge of HTML, CSS, hosting, accessibility (ADA/WCAG), Google Analytics, and content management systems (codeHS, github, etc), students will evaluate AI-powered tools for website design, coding assistance, content creation, accessibility testing, search engine optimization (SEO), analytics, and debugging. Students will analyze the strengths, limitations, ethical considerations, and practical applications of AI while using industry-standard workflows to improve existing websites. By the end of the unit, students will make informed decisions about when AI enhances productivity and when human expertise remains essential.

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P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
P.7	Plan education and career paths aligned to personal goals.
P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
P.9	Work productively in teams while using cultural/global competence.
	Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints.
8.2.12.ED.5	Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics).
8.2.12.ED.6	Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor).
8.2.12.ITH.1	Analyze a product to determine the impact that economic, political, social, and/or cultural factors have had on its design, including its design constraints.
	Engineers use science, mathematics, and other disciplines to improve technology. Increased collaboration among engineers, scientists, and mathematicians can improve their work and designs. Technology, product, or system redesign can be more difficult than the original design.
1.2.12prof.Cn10b	Explain and demonstrate the use of media artworks to expand meaning and knowledge, and create cultural experiences such as learning and sharing through online environments.
8.2.12.ETW.1	Evaluate ethical considerations regarding the sustainability of environmental resources that are used for the design, creation, and maintenance of a chosen product.
8.2.12.EC.2	Assess the positive and negative impacts of emerging technologies on developing countries and evaluate how individuals, non-profit organizations, and governments have

	responded.
8.2.12.EC.3	Synthesize data, analyze trends, and draw conclusions regarding the effect of a technology on the individual, culture, society, and environment and share this information with the appropriate audience.

Essential Questions / Enduring Understandings

Essential Questions:

- How can AI improve the work of a webmaster?
- When should AI be trusted, and when should its output be verified?
- How does AI impact website accessibility, usability, and search engine optimization?
- What ethical and legal considerations should web professionals consider when using AI?
- How can AI be incorporated into a professional web development workflow?

Enduring Understandings:

- AI is a tool that enhances, but does not replace, human decision-making and technical expertise.
- AI-generated code and content require testing, validation, and revision.
- Accessibility, privacy, copyright, and ethical considerations remain the responsibility of the webmaster.
- Different AI tools have different strengths and limitations depending on the task.
- Professional developers use AI as part of an iterative development process rather than a complete solution.

Objectives

Students Will Know:

- The role of AI in modern web development and website management.
- The strengths and limitations of AI tools for coding, design, content creation, accessibility, SEO, and analytics.
- The importance of verifying AI-generated content, code, and recommendations.
- Ethical, legal, and privacy considerations related to the use of AI.
- How AI fits into a professional web development workflow.

Students Will be Skilled at:

- Evaluating and comparing AI tools for specific webmaster tasks.
- Using AI to generate, revise, and debug HTML and CSS.
- Analyzing AI-generated content for accuracy, accessibility, and quality.
- Interpreting website analytics and using AI to identify opportunities for improvement.
- Testing AI-generated solutions against web standards and accessibility guidelines.
- Making informed decisions about when to use AI and when human judgment is necessary.
- Communicating and justifying recommendations for the effective and responsible use of AI in web

development.

Learning Plan

- Introduction to AI
- AI for Coding and Debugging
- AI for Content and SEO
- AI for Accessibility and User Experience
- AI and Website Analytics
- Ethics and Professional Practice

Assessment

Assessments

- Formative: Daily assessments using AI tool comparison charts, exit tickets, class discussions, code review exercises, reflection journals, peer feedback.
- Summative: Teacher-created performance assessments, presentations and reflection essays.
- Benchmark: Check for understanding benchmark assessments.
- Alternative Assessments: student centered presentations or digital portfolios on comparisons of AI tools' use and purpose, prompt engineering, reflections.
- CHS Website updates

Materials

Core instructional materials: Core Book List

Supplemental materials:

- CodeHS
- GitHub
- WAVE - Web Accessibility Evaluation Tool - https://wave.webaim.org/

- Web Browsers with Developer Tools

Integrated Accommodation and Modifications

Web Team Accommodation and Modifications