Unit 7: Ethical Use of AI

Content Area: **Computer Science**
Course(s):
Time Period: **Marking Period 1**
Length: **2-3 Weeks**
Status: **Published**

Summary

In this unit, students will explore the ethical and practical implications of using artificial intelligence tools to assist with programming. As AI tools like GitHub Copilot and ChatGPT become more capable of generating code, it is important for aspiring computer scientists to understand both the benefits and the limitations of relying on AI. Students will examine how these tools can support learning and productivity, while also discussing issues such as academic integrity, authorship, data privacy, and the potential for over-reliance. Through hands-on activities and discussions, students will critically evaluate when and how it's appropriate to use AI in the coding process, and reflect on what it means to "learn to code" in an era where machines can write code for us.

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ELA.RL.CR.11–12.1	Accurately cite strong and thorough textual evidence and make relevant connections to strongly support a comprehensive analysis of multiple aspects of what a literary text says explicitly and inferentially, as well as interpretations of the text; this may include determining where the text leaves matters uncertain.
CS.9-12.DA	Data & Analysis
CS.9-12.EC	Ethics & Culture
CS.9-12.IC	Impacts of Computing
CS.9-12.NT	Nature of Technology
CS.9-12.ETW	Effects of Technology on the Natural World
CS.9-12.ITH	Interaction of Technology and Humans
WRK.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
WRK.K-12.P.6	Model integrity, ethical leadership and effective management.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
TECH.9.4.12.DC	Digital Citizenship
TECH.9.4.12.DC.3	Evaluate the social and economic implications of privacy in the context of safety, law, or ethics (e.g., 6.3.12.HistoryCA.1).
TECH.9.4.12.IML	Information and Media Literacy
	Digital tools such as artificial intelligence, image enhancement and analysis, and sophisticated computer modeling and simulation create new types of information that may have profound effects on society. These new types of information must be evaluated carefully.

Network connectivity and computing capability extended to objects, sensors and everyday items not normally considered computers allows these devices to generate, exchange, and consume data with minimal human intervention. Technologies such as Artificial Intelligence (AI) and blockchain can help minimize the effect of climate change.

Essential Questions / Enduring Understandings

Essential Questions:

- What does it mean to "learn to code" in a world where AI can write code for you?
- When is it appropriate, or inappropriate, to use AI tools while coding?
- How can relying on AI affect the way we think, learn, and solve problems in computer science?
- What responsibilities do programmers have when using AI-generated code in school, work, or public projects?
- What are the risks of using AI to write code?
- How can we use it responsibly?

Enduring Understanding:

- Learning to code is not just about producing working programs. It's about developing problem-solving skills, logic, and creativity that AI tools cannot replace.
- AI can be a valuable tool in the coding process, but using it ethically means understanding its role, giving proper credit, and avoiding over-reliance.
- Responsible coders critically evaluate AI-generated code, test it for accuracy, and take ownership of their work.
- Using AI in computer science requires balancing efficiency with ethical concerns such as authorship, fairness, and the impact on human learning and employment.
- Understanding the strengths and limitations of AI helps programmers use it wisely, ensuring that technology supports learning and innovation rather than replacing it.

Objectives

Students will know:

- about AI tools
- about rules, norms and laws that evolve around the use of AI in software development and education
- about the benefits of logical reasoning, problem solving and creativity over producing working code

Students will be skilled at:

- using AI tools to generate, test and revise code
- evaluating results from AI tools and correcting errors
- explaining the social and ethical implications of AI generated code such as bias, automation and accountability

Learning Plan

- Preview the essential questions and connect to learning throughout the unit.
- Research on social, ethical, and legal issues pertaining to AI use.
- Discussion of the various scenarios revolving around the ethics of AI use and the norms surrounding them.
- Discussion of AI limitations.
- Discussion of AI best practices.
- Discussion on case studies of AI controversy or biases.
- Debate on school/district/state policies regarding AI use.

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 involving real world applications

- Complete quizzes/test: Algorithms, Structure of Programs, Design of Programs
- Be observed by the teacher during individual work on the performance tasks.
- Conduct self-assessments and reflections
- Conduct Peer Evaluations.

Materials

- Core instructional materials: Core Book List

- Supplemental materials: CodeHS, computers, and reference books.

Integrated Accommodations and Modifications

See Linked Document.