Introduction to AI for Middle School (1 Month)

Course Overview

(10 Contact Hours)

Course Overview and Goals

With Artificial Intelligence becoming integral to many industries, exposing students to AI prepares them for a world where AI literacy will be an essential skill – whether they are building AI technologies or simply using it. In this ten-hour exploratory course, students dive into a variety of AI projects to help expose and prepare them for the future by equipping them with crucial skills in our technology-driven world. Learning and working with AI helps to enhance problem-solving skills, promote ethical understanding, spark new creativity, and increase overall digital literacy.

Students will explore the world of Artificial Intelligence by completing ten projects. Students will learn to use AI to generate content, to write effective prompts to generate desired results, and to build their own machine learning model. By the end of the course, students will have a more nuanced understanding of the benefits and challenges associated with AI.

Learning Environment: This course utilizes a blended classroom approach. The content is a mix of web-based and physical activities. Teachers utilize tools and resources provided by CodeHS to leverage time in the classroom and give focused 1-on-1 attention to students.

Technology Requirements

To complete this course, students will need access to the following third-party AI tools:

- ChatGPT, Gemini, and/or Copilot
  Students will need access to an LLM for many of the activities in this course. The activity instructions are designed so they can be completed with ChatGPT, Gemini, Copilot, but other LLMs could work as well.
- Google Teachable Machine
  This tool allows students to create machine learning models without any coding or technical expertise. Without this tool, several lessons will need to be modified.

See the course whitelist for a list of all third-party websites:
codehs.com/lms/course_whitelist/ms-intro-ai

More information: Browse the content of this course at https://codehs.com/course/23297

Project Overviews

Each project will take approximately 45 minutes to an hour to complete. Additionally, most projects include extension ideas to extend the length and depth of the project.

Project	Description
What is AI?	In this project, students will learn the generative power of AI and explore AI's ability to generate text, images, music, and videos.
Communicating with AI	In this project, students will use machine learning models to teach an AI to recognize different language systems, including written letters and sign language. They will explore how different training data affects accuracy.
Machine Learning and Music Classification	In this project, students build a machine learning model that analyzes and classifies music using *Teachable Machine*.
Does AI Know How to Code?	In this project, students will evaluate the programming skills of a large language model AI.
Generative AI	In this project, students will explore the creativity and power of generative AI with both images and text to create a new animal.
Can You Stump an AI?	In this project, students will explore inaccuracies, or hallucinations, of AI programs, and they will try to find a prompt that will cause an inaccurate response.
AI Prompt Engineering with a Historical Figure	In this project, students will practice prompt engineering or crafting prompts to guide an AI Chatbot to produce the most accurate, relevant, and useful responses. They will explore this technique by prompting an AI Chatbot to answer as Albert Einstein or Martin Luther King.
AI and Accessibility	In this project, students will learn about different ways AI is making the world more accessible to everyone. Students will explore alt text generation and will compare their own alt text with alt text generated by an AI.
AI and Music Generation	In this project, students will delve into the intersection of artificial intelligence and music. They will explore various AI tools used in music generation and consider the ethical implications of using AI to generate music.
AI Prompt Injection Exploration	In this project, students explore how images can be used to override the prompt instructions in an AI language model.