AI FOUNDATIONS

CURRICULUM OVERVIEW

13 Lessons
Grades 2-4
Price per semester: 270 euros

<u>Important Note:</u> This is an advanced course. The student who wants to take part should have been in Minecraft Coding <u>at least</u> once.

FRAMEWORK & LEARNING OBJECTIVES

The learning objectives are built on three fundamental pillars:

1. **Understanding AI:** Grasping the core concepts, history, and potential future developments of AI.
2. **Using AI:** Developing practical skills in data literacy, safe and responsible AI tool usage
3. **Evaluating AI:** Cultivating critical thinking skills to assess the ethics, impact, and reliability of AI systems.

By addressing these three areas, AI Foundations aims to create well-rounded AI-literate youth who can navigate and contribute to an increasingly AI-driven world.

Learning Objectives:

Understanding AI	Using AI		Evaluating AI
Define AI • Explain what AI is in simple terms • Identify common AI applications in everyday life	Explore AI Applications • Analyze real-world uses of AI in various fields • Discuss how AI can address global challenges	Develop Coding Skills • Write simple algorithms • Debug basic code • Use loops and conditionals in programming	Evaluate AI's Impact • Discuss how AI is changing different industries • Consider AI's influence on future careers • Reflect on personal experiences with AI

Understand Key AI Concepts • Describe pattern recognition and its role in AI • Explain basic machine learning principles • Identify different types of AI	Practice Data Skills • Collect and organize data for AI use • Interpret simple data visualizations • Use data to make basic predictions	Create AI Projects • Design a simple AI solution for a real-world problem • Collaborate with peers on AI-related tasks • Present AI project ideas effectively	Apply Ethical Thinking • Identify potential biases in AI systems • Discuss responsible AI practice • Consider privacy and safety in AI applications

Lesson Sequence Overview

SESSION	OBJECTIVES	TEACHER WILL	STUDENTS WILL
1*	Students will learn what artificial intelligence is, how AI is created, and how AI works	Explain the foundations of AI (i.e., AI Literacy)	Students will practice identifying ways to detect if information from AI tools is correct.
2*	Students will identify different types of AI tools, recognize how AI is changing the world, and explore ways AI can be used to address global issues.	Provide an overview of old and new types of AI; introduce students to the concept of machine learning	Students will identify a global issue and brainstorm ways that AI tools could be utilized to solve the problem.
3*	Students will explore generative AI and chatbots, how these AI tools help us with tasks, and how to use AI responsibly	Facilitate a discussion around using AI tools responsibly based on the principles of responsible AI	Students will practice creating precise algorithms to train AI and chatbots.
4*	Students will utilize semi-supervised machine learning to recognize patterns on ocelots' coats to compile a dataset for keep track of endangered animals	Introduce artificial intelligence to students and lead the coding activities	Students will code an AI to use current data to compare and match it to a dataset of patterns to track ocelots.
5*	Students will learn how to use machine learning algorithms to detect anomalies in geographical data	Introduce artificial intelligence to students and lead the coding activities	Students will code a dataset using pictures of the terrain and then create a geographical map of the entire area and then code the AI to detect anomalies in the forest.
6*	Students will use machine learning algorithms to improve crop yields and soil efficiency in developing	Review artificial intelligence with students and lead the coding activities	Students will gather and prepare satellites data for a dataset and then code the AI to use

	countries.		predictive analysis to find areas with the right weather and terrain conditions to optimize farming.
7*	Students will use sensors and gather a large volume of live data for an AI to map the ocean reef.	Review artificial intelligence with students and lead the coding activities	Students will write code that combines different data streams from the sensors into one live dataset to create an autonomous navigation algorithm for the Agent to safely travel through the generated map of the ocean floor.
8*	Students will use of machine learning algorithms in water quality testing and anti-pollution efforts.	Review artificial intelligence with students and lead the coding activities	Students will collect water samples from rivers to create a database; then students will code a machine learning algorithm to find sources of pollution.
10*	Students will practice data analysis in different fields	Review the foundations of AI, provide opportunities to explore ethical dilemmas in AI, and identify careers in AI	Students will practice using their AI assistant to help identify and repair the pavilions at the world's fair.
11*	Students will gain high-level understanding about how AI can be used to collect data about forest fires.	Introduce artificial intelligence to students and support students as needed through the self-paced coding journey	Students will create coding solutions to solve the 8 different quests: Open the Gate, Meet the Agent, Agent Move, Gather Data, Eliminate the Hazards, First

			Mission, Save the Village, and Reforestation.
12*	Students will learn the principles of responsible AI.	Facilitate the discussion of responsible AI with students; support students as needed through the self paced coding journey	Students will solve coding puzzles to effectively train the Ais to act responsibly based on the principles of responsible AI.
13*	Students will utilize effective research skills to participate in collaborative projects on exploring technologies specific to AI.	Model effective research practices to create an informative writing piece	Students will research about artificial intelligence to create background knowledge for the upcoming AI for Good Project.

Instructor will modify and adapt the number of sessions based on students' needs.

Schedule: Tuesdays, 2:00-3:00 PM

1. 25.02.2025
2. 04.03.2025
3. 11.03.2025
4. 18.03.2025
5. 25.03.2025
6. 01.04.2025
7. 08.04.2025
8. 29.04.2025
9. 20.05.2025
10. 27.05.2025
11. 03.06.2025
12. 10.06.2025
13. 17.06.2025