WeTeach_AI

Cosmic Collaborators: Exploring Stars with AI

Grade Level: **9-12** | Duration: **Multi-Day** | Subject Area: **Astronomy**

LESSON TABLE OF CONTENTS

This lesson was designed under the WeTeach_AI **Advancing AI Literacy Project**. The project supports the development of standards-aligned AI literacy lessons designed for teachers by teachers. Additional lesson plan material, such as rubrics, answer keys, activity guides, and instructional considerations can be found here on our website.

The contents of this digital lesson were developed by the Texas Advanced Computing Center (TACC) with the support of Google.org. However, the contents do not necessarily represent the policies of Google.

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"After 15 years in 6th-8th-grade science, I transitioned to CTE in 2021 to teach Computer Science and Robotics. I'm a lifelong learner and PhD candidate in Curriculum and Instruction with a STEM focus at Texas Tech. My goal is to equip students with future-ready skills in critical thinking and problem-solving via real-world connections. This AI lesson is meant to combine my love for science, technology, and AI to bring relevancy and revitalize topics involving stars and the HR diagram."

Lesson Description

In this astronomy lesson, students explore the properties and life cycles of stars by using artificial intelligence (AI) as a tool for data collection, analysis, and visualization. Working in groups, they prompt AI to generate Hertzsprung–Russell (HR) diagrams while also manually plotting star data such as mass, temperature, luminosity, magnitude, and color for comparison. Whole-class discussion connects these activities to real-world scientific practices, highlighting how AI supports astronomers in analyzing complex datasets. The lesson blends AI-powered tools with traditional scientific methods, strengthening both content knowledge and critical thinking about the role of AI in science.

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Lesson Objectives *(formatted as "Students will be able to..." statements)*
• Goal 1: • Goal 2: • Goal 3:
Essential Questions
Outline the basic details and purpose of the lesson here. Also, highlight if this is a face-to-face lesson or a digital lesson. A brief 2-3 sentence overview of the lesson focus and key takeaways.

TEKS Alignment (Texas Standards Alignment)	
• TEKS Code 1 – Description • TEKS Code 2 – Description • TEKS Code 3 – Description	• TEKS Code 1 – Description • TEKS Code 2 – Description • TEKS Code 3 – Description
CSTA/ISTE Alignment (National Standards Alignment)	
• Standard 1 – Description • Standard 2 – Description • Standard 3 – Description	• Standard 1 – Description • Standard 2 – Description • Standard 3 – Description

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Inclusive Computing Considerations

(based on Guiding Principles for Inclusive CS Teaching)

AI Literacy Competencies

(based on TeachAI Framework)

Key Terms	
Term	**Definition**
Example Term 1	Brief definition here
Example Term 2	Brief definition here
Example Term 3	Brief definition here
Example Term 4	Brief definition here
Example Term 5	Brief definition here

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Launch

Engaging activity or prompt to introduce the lesson.

[Information goes here]

Exploration

Step-by-step student tasks, experiments, or investigations.

[Information goes here]

Whole Class Discussion

Discussion questions, teacher prompts, and expected student responses.

[Information goes here]

Assessment

Formative or summative assessment tasks and criteria.n.

Assessment Opportunities	Facilitation Tips
Activity Title Outline the big picture goals here. How will you measure students' mastery of lesson objectives?	Outline general teacher actions that should occur during this activity.

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