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Artificial Intelligence and Machine Learning:
Classroom Lesson Plan

Lesson Topic:

Future Uses of Artificial Intelligence and Machine Learning

Lesson Objective:

Students will be able to describe artificial intelligence and machine learning and discuss their possible future applications.

Materials:

- Chart paper, divided into three columns
- Writing utensil
- Projector or other method to watch the movie

Advanced Preparation:

- Preview the video before sharing it with your students [3:27].
- Divide chart paper into three equal columns, and title it "Artificial Intelligence and Machine Learning".

Warm-up Activity:

1. Tell students that they will be watching a video about machine learning and artificial intelligence.
2. Allow students to turn and talk with a partner about what they already know about machine learning and/or artificial intelligence.

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3. Title the first column of the chart paper "What We Think We Know". Ask students to share their knowledge from their partner discussion with the class. Make notes in the first column of the chart paper.

4. Introduce the **Vocabulary Word List** from the video. Have students circle the terms they are familiar with and look up the definitions of those they are not familiar with. Direct students to record their own definitions for the words they are familiar with and the dictionary definitions for those they are not.

5. For each term, have students work together to generate sentences or draw pictures that demonstrate their understanding of the vocabulary word in context (e.g., "I always eat oatmeal for breakfast, so my breakfasts are *repetitive*," or, "My art teacher has been showing us *repetitive* patterns in nature like the swirls inside of a sunflower." For students that choose to draw pictures, the word *repetitive* may be represented by many things including a pattern of letters, numbers, or shapes.).

6. Use this opportunity to clear up any misconceptions regarding word meanings as they relate to artificial intelligence or machine learning.

View the Video: "Artificial Intelligence and Machine Learning"

1. Tell students they will be watching the video titled, "Artificial Intelligence and Machine Learning".

2. Explain that the video presents role models explaining artificial intelligence and machine learning as well as talking about the role that they will play in the future.

3. View the video together and have students listen for the role models to use the vocabulary words they just reviewed.

4. View the video again; this time, invite students to formulate questions or comments about the ideas discussed in the video and to be prepared to discuss these after viewing the video.

Video Follow-up:

1. Ask students to offer their questions, comments, reactions and responses to the video.

2. Review students' ideas about artificial intelligence and machine learning from the warm-up activity.

3. Title the middle column of the chart paper "What We Learned".

4. Ask students to share things about machine learning and artificial intelligence they learned from the video. Note these ideas in the middle column of the chart paper.

5. Ask, "How do you think artificial intelligence and machine learning can help us in the future?" Tell students that their answers can be taken from what they learned in the video or from their own ideas.

6. Guide students to share and discuss their ideas about the possible future of artificial intelligence and machine learning.

7. Title the third column of the chart paper "Our Ideas About the Future of AI and Machine Learning". Make note of the students' ideas.

8. Close by asking students to share their opinions about pursuing a career in the field of artificial intelligence, robotics, or machine learning.

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Extension Activities:

1. Use the "Related Questions to Explore" as discussion springboards or writing prompts to help students further explore artificial intelligence and machine learning.

2. Have students use the internet to research other predictions for the future of artificial intelligence, robotics, and machine learning. Students can compile a list of possible future uses for these technologies and share this list with others.

Related Questions to Explore:

- Compare and contrast artificial intelligence, machine learning, and robotics. Which is the most interesting to you? Why?

- How would you explain the word *algorithm* to a Kindergartener? What examples might you give him or her to help them understand?

- What ethical considerations might there be in artificial intelligence and machine learning? How could we help to make sure that the people in these fields work ethically?

- Why are algorithms so important in artificial intelligence? What types of tasks could you write into an algorithm?

- How can humans benefit from artificial intelligence? Will some populations benefit more than others? Explain your answer.

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Vocabulary Word List from "Artificial Intelligence and Machine Learning" Video:

Algorithm

Artificial Intelligence

Modeling

Scenario

Robotics

Machine Learning

Repetitive

Ethical

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Ideas for Future Lessons/Activities Related to Artificial Intelligence and Machine Learning:

1. Artificial Intelligence and Machine Learning: Ethics and Robots

2. What Would You Do? Challenging Ethical Scenarios in Artificial Intelligence

3. Rules for Robots: What Types of Rules Should We Program into Our Artificial Intelligence Experiments?

4. Coding: What Is It and Why Is It Important?

5. Computer Vision: Helping Computers Learn to "See"

6. Research Project: Learning About the Top AI Experts

7. Creating a Timeline of Artificial Intelligence