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Final Project: Unit Plan
SEDC 73600 Curriculum Design
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Impacts of Artificial Intelligence and Machine Learning: How the A.I. BOTS in Our Lives Learn

Lesson 3: How A.I. Learn (Vanessa):

Learning Target:

- Students will train and test a machine learning model.
- Students will learn about how AI learn.
- Students will learn AI can learn from images.
- Students will discover how human bias can play a role in machine learning.

Standards:
K-1.CT.2 Computational Thinking - Data Analysis & Visualization
Identify different kinds of data that can be collected from everyday life.
2-3.IC.1 Impacts of Computing
Identify and analyze how computing technology has changed the way people live and work.

2-3.IC.3 Impacts of Computing
Discuss and explain how computing technology can be used in society and the world.

2-3.IC.5 Impacts of Computing
Identify and discuss how computers are programmed to make decisions without direct human input in daily life.
4-6.CT.1 Computational Thinking - Modeling & Simulation
Develop a computational model of a system that shows changes in output when there are changes in inputs.

Introduction/Hook:

Students will watch a video on how an AI learns. In this video, the AI is like a puppy learning to walk for the first time through reinforcement learning.

- Video: Learning to Walk in the Real World in 1 Hour (No Simulator)
- Source: This robot dog just taught itself to walk | MIT Technology Review
- Info on AI Reinforcement Learning: Artificial Intelligence: What Is Reinforcement Learning - A Simple Explanation & Practical Examples | Bernard Marr

(I Do):

The teacher will discuss / describe what is happening in the video. The AI is learning to walk on its own like humans or a newborn puppy would do when borned. AI usually learn from algorithms provided by programmers and simulated in computers before attempting in the real world.

(We Do):

The teacher will use the Notice and Wonder protocol with the students. The students will provide notice statements: “I notice…” Then the students will provide wonder statements: “I wonder if.., I wonder how…, I wonder why…, or I wonder whether…” The teacher will make notes of each new notices and wonders. Notice and Wonder

Independent Activity (You Do): AI for Oceans training

The teachers will inform the students they will train a machine to learn to label an image as a fish or not a fish. Students will access code.org activity and can start from the first level with watching a video or straight to training the machine, AI for Oceans #2 - Code.org. The activity can be worked on with a partner or by his/her self. The students will click on buttons to label an image as either a "fish" or "not fish," usually pictures of a trash. The students will learn that each image and label will become part of the data the AI collects to train the AI to do it on its own. After the AI has been trained, the AI will attempt to label new images on its own and show images of what the AI learned are "fish" and "not fish." When the images are consistently labeled correctly, the AI will be able to display images of "fish" and not other objects.

Wrap-Up-Debrief/Reflection: How do you want to be assessed? Peer or Self Assessment

Conversation Talk about the activity with your peer (Peer Assessment)

- What did you learn about A.I. from this activity?
- What are you still confused about or have a question about?
- What did you enjoy about the activity?

Exit Ticket (Self-Assessment)
Choose one question to answer

- What did you learn about A.I.?
- What did you enjoy about this activity?
- List 3 examples of A.I. in your life and what makes it A.I.?
- What do you still have a question about or are confused about?