AI For Oceans | Teaching Guide

Link:

https://studio.code.org/s/oceans/lessons/1/levels/1

Objective:

- To introduce students to artificial intelligence (AI) and machine learning.
- To help students understand the role of training data in machine learning and how it enables a machine learning model to classify new data.
- To encourage students to consider the impact of human bias in machine learning.

## Lesson Outline:

Introduction (5 minutes)
1. Welcome the students and introduce the objectives of the lesson.
2. Explain that they will be engaging with AI and machine learning to classify objects in the ocean and understand how training data influences AI.

Warm-Up Activity - Build Excitement (5 minutes)
1. Motivate students by explaining the goals of the activity and how they will interact with a machine learning model.
2. Highlight the relevance of AI in our lives.

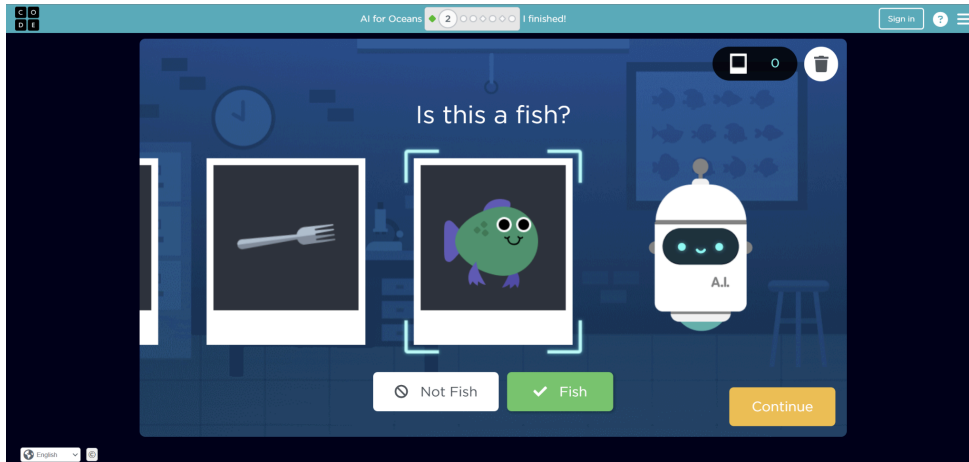### Part 1: Understanding AI and Machine Learning (15 minutes)
1. Video:
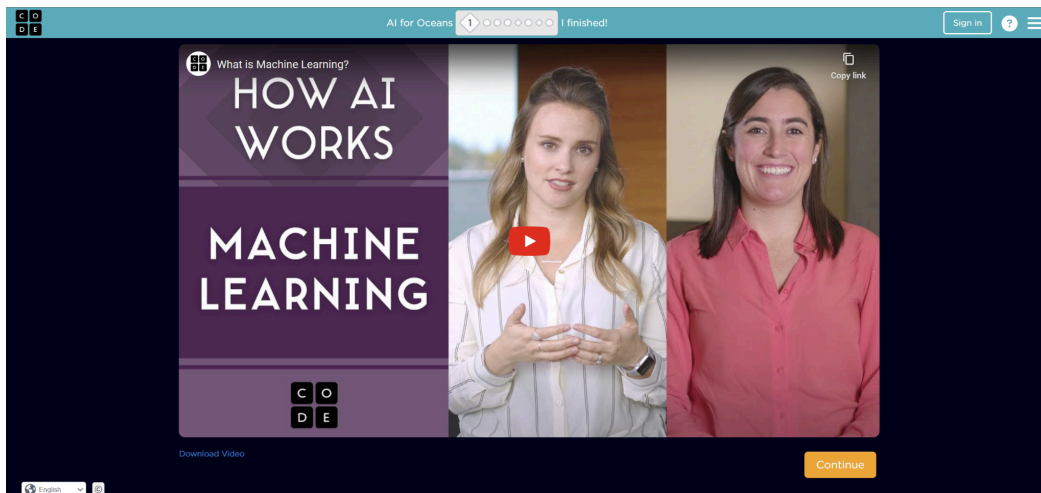
Show the video to the class.
Debrief and discuss the video content to help students understand the basics of AI and machine learning.

Part 2: Classifying Objects in the Ocean (15 minutes)
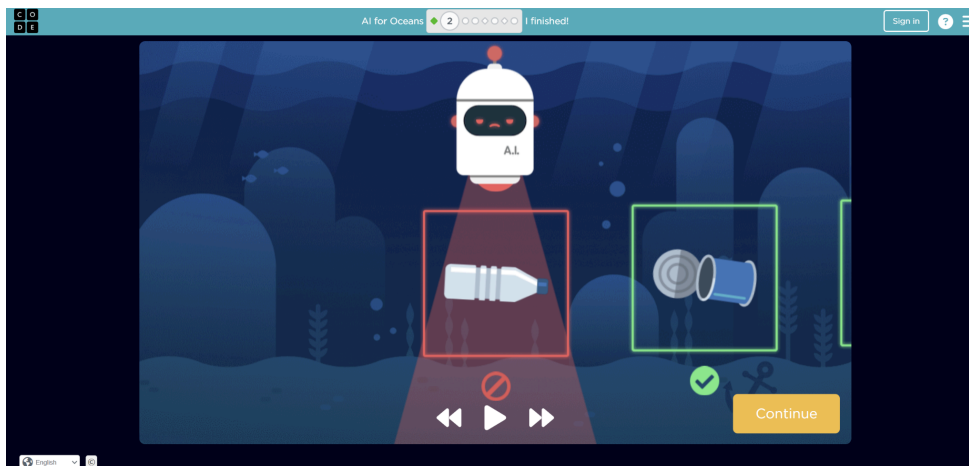   1. Activity: "Fish" or "Not Fish"

Students classify objects as either "fish" or "not fish" to simulate cleaning the ocean from trash.
Discuss the importance of training data and how it affects the machine learning model.

Part 3: Expanding Training Data (5 minutes)
    1. Activity: Including other sea creatures

Students expand their training data to include other sea creatures that belong in the water.
Emphasize the role of training data diversity.
Conclusion and Reflection (5 minutes)
    1. Recap the objectives of the lesson and what the students have learned.

2. Encourage discussion about the role of human bias in training data and how it affects AI.
3. Motivate students to continue exploring computer science and AI.

Teacher's Tips:

- Encourage students to actively participate and collaborate with their peers.
- Emphasize the importance of experimenting and trying different approaches in the activity.
- Ensure that students understand the significance of training data in shaping AI models.
- Address any questions or concerns students may have during the activities and discussions