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How Machines Learn Activity Plan

Overview

In this activity, students learn about different machine learning approaches and explore how computers use data to recognize patterns and make predictions. They practice classification by building and testing decision trees.

Recommended Grade Level(s): 3-8

Recommended Age Range: 9-12

Activity Length: 1 hour

Experience Level: Beginner

Technical Requirements

Note: *It is recommended that each student have a device to complete the interactive How Machines Learn activity. However, if time allows, teachers may also choose to walk through the activities together as a whole class, and student devices would not be required.*

- Device Requirements
 - 1 computer per student during class (Mac, PC, Chromebook all work great!)
 - Online connectivity at a minimum of 10Mb/sec
 - Modern browsers on computers
 - Chrome
 - Firefox
 - or Safari Version 15.1 or higher
- Note on Student Accounts:
 - Students do not need an account to complete this activity.

Activity Materials

All resources needed for this activity are included on the lesson page.

Teacher Resources:

- [Teacher Slides](#)
- [Lesson Plan](#)

Student Resources:

- Printed worksheet for each student ([English](#) / [Spanish](#))
- [Machine Learning Methods Activity](#)

Teachers can complete this activity as a class. If they choose to have students complete this activity independently, they will need to share the activity link.



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- Reinforcement Learning Animation ([English](#) / [Spanish](#))

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Content Standards

- **CSTA 1B-DA-06:** Organize and present collected data visually to highlight relationships and support a claim.
- **CSTA 1B-DA-07:** Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.
- **CSTA 1B-AP-11:** Decompose problems into smaller, manageable subproblems to facilitate program development.

Teacher Instructions

- Before the Hour of AI:
 - Review the teacher resources and technical requirements, decide if you plan to run this activity unplugged as a class or have students complete the interactive activities independently (student devices are required).
 - Ensure that you have the ability to project the activity slides to your students.
 - Print decision tree handouts for student practice.
- During the Hour of AI:
 - Lead students through the How Machines Learn slides, introducing supervised, unsupervised, and reinforcement learning
 - Direct students to the interactive activity to observe and compare machine learning models.
 - Facilitate the decision tree activity using the handout to classify classroom objects.
- After the Hour of AI:
 - Did you know that CodeHS offers K-12 AI curriculum, PD for teachers, and classroom tools? Go to codehs.com/ai to learn more how you and your students can continue learning about AI.

Need Help?

Email support@codehs.com to get in touch with our support team!