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Understanding Intelligent Machines (8-9)

Hello! This document includes a brief outline of our Understanding Intelligent Machines workshop, as well as relevant BC ADST curriculum connections. In this workshop, students will be introduced to the world of machine learning and artificial intelligence! Students will be exposed to multiple different AI software, culminating in students creating their filters/emojis using various poses.

BC Curriculum Ties	BC Applied Design, Skills, and Technologies Curriculum Links 8-9:
(In addition to satisfying multiple core competencies)	 Computational Thinking software programs as specific and sequential instructions with algorithms that can be reliably repeated by others debugging algorithms and programs by breaking problems down into a series of sub-problems binary number system (1s and 0s) to represent data programming languages, including visual programming in relation to text-based programming and programming modular components
	 Information and Communications Technologies binary representation of various data types, including text, sound, pictures, video development and collaboration in a cloud-based environment current and future impacts of evolving web standards and cloud-based technologies design for the web relationships between technology and social change strategies to manage and maintain personal learning networks, including content consumption and creation keyboarding techniques

Grade Levels	8-9
Time	1~1.5 Hours
Goals of the Workshop	 Understanding machine learning processes Using machine learning to make predictions and decisions Application of machine learning to solve engineering problems

Activity Descriptions

Google Drawing Guesser

Objective: To learn about how machine learning algorithms recognize and categorize information as well as the limitations of machine learning Participants will:

- Learn how machine learning differs from traditional computer programs
- Understand how humans learn using classical and operant conditioning
- Use Google Quickdraw to see a computer program guess drawings
- Learn about the applications and limitations of machine learning including biases and its impact on social media

Pose Emojis

Objective: To train a machine learning program with photos and to use the algorithm to code emojis

Participants will:

- Learn more details about machine learning such as training vs testing sets, the importance of quality data, false positives, and confidence intervals
- Train a machine learning algorithm to recognize certain poses
- Learn basic JavaScript coding
- Code emojis/filters to only appear when certain poses are performed

We can't wait to connect with your school & expose your students to the STEM field with our exciting, hands-on STEM activities!



