**Teacher:** William Perez

**Date:** 4/10/19

**Grade:** 11th

**Lesson Topic:** Artificial Intelligence

**Learning Standards:**

International Society for Technology in Education (ISTE): 5d: Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

ISTE: 3d: Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

Math, Science and Technology (MST) Standard 5: Impacts of Technology: Students will describe how technology can have positive and negative effects on the environment and on the way people live and work

ITEEA Standards for Technological Literacy: Technology and Society: Standard 6: Students will develop an understanding of the role of society in the development and use of Technology.

[CCSS.ELA-LITERACY.RST.11-12.7](http://www.corestandards.org/ELA-Literacy/RST/11-12/7/): Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

**AIM:** What is Artificial Intelligence?

**Students Will Be Able To: (SWBAT):**

Define Artificial Intelligence

Define Algorithm

Explain the use of algorithms in Artificial Intelligence action output

**Differentiation:**

English Language Learner (ELL): One student will be provided with translated lesson material. Student has limited proficiency in reading and writing in the English language

**Motivation:**

Displayed on the SmartBoard will be three movie images. iRobot, Wall E and The Terminator

Ask Students if they are familiar with the movies, if so, what do all three of these movies have in common?

*Possible Answer: All three movies are based in a futuristic time period, they all contain robots, etc.*

**Do-Now:** Students will log on to their Google Classroom accounts, answer and submit the following question: When going through your social media feed (Facebook, Instagram, Twitter), why do you think the most relevant items are shown first?

*Answer: When going through a social media feed the most relevant items are shown first because the social media platforms use algorithms.*

**Development:**

Ask Students: What do you know about Artificial Intelligence?

*Possible Answer(s): Artificial Intelligence is the ability of automated computer/machines to accomplish everyday human tasks.*

Students will Google Search the definition of Artificial Intelligence and share the results. The search result definition will be displayed on screen: “The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages”

Explain/Discuss: Artificial Intelligence (AI) uses algorithms in order to determine or predict what the user is expected to search or appreciate. AI information still needs human interaction and data input in order to grow its information.

Define: What is an Algorithm?

*Answer: Algorithm is a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.*

Play YouTube Video: “Artificial intelligence: What the tech can do today?”

Ask Students: Based on the video, what are some major areas of technology that are being transformed by AI technology and what are some examples?

*Answer: Transportation (self-driving vehicles), Medical (Screening Diagnosis), Agriculture: (Weed vs Crop Detection), Retail (Scanning Inventory)*

Discuss: After playing the video and going over the different Technology Systems that use Artificial Intelligence, describe an unmentioned AI use. AI algorithm is also being used today in the US judicial system. AI technology is used today to determine if an offender in a justice system will be likely to become a repeat offender, based on previous data.

**Independent Practice:**

Using the Google Classroom Software, students will access and read two articles regarding AI usage in the trialing of a Wisconsin man.

Articles: "How to Upgrade Judges with Machine Learning" (MIT Technology Review, by Tom Simonite) Using Google Classroom, students will answer the following questions:

What information does an algorithm use to determine if a defendant is at-risk to reoffend?

*Answer: Algorithms use data from thousands of criminal court cases, individual Rap sheets, demographics, age and records*

Do you think algorithms should be used to determine a sentence? Why or Why not?

*Answer: Students answer can vary based on opinion*

Article #2: "Courts are using AI to sentence criminals. That must stop now" (Wired, by Jason Tashea)

Using Google Classroom, students will answer the following questions:

Where do Government agencies obtain their algorithms from?

*Answer: Government agencies purchase their algorithms from private businesses.*

Was the court’s decision to solely base Loomis’s sentence on Compas fair, why or why not?

*Answer: Students answers vary based on opinion*

Due to the lack of transparency in the algorithm’s output, do you think Loomis was given a fair sentencing? Explain your answer.

*Answer: Student answer and explanation can vary*

**Summary/Exit Ticket:**

Students will answer and submit using Google Classroom:

What is Artificial Intelligence?

*Answer: The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages*

What are 3 Technologies that make use of Artificial Intelligence?

*Possible Answer: Agricultural Technology, Medical Technology, Transportation Technology, and Retail*

What is an Algorithm?

*Answer: Algorithm is a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.*

**References:**

<https://www.youtube.com/watch?v=fsxKUby4EEw>

<https://www.technologyreview.com/s/603763/how-to-upgrade-judges-with-machine-learning/>

<https://www.wired.com/2017/04/courts-using-ai-sentence-criminals-must-stop-now/>

<https://sharemylesson.com/teaching-resource/sentenced-prison-machine-290381>