

# AI and Digital Literacy

## Teaching and Learning Story

TASK DESIGN	
<b>Learning Experience Title</b>	<i>What is AI and the Ethical Use of AI</i>
<b>Grade</b>	8
<b>Learning Area(s)</b>	<a href="#">Applied Design, Skills, and Technologies (ADST) 8</a>
<b>Curricular Competencies</b>	<p><i>Applied Design</i></p> <p>Making</p> <ul style="list-style-type: none"> <li>Identify and use appropriate tools, technologies, and materials for production</li> </ul> <p>Ideating</p> <ul style="list-style-type: none"> <li>Evaluate personal, social, and environmental impacts and ethical considerations</li> </ul> <p>Sharing</p> <ul style="list-style-type: none"> <li>Decide on how and with whom to share their product</li> <li>Demonstrate their product and describe their process, using appropriate terminology and providing reasons for their selected solution and modifications</li> <li>Evaluate their product against their criteria and explain how it contributes to the individual, family, community, and/or environment</li> </ul> <p><i>Applied Skills</i></p> <ul style="list-style-type: none"> <li>Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments</li> <li>Identify and evaluate the skills and skill levels needed, individually or as a group, in relation to a specific task, and develop them as needed</li> </ul> <p><i>Applied Technologies</i></p> <ul style="list-style-type: none"> <li>Select, and as needed learn about, appropriate tools and technologies to extend their capability to complete a task</li> <li>Identify the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use</li> <li>Identify how the land, natural resources, and culture influence the development and use of tools and technologies</li> </ul>

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<b>Curricular Content</b>	Digital Literacy <ul style="list-style-type: none"><li>• elements of digital citizenship</li><li>• ethical and legal implications of current and future technologies</li><li>• strategies for curating personal digital content, including management, personalization, organization, and maintenance of digital content; e-mail management; and workflow</li><li>• search techniques, how search results are selected and ranked, and criteria for evaluating search results</li><li>• strategies to engage with personal learning networks</li></ul>
<b>Links to Core Competencies</b>	Thinking <ul style="list-style-type: none"><li>• Critical and Reflective Thinking</li></ul>

### TASK SUMMARY

The following lessons aim to answer these two questions:

- What are AI and machine learning?
- What is ethical use of AI?

Students learned about AI, including machine learning, and evaluated their ethical stance on using the technology. The teacher used direct instruction and videos to summarize concepts and explain how AI is used in various products and applications. The teacher then demonstrated the use of generative text and AI images to examine bias, errors, AI versus human-created content, and the ethical implications of using AI-generated work as one's own. Students explored a machine learning application and reflected on the impacts and implications of AI on themselves and society.

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## LEARNING STORY

### PLANNING

- Photocopy the one worksheet for each student and each lesson.
- Create a supporting slide deck with resource videos and activity links for students.

### TEACHING

The content of this teaching and learning story was carried out over two lessons. Power Point slides facilitated learning and whole class conversations.

#### Lesson 1: What is AI and Machine Learning?

Students were asked to hypothesize or share what they understood about the following two questions:

Students were introduced to the four stages of an AI system's decision-making process. Each stage represents a key capability within the system's overall function. The example of an Apple smartwatch was used to describe how these functions would work.

Students were given definitions of Artificial Intelligence and machine learning and were asked to think of examples of machine learning.

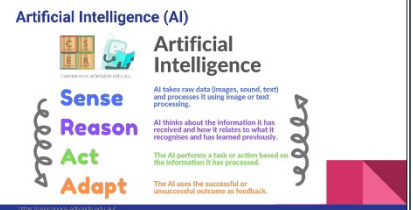
Students were then given a link to play the online game Quickdraw. Students observed how the app used the database of images to identify what they were drawing. Students were surprised by how quickly it would guess some drawings and were frustrated by how it could not guess other drawings.

We discussed how AI learns by making a distinction between **supervised learning**, in which humans help the system learn, and **unsupervised learning**, where the system identifies patterns or similarities in data on its own. Students were asked to identify some potential benefits and drawbacks for each type of learning.

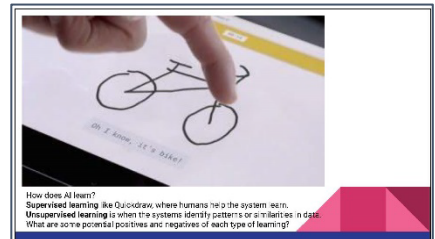
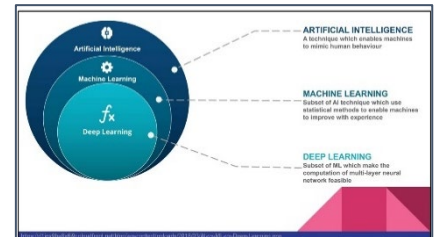
#### Think:

- How does a music streaming service recommend new songs that you might like?
- How does your messaging app or the search engine guess the next word before you type it?

Students were asked to hypothesize or share what they knew or felt confident that they understood about either of these two scenarios. Students responses varied but showed an developing to proficient understanding of about how music streaming services recommend songs by analyzing their listening data. They were unsure about how text prediction worked.



I talked about how my Apple smartwatch uses all four of these features:  
**Sense** - the gyro senses my movements or lack of  
**Reason** - It can tell by my movements and the geolocation that I am swimming or going for a walk.  
**Act** - The watch asks if I want to record my workout.  
**Adapt** - It will ask the next time that the same movements and location are used.



# AI and Digital Literacy Teaching and Learning Story

## TEACHING CONTINUED

### Lesson 2: When and how is it OK to use AI?

Students were prompted to think about key questions.

We shared examples of AI applications and students watched a video to gain a better understanding of what constitutes AI and what does not.

We discussed the positive and negative impacts or outcomes of AI. Although students struggled to identify possible negative impacts, such as job loss, they did recognize a potential for humans to become lazier.

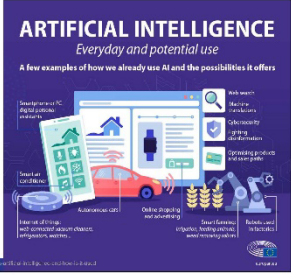
I demonstrated using generative AI to create various images. During this demonstration, students were able to identify biases and inaccuracies in the images. Numerous questions arose about the origins of the AI system's information, which highlighted the inherent uncertainty in generative AI, given the source of information is often unclear or unknown.

To deepen students' understanding of ethical issues, I used AI to compose both a recommendation letter for a grade 8 student and a paragraph about electromagnetic radiation as an example of a homework assignment. Following this, students expressed concerns that using the AI-generated letter would be inappropriate due to its lack of authenticity, as it wasn't written by a teacher. They also voiced reservations about the ethical implications of relying on AI to complete homework assignments.

Students were given an example of a badge they could create and use to label an image as AI-generated. This emphasized the importance of adopting a critical approach when encountering images and recognizing the role of AI in assisting students with their schoolwork.

**Think:**

Where is AI in your life?  
What uses AI?  
How do you use AI?  
When is it OK to use AI?



There were a lot of questions about what is AI and what isn't AI. I spoke to the image for examples of what is AI in their life. The video that I used later really help clarify their understanding.

**AI for good and bad?**

Think of times when AI is used and has intended or unintended positive and negative impacts or outcomes. Think of examples from your personal life or from a movie or book?

Try to give a specific example and impact or outcome.

I asked students to identify one positive and negative impact of AI. They needed help with identifying the negative because of their limited experience, so I would contribute possible negative impacts like job loss. The students needed some help to infer the potential negative impacts of AI like job loss, but they did identify things like the potential for humans to become lazier, that we may not be comfortable with a computer doing medical procedures on us, the fact that AI can get it wrong.

**Ethics**

**Ethics** - Guidelines for good behavior and decision making.

Give an example of a non-AI ethical issue that you have a stance on.

Examples were stealing, running in the halls because someone may get hurt, being kind.

**Scenario 2**

Is it OK to use a few sentences or paragraphs from a book or web page in your Social Studies assignment?

Is it OK to use a generative AI website to write a few sentences or paragraphs for your Social Studies assignment?

What are the ethical issues?

I used generative AI to write a recommendation letter for a Grade 8 student with some specific characteristics. It was an over the top recommendation letter so we asked it to tone it down. It was a well written recommendation letter. Some of the students felt that it wouldn't be appropriate to use the letter because it wasn't written by the teacher and lacked authenticity (my word) or coming from the teacher's heart and mind. We asked it to write a paragraph on electromagnetic radiation and they thought that it used too many complex words so it would require editing. They felt that it wasn't right to get AI to do your school work.

<https://www.perplexity.ai> does not require a log-in

# AI and Digital Literacy

## Teaching and Learning Story

### ASSESSMENT

#### LESSON ONE


#### TEACHER OBSERVATIONS AND STUDENT WORK

Student responses ranged from basic comprehension to a deeper understanding of how music streaming services utilize listening data to recommend songs. Students were unsure about how text prediction worked. Some example responses include:

- "I think the music streaming company compiles everything you listen to and for how long and it uses data to recommend a song by genre or artist."
- "I think the music streaming service are able to recommend new songs I like by my past listening activities and the genre"
- "It takes words you often use or songs you listen to a lot and recommends songs or words like it."

**What is AI and Machine Learning?**

**Think**  
How does a music streaming service recommend new songs that you might like?  
\_\_\_\_\_  
\_\_\_\_\_  
How does your messaging app or the search engine guess the next word before you type it?  
\_\_\_\_\_  
\_\_\_\_\_

 <p><b>Artificial Intelligence</b></p> <p><b>Sense</b> AI takes raw data (images, sound, text) and processes it using image or text processing.</p> <p><b>Reason</b> AI thinks about the information it has received and how it relates to what it recognizes and has learned previously.</p> <p><b>Act</b> The AI performs a task or action based on the information it has processed.</p> <p><b>Adapt</b> The AI uses the successful or unsuccessful outcome as feedback.</p>	<p>Something you learned about Artificial Intelligence (AI). _____ _____</p> <p>Something you learned about Machine Learning (ML). _____ _____</p>
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Give an example of data that is collected about you from an app or device that you use.  
Name the app or device \_\_\_\_\_  
What data is collected \_\_\_\_\_  
How could that data be used \_\_\_\_\_  
\_\_\_\_\_

Summarize what you have learned today.  
\_\_\_\_\_  
\_\_\_\_\_

A wondering or question you have about AI.  
\_\_\_\_\_  
\_\_\_\_\_

I think the music streaming company compiles everything you listen to and for how long and it uses data to recommend a song by genre or artist.

I think the music streaming service are able to recommend new songs that i like by my past listening activities and the genre.

It takes words you use often or songs you listen to alot and recommends songs or words like it.

# AI and Digital Literacy Teaching and Learning Story

## LESSON TWO

### TEACHER OBSERVATIONS AND STUDENT WORK

In our discussions about the positive and negative effects of AI, it proved beneficial to reference popular movies such as iRobot and Wall-E as examples of negative AI use, and common translator sites as examples of positive AI implementation. Interestingly, students were unaware of the diverse range of current and future applications of AI.

**Ethical Use of AI**  
 Think: Where is AI in your life? How do you use AI? What uses AI?  
Chat GPT

In your opinion, when is it OK to use AI?  
when your stuck in a pickle

Positive impact or outcome	Negative impact or outcome
AI Example: helps write essays Plant disease detector	AI Example: Can plagiarize

**Ethics - Guidelines for good behavior and decision making**  
 Give an example of a non-AI ethical issue that you have a stance on.  
I don't know what this means.

**Scenario 1** Is it OK to use someone else's image for your project? Why or why not?  
as long as you put the link for where you got the image it should be alright.

Is it OK to use a generative AI website to create an image for you to use on your project? Why or why not?  
yes because it's for school as long as its appropriate.

What are the ethical issues?  
what are ethical issues???

**Ethical Use of AI**  
 Think: Where is AI in your life? How do you use AI? What uses AI?  
AI is part of my daily basis. I use it for social media and on my phone to control my things at home.

In your opinion, when is it OK to use AI?  
I think it's ok to use AI especially when you're doing something and need help but you don't know how to do it so you use AI to provide information on how to use it.

Positive impact or outcome	Negative impact or outcome
AI Example: You are able to see an image based on your imaginations. Providing help by seeing personal informations	AI Example: Take images that didn't happen but looks convincing because AI made it or provided it. They might leak your personal informations, even though its unlikely to happen.

**Ethics - Guidelines for good behavior and decision making**  
 Give an example of a non-AI ethical issue that you have a stance on.

**Scenario 1** Is it OK to use someone else's image for your project? Why or why not?  
yes, if you have permission or consent to use it.

Is it OK to use a generative AI website to create an image for you to use on your project? Why or why not?  
yes, because if you can't find any image in that information you can use AI to generate an image based on that information. But you need to be aware that there might be errors after generating the image.

What are the ethical issues?

**Ethical Use of AI**  
 Think: Where is AI in your life? How do you use AI? What uses AI?  
AI can be any where (google, Siri, social media, and quite frankly) I use AI when im on my phone and using things like google translate.

In your opinion, when is it OK to use AI?  
Its okay to use AI when searching for things like weather and asking Siri things

Positive impact or outcome	Negative impact or outcome
AI Example: helping people with daily activities like school work, directions to work and language apps.	AI Example: Voice/Face/Finger Print recognition could be bad because they could get leaked.

**Ethics - Guidelines for good behavior and decision making**  
 Give an example of a non-AI ethical issue that you have a stance on.  
No smoking in the halls

**Scenario 1** Is it OK to use someone else's image for your project? Why or why not?  
yes only if you put credits to the person and ask for consent to use it.

Is it OK to use a generative AI website to create an image for you to use on your project? Why or why not?  
yes because if you cant find a picture you are looking for you can generate it.

What are the ethical issues?  
there could be an error in the image or AI could generate something very different

**Ethical Use of AI**  
 Think: Where is AI in your life? How do you use AI? What uses AI?  
AI is in my phone, does a whole lot of things for me. I use it to watch videos.

In your opinion, when is it OK to use AI?  
I think its okay to use AI anytime of the day.

Positive impact or outcome	Negative impact or outcome
AI Example: helping people with daily tasks.	AI Example: Robots talking over.

**Ethics - Guidelines for good behavior and decision making**  
 Give an example of a non-AI ethical issue that you have a stance on.  
I think saying should fight to tougher than AI.

**Scenario 1** Is it OK to use someone else's image for your project? Why or why not?  
YES if you have permission lol!

Is it OK to use a generative AI website to create an image for you to use on your project? Why or why not?  
yes, I is because I think its a learning tool.

What are the ethical issues?  
there are ethical issues because the people are creating the rules and doing bad things.