LESSON PLAN

Learning with AI

This lesson is part of *USE, UNDERSTAND & ENGAGE: A Digital Media Literacy Framework for Canadian Schools*: http://mediasmarts.ca/teacher-resources/digital-literacy-framework.

LEVEL: Grade 4 to 6

DURATION: 2 to 2 1/3 hours

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Overview

In this lesson, students in grades 4 through 6 explore the capabilities and limitations of AI. They learn to verify AI-generated answers using search engines and reliable sources while collaborating to build a model that explains how AI tools actually function. They evaluate the ethics of various AI uses and establish a set of responsible rules for its application in their studies. Finally, students design a visual "Learning Loop" that illustrates the distinct roles of humans and AI, reinforcing the concept that the student must remain the "boss" of the machine.

Learning outcomes

Essential knowledge: Students will learn..

- Reading Media: the specific components of an AI system, including the parts (computer, prompt, output), the people (the user, developers, and experts in training data), and the interactions between them.
- Finding and verifying: AI tools can generate convincing but false information; AI claims must be verified against trustworthy, external sources
- Ethics and Empathy: the difference between ethical and unethical uses of AI in a school context, such as the distinction between using AI for feedback on clarity versus having the AI write an assignment for them
- Making and Remixing: best practices for using AI as a learning tool

Key concepts/big ideas: Students will understand...

- Media are constructions: AI is a machine, not a "brain," that it picks answers based on a massive amount of data provided by humans rather than "thinking" in the human sense
- Media have social and political implications: the use of AI has real-world consequences for their own learning and that they must ensure it is used safely and effectively

- Digital media experiences are shaped by the tools we use: how we use AI tools is influenced by their design, but we are able to use them in ways that we control

Performance tasks: Students will be able to...

- Use: Verify AI-generated claims using search engines and the "Companion Reading" strategy; use AI effectively as a learning partner to test their understanding of a concept or process.
- Understand: Build a model of how AI works and how to use it ethically and effectively.
- Engage: Debate the ethics of various AI use cases and develop rules to guide their future interactions with AI tools.

Student-facing outcomes:

We will learn how AI works and how to use it well as a learning partner.

We will think about the right and wrong ways and times to use AI.

We will use AI to help us understand things and show what we have learned about how AI works.

Preparation and Materials

Ensure you have access to a digital projector or digital whiteboard, a chat AI tool and a search engine.

Prepare to distribute the assignment sheet The Learning Loop and have paper and pens on hand for students to create their "idea doodles," or access to drawing software if students are working digitally

Ensure there is enough open floor space for students to "vote with their feet" in the "Learning with AI" activity

Think of "two truths and a lie" you are willing to share about yourself

Choose a concept or process you have covered in the last week or so that students could explain in three to five sentences

If you have not already delivered the lesson Information Sorting, prepare to show the video Companion Reading

Review the MediaSmarts web articles on AI and Algorithms

Procedure

Note: Unless otherwise noted, all activities in this lesson that use AI tools can be done either by students (individually, in pairs or in groups) or by the teacher with a digital projector or digital whiteboard. Teachers should consult their school, board/district or province's policies on use of AI tools by students and use tools that have been approved at one or more of those levels if possible.

TWO TRUTHS AND AN AI

Start by asking students if any of them know the game "two truths and a lie." If any do, have them explain to the rest of the class. If not, explain that the rules are as follows:

- Each person will say two things that are true about themselves, and one thing that is untrue, without telling which is which.
- Other people will try to guess which of the three things is the lie.

Tell students to write down two truths and one lie about themselves. Reassure them that they will not have to share these with anyone else: it's the exercise of thinking of and writing down the two truths and a lie that's important.

After students have had a few minutes to think, ask any who are willing to share theirs. If none are willing to share, tell students your own two truths and a lie. Have students guess which of the three things are true and which is the lie.

Now ask students:

- How hard was it to guess which was the lie?
- How hard was it to come up with a believable lie?
- What made it hard?

If it does not come up, point out to students that you have to "match" the lie to the two true things: if it's too weird or too ordinary compared to them, it will be easy to guess, even for someone who doesn't know you.

Now access a chat AI tool using the digital projector or digital whiteboard and ask it to tell you two truths and a believable lie about a historical figure of your choice, but not to tell you which is which.

> *Sample prompt:* Play "two truths and a lie" with me. Tell me two true things and one believable false thing about Albert Einstein. Do not tell me which is which.

Have students guess which is the lie.

Once you have gotten the answer, ask:

How do you know the truths were really true and the lie was really a lie?

> Point out that AI can tell a lie just as easily and convincingly as it can tell the truth. If you don't already know the answer, the only way to find out is to check against another source.

Using a digital projector or digital whiteboard, open a search engine and enter your historical figure's name in quotes (e.g. "Albert Einstein.") Then add one of the "truths" (e.g. "played the violin") and search, then look over the search results to see if you can find a trustworthy source that will confirm this was true.

> Note that the first result in your search engine is likely to be an AI overview. If so, look to see if there are links in the overview. If there are, continue the activity below. If there are not, tell them that this is no more reliable than their first AI answer and scroll down to the link results below.

Ask students if they recognize any of the links as being reliable sources (e.g. National Geographic, Encyclopedia Britannica.) If not, how can they tell which links lead to reliable sources?

If you have already delivered the lesson Information Sorting, point out that this is the Companion Reading step of that process. If not, show the video Companion Reading and then ask how they would apply what they learned in that video to finding out if these links are trustworthy.

Next, repeat the process with the lie (e.g. "Albert Einstein" "failed math".)

Now ask:

How was using the search engine different from using the AI?

Have students work in pairs or small groups. Give them five minutes to brainstorm times where it would be better to use an AI to answer a question and times when it would be better to use a search engine. Have them share and explain their answers.

HOW AI KNOWS

Now ask students: How do you think AIs get their answers?

After a few students have made suggestions, tell them that you are going to make a model on the board of how AI works. Tell them that they can tell you what to write or draw, and then have the class collaborate together on the model.

If students suggest things that contradict each other – for example, "AI has a brain that thinks about the question you ask it" and "AI has a big list of answers, and if your question is there it will answer it" – have students vote on which they think is more likely to be correct and record that one.

When students are satisfied that the model is complete, break them into groups and have each group turn the model into a written explanation of how they think AI works. Their explanation should be three to five sentences long.

Next, give the explanation to an AI tool and ask if it is correct.

> *Sample prompt:* I am [age] years old. Here is what I think about AIs. They are smart robots that know lots of things. When you ask them something, they look in a giant book and pick the best answer really fast. They know the right answer because people taught them all the answers. What did I get right? What did I get wrong?

Ask students:

- How close was your model to being right? What did you get wrong?
- Why would you want to tell the AI how old you were? (This tells it to make sure its answer uses words you will know.)

Now work together with the class to rewrite your explanation, and then give it to an AI tool and ask if it is correct, using the same prompt format as before.

LEARNING WITH AI

Now remind students of a concept or process in any subject that you have covered in the last week or so. It should be one that students could explain in three to five sentences.

Working individually or in pairs, have students write a short explanation of the concept or process as they understand it.

> If students are using AI tools themselves, have them test their understanding of the concept or process by sharing it with the AI and asking what they got right or wrong.
>
> If only you are using the AI tool, you can either pick an explanation to test or have students share their explanations and develop one as a whole class.

Now ask students:

- What can we use AI for?
- What should we not use AI for?

Tell students that they are going to "vote with their feet":

One side of the room stands for "Okay," and the other side stands for "Not Okay."

You are going to tell them something that you could do with AI. If they think it is okay to do that, move to the "Okay" side of the room. If they think it is not okay, move to the "Not Okay" side.

Getting feedback from AI on whether something you've written is clear.

- Getting advice from an AI on how to make it more clear
- Having the AI rewrite it for you
- Having the AI write it for you
- Having an AI find you sources that answer your question
- Having an AI answer your question
- Having an AI write the answer to a question a teacher asked you
- Getting feedback from an AI on a drawing you did
- Getting advice from an AI on how to improve it
- Having the AI improve it for you
- Having the AI make it for you.

When students have returned to their seats, ask:

Were there any uses that many people disagreed about?

If so, discuss: How could we decide whether those are okay or not? Could they be okay in some situations but not others? If so, which ones?

If (or after) students have reached a consensus, have them work in pairs or small groups to suggest rules to follow when using AI for learning.

Each pair or group should think of at least three rules, then share to make a master class list.

ASSESSMENT: THE LEARNING LOOP

Distribute the assignment sheet *Learning Loop* and go through it with the class. Have students make a model that demonstrates a responsible "Learning Loop" using AI. The model should show the distinct roles of the human and the AI, explain how AI works, and show how to use AI for learning.

Use this thinking routine to help students identify the components of their model.

- Parts: The computer, the prompt, the output, the book for checking.
- People: The student, the AI developers, the human experts in the AI's training data.
- Links: How the human asks a question and how they check the AI's answer.

Next, students should make an "idea doodle" that includes a drawing of their Learning Loop, labels that name the parts and people in the model, and lines or arrows that show what the parts and people do together. (If you want, you can allow students to use drawing software for this instead of drawing it by hand.)

When students have finished their thinking routine and idea doodle, they should create a good copy and then hand in both the rough and finished work.

Post-lesson consolidation: The day after you have finished the lesson, have each student write a two-word description of how to use AI for learning (e.g. "Human Boss" or "Check facts.")

STUDENT HANDOUT

LEARNING WITH AI

The Learning Loop

You have learned that AI is a tool that can be very helpful, but it can also make mistakes. A **Learning Loop** is a model of how to use AI for learning. It shows that **you** are the boss of the machine!

STEP 1: PLAN YOUR MODEL

Before you draw, think about the three big pieces of your loop. Use these ideas to help you:

- **Parts:** What parts does your model of AI have?
- **People:** Who is doing what in your model?
- **Links:** What are the parts and the people doing together?

STEP 2: MAKE AN "IDEA DOODLE"

On the back of this page, draw a picture of your **Learning Loop**.

1. Draw the Loop: Show everything that you and the AI do when you use it for learning
2. Add Labels: Use words to name the Parts and People in your drawing.
3. Make connections: Draw lines or arrows to show where the parts and the people do things together in your model.

STEP 3: MAKE A GOOD COPY

Now make a good copy of your model. It should be clear and easy to understand.

Hand in your plan, your idea doodle and your good copy.

NEED HELP WRITING? USE THESE STARTERS:

If you aren't sure how to start your sentences, try these:

- "When I ask the AI a question, it..."
- "I know I need to check the AI's answer because..."
- "When I use AI, I will..."
- "My job is different from the AI's job because..."

CHECK YOUR WORK!

- [ ] Did I show the difference between what I do and what the **AI does**?
- [ ] Did I explain how the AI gets its answers?
- [ ] Did I include my own rules for using it the right way?
- [ ] Did I use both drawings and words?

Plan Your Model

Before you draw, think about the three big pieces of your loop. Use these ideas to help you:

Parts: What **parts** does your model of AI have?

Interactions: What are the parts and the people doing together?

People: Who is doing what in your model?

Idea Doodle

Now draw a picture of your **Learning Loop**.

1. **Draw the Loop:** Show everything that you and the AI do when you use it for learning
2. **Add Labels:** Use words to name the **Parts** and **People** in your drawing.
3. **Make connections:** Draw lines or arrows to show where the parts and the people do things together in your model.

