

Learners and AI

What should learners know about AI?

How could they use it?



- **Introducing AI to learners**
- **Things learners can do with AI**
- **Challenges of AI and how to help learners learn about them**

Resources to support the understanding of AI

Key concepts:

Generative AI
Data
Machine learning
Algorithms
Bias

Lessons and slides that can be repurposed:

- **What is AI?** (Common Sense Education)
 - [Lesson plan](#), [slides](#), [video](#), [handout \(teacher notes\)](#)
- **Introduction to AI and AI Bingo** (MIT Media Lab)
 - [Curriculum Overview](#), [Curriculum](#), [Slides](#)

Games and examples to understand AI

[Quick Draw](#)

- Helps to understand the collection of data and machine learning
- Can also be used to talk about biases in the data (see this [blog post](#))

[Moral Machine](#)

- Helps understand the collection of data for a specific purpose (driverless cars)
- Can also be used to talk about ethical decisions that only humans are able to make

[Project Euphonia](#) - Video

- Helps understand the collection of data for a specific purpose (personalised speech recognition for people with a speech impairment)

Daily examples to understand AI

Have a conversation with learners regarding AI in their daily life.

Where do they encounter AI?

Travel Maps & Navigation <ul style="list-style-type: none">• Google Maps• Uber app	Smartphone Apps <ul style="list-style-type: none">• Siri, Alexa, Google Assistant	Social Media Feeds <ul style="list-style-type: none">• Algorithms curate feeds	Advertisements <ul style="list-style-type: none">• Targeted ads from online tracking	Smart Cars <ul style="list-style-type: none">• Tesla
Music & Video Streaming <ul style="list-style-type: none">• YouTube recommendations• Music suggestions	Smart Home <ul style="list-style-type: none">• Smart thermostats• Smart speakers	Smart Input <ul style="list-style-type: none">• Predictive text (typing)• Auto-completion based on typing	Security & Surveillance <ul style="list-style-type: none">• Face recognition• Object/location recognition	Finance Services <ul style="list-style-type: none">• Fraud detection• Customer service

This table is from a Slides presentation by Shawn McCusker (shawn@edtechteacher.org)

What can learners do with AI ?

Reading help

- Summarize an article
- Define concepts

Writing help

- Write a thank you note
- Ask for help with grammar

Learning help

- Use prompts to get support from AI

Everyday help

- Prepare for a job interview
- Cheap and simple meal suggestions

Summarize an article

Prompt: “ Summarize this article in clear language: <https://www.cbc.ca/news/climate/tiny-forests-japan-canada-1.7114111> ”

Result:

“The article discusses the concept of "tiny forests" and how they are being used in Japan and Canada to combat climate change and promote biodiversity. These miniature forests, which mimic natural ecosystems, are created in urban areas and provide numerous environmental benefits such as carbon sequestration, improved air quality, and habitat for wildlife. Researchers and community groups in both countries are working together to establish more tiny forests as a sustainable solution to environmental challenges.”

Define a concept

Prompt: “ Define in clear language "carbon sequestration" ”

Result:

“Carbon sequestration is the process by which carbon dioxide is removed from the atmosphere and stored in natural ecosystems such as forests, oceans, and soil. This helps to reduce the amount of carbon dioxide in the atmosphere, which is a greenhouse gas that contributes to global warming and climate change.”

Use prompts to get help with learning

Context: I am an adult literacy learner.

Goal: I am trying to...
I need help with...
I am learning about and want to know how...

Level: I need an answer in clear language.

Format: I would like an answer in [3 short paragraphs],
[bullet form], [a table]

Prompts for everyday help

- “Pretend that you are the manager of a grocery store. Suggests questions she might ask me during an interview to work in the fruits and vegetables section.”
- “Give me 10 easy, affordable meal suggestions”
- “Give me a list of Canadian movies on Netflix”

[Copilot](#)

[ChatGP](#)
[I](#)

[Gemini](#)

Prompts for everyday help



Suggestions
from Google
Gemini

Hello.

How can I help you today?

Plan a low-carb meal
with what's available in
my fridge



Revise my writing and
fix my grammar



Tips to organize my
room



Explain the wave of K-
pop around the world

한 a

What are the downsides of AI?

How to help learners learn about them?

- Privacy issues
- Biases in the data and in the output
- Information integrity

The downsides of AI

Support learners in understanding that AI is built on large amounts of data:

- What is data?
- Where is data collected?
- How is it used?

Privacy issues and AI

Have a conversation with learners :

Where is data collected in their daily activities?

- AI powered recommendations : Youtube, social media online shopping, movie platforms
- Location tracking
- Facial recognition

Discussion points with learners:

- Are they aware that data is being collected?
- Do they take the time to read user and privacy agreements?

Sports Movies



Watch In One Weekend



International TV Shows



Critically Acclaimed TV Shows



What can you tell about the person with this Netflix profile?

Privacy issues and AI

Lessons and slides to teach about the collection of data and its use:

- **How Is AI Trained?** (Common Sense Education)
 - [Lesson plan](#), [slides](#)

- **AI algorithms: How well do they know you?** (Common Sense Education)
 - ◆ [Lesson plan](#), [slides](#), [video](#), [handout \(teacher notes\)](#)

- **AI Literacy - Facing Off with Facial Recognition** (Common Sense Education)
 - ◆ [Lesson plan](#), [slides](#), [handout \(teacher notes\)](#)

Privacy issues and AI

Privacy topics to discuss with learners:

- Be careful of the information entered in a prompt, avoid entering anything personal
- Read user and privacy agreements
- Get familiar with privacy settings in apps
- Keep reading on the subject of privacy : use AI tools to summarize longer and more difficult articles

Biases in the data and in the output

Lessons and slides to teach about biases in AI:

→ **Understanding AI bias** (Common Sense Education)

- [Lesson plan](#), [slides](#)

→ **How AI bias impacts our lives** (Common Sense Education)

- ◆ [Lesson plan](#), [slides](#)

Video describing issues with facial recognition and its consequences:

→ [Gender Shades](#)

Biases in the data and in the output

Do these images reflect the reality? Do they reinforce stereotypes?

“a plumber”



“a security guard”



“a teacher”



Images generated with [Stable Diffusion](#) in December 2023

Biases in the data and in the output



Examples of biases and their consequences:

Gender Bias in Amazon's AI Recruiting Tool: In 2018, Amazon dropped an AI recruiting tool because it exhibited gender bias. The system was trained on resumes submitted to the company over a 10-year period predominantly from men. The AI system learned to favor male candidates and downgraded resumes that included words like "women's" or had affiliations with women's organizations.

Racial Bias in COMPAS Risk Assessment Algorithm: The COMPAS algorithm is used in the United States to assess the risk of criminal re-offending. A 2016 investigation found that the algorithm was more likely to wrongly classify Black defendants as high risk for re-offending, while wrongly classifying white defendants as low risk.

Bias in Google Photos Image Classification: In 2015, Google Photos' image classification algorithm misidentified Black people as gorillas. The incident highlighted the potential for AI systems to make offensive classifications

Racial Bias in Facial Recognition Systems: In 2018, the American Civil Liberties Union (ACLU) found that Amazon's facial recognition technology falsely matched 28 members of the U.S. Congress with criminal mugshots. A disproportionate number of false matches involved people of color.

Gender bias and advertisement: In 2019, Facebook was allowing its advertisers to target ads according to gender, race, and religion. For instance, women were prioritized in job ads for roles in nursing or secretarial work, whereas job ads for janitors and taxi drivers had been mostly shown to men, in particular men from minority backgrounds.

Information integrity and AI

What is information integrity?

Information produced which is:

- Accurate
- Trustworthy
- Coherent

This means that people **can rely on the accuracy of the information they access while being exposed to a variety of ideas.**

Information integrity is linked to human rights and supports democratic societies.

Information integrity and AI

Issues

- Generative AI can sometimes “hallucinate”
- AI makes it easy to create large amounts of content which can result in an increase in the spread of fake news
- AI will often suggest stereotypical information that excludes minority voices

Possible solutions

- Learn to recognize reliable sources of information
- Do a fact-checking activity
- Use AI generated images to lead a discussion on stereotypes and minority voices
- Use an AI tool to generate a summary to encourage learners to critique the result (is it a good summary, are there important points missing?)
- Use an article that deconstructs a fake news to raise awareness among learners about its spread
- Use AI tools that provide the source where the information comes from (Copilot, Gemini, Perplexity)

Information integrity and AI

Examples of AI generated news content

- [Unusual Beasts](#)
- [Microsoft Choosing AI to Run MSN, Not Journalists](#)
- [Sports Illustrated accused of publishing AI-written articles](#)

Information integrity and AI

Activities and resources to develop facts checking skills

- Do an activity on the identification and consequences of fake news (for example: [Reality Check](#) - see the [interactive tool](#)) (MediaSmarts).
- Use this list of [criteria](#) (Toronto Public Library) to identify fake news or watch this [video](#) to get familiar with a quick method (MediaSmarts).
- Print a [poster](#) for reference in your classroom.
- During the election period, do an activity on [assessing online information](#).
- Encourage learners to use the site <https://doubtit.ca/> to get better at identifying disinformation

Information integrity and AI

What about deepfakes?

Deepfakes are manipulated audio-visual content created by machine-learning algorithms.

Activities and resources to better understand deepfakes :

- [Interactive modules](#) (MIT) which revisit Apollo 11's moon landing.
- Reverse search image on [Google](#) or [TinyEye](#) to help trace back the source of an image
- Discuss with learners how to be aware of deepfakes and their possible consequences using a real-life example (for example, [Fooled by his son's false voice](#))



Source : [Bibliothèque nationale de France](#)

Information integrity and AI



Image generated with Stable Diffusion

Other challenges brought on by AI


- Phishing emails and social engineering
- Plagiarism
- Copyright infringement
- Abusive or harmful content
- Environmental impact



Thank you!

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Photo by [Jason Leung](#)
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