

Midjourney: "POV a young girl and a robot staring at the horizon at night"

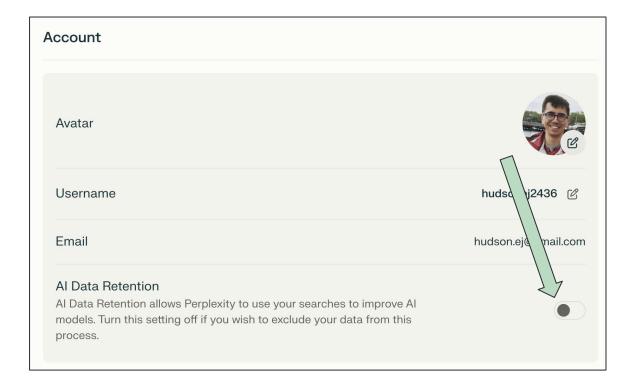
## Open the chatbot Perplexity on your device: perplexity.ai

If you haven't yet, I recommend you create a free account so your interactions aren't limited.

#### Safety and Compliance

- Check age limits in Terms of Use
  - ChatGPT: 13 and up (13-18 requires parental permission)
  - Claude: 18 and up
  - Gemini: 18 and up
  - o Poe: 13 and up
  - Copilot (Bing): 13 and up
  - Perplexity: 13 and up
- Do not input personal identity information (address, names, account numbers/logins, personal photos, etc.)
- Only input data you are comfortable being used to train AI
- Do not use AI for health, relationship, or other kinds of personal advice

#### Go to "Settings," turn off data sharing



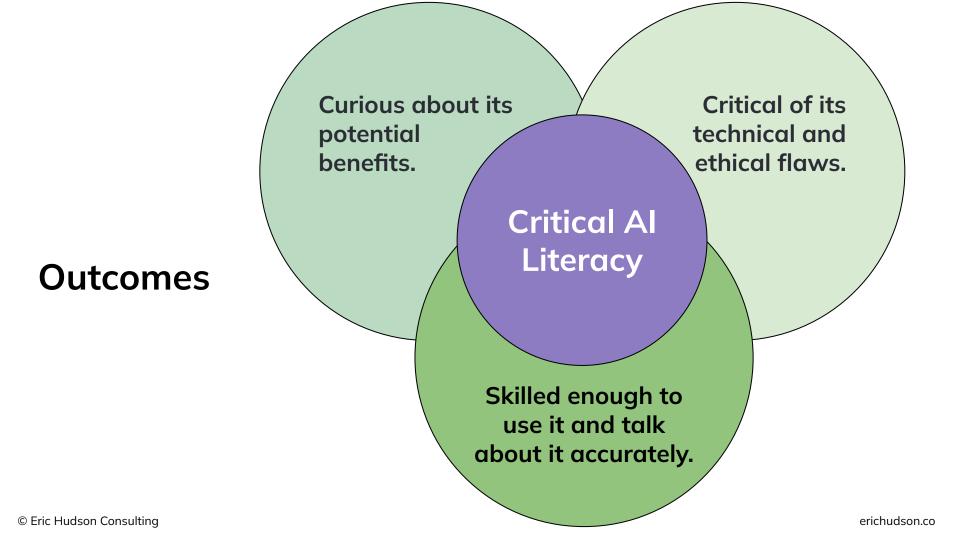
# What's a place you've never been to that you've always wanted to visit?

Using Perplexity, try this prompt:

"Write me a week-long itinerary to [your chosen place]. My requirements are [number of people, age, activity/ability, budget, etc.]. My favorite things about travel are [your favorite things about travel]."

## Follow up

Option 1: Conversational Prompting	Option 2: AI Literacy Check	Option 3: Be Playful
Give Perplexity feedback on its initial itinerary.	Ask Perplexity for a similar itinerary for a place you know well (like here). Compare the	Have Perplexity rewrite the itinerary as a grumpy, uncooperative travel agent.
Ask it revise, redo, reimagine, etc.	quality of the output.	OR
	OR	Have it write the "least fun possible" itinerary for the
	Copy the exact same prompt	same place.
	into Gemini. Compare	
	answers.	



# The Potential and Pitfalls of AI in School

- 1. The Generative AI Landscape
- 2. Approaching AI at School:
  Augmentation over Automation
- 3. Building AI Literacy
- 4. Q&A

# Generative Al: The Current Landscape

## "Generative AI is an 'arrival' technology."

-Eric Klopfer, Justin Reich, Hal Abelson, and Cynthia Breazeal

"Generative AI and K-12 Education: An MIT Perspective"

#### Artificial intelligence is already everywhere

#### 'This Experience May Feel Futuristic': Three Rides in Waymo Robot Taxis

On Monday, Waymo began letting the public pay for 1 driverless cars in San Francisco. The New York Times three reporters around the city to test the service.





Waymo began offering paid driverless taxi rides in San Francisco despite the safety concerns of some city officials. Andri Tambunan and Jason Henry for The New York Times

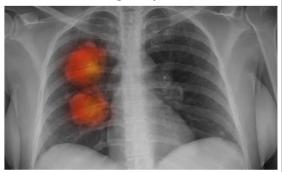


FRAN (face re-aging network) is a neural network that's been trained using thousands of images of synthetic human faces, projecting how an actor's face could look on camera at different stages of life. Image: Disney

NEWS | 13 November 2023

#### New artificial intelligence tool can accurately identify cancer

Exclusive: algorithm performs more efficiently and effectively than current methods, according to a study



■ Lung cancer is the biggest worldwide cause of cancer death, and accounts for 21% of cancer deaths in the UK. Photograph: Cultura Creative/Alamy

Doctors, scientists and researchers have built an artificial intelligence model that can accurately identify cancer in a development they say could speed up diagnosis of the disease and fast-track patients to treatment.

# This AI robot chemist could make oxygen on Mars

Cancer

The system uses Martian materials to produce catalysts that release oxygen from water.

© Eric Hudson Consulting

# "Al" for Our Session = **Generative Artificial Intelligence**

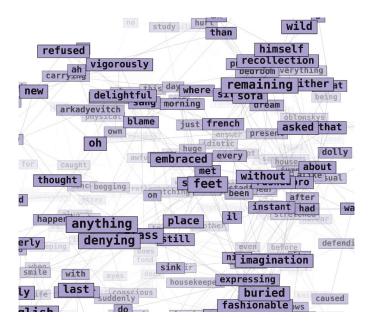
- Large language models (LLMs)
   use data scraped from internet to
   create text, images, and video.
- Prediction-based: think a very sophisticated version of auto-complete.
- Core Models: GPT (OpenAI), Gemini (Google), Claude (Anthropic), Llama (Meta)

What is a **tidy** thing to eat pasta with?



What is a **nice** thing to eat pasta with?





Source: The Guardian

## Phase 1: Chatbots (not just ChatGPT!)





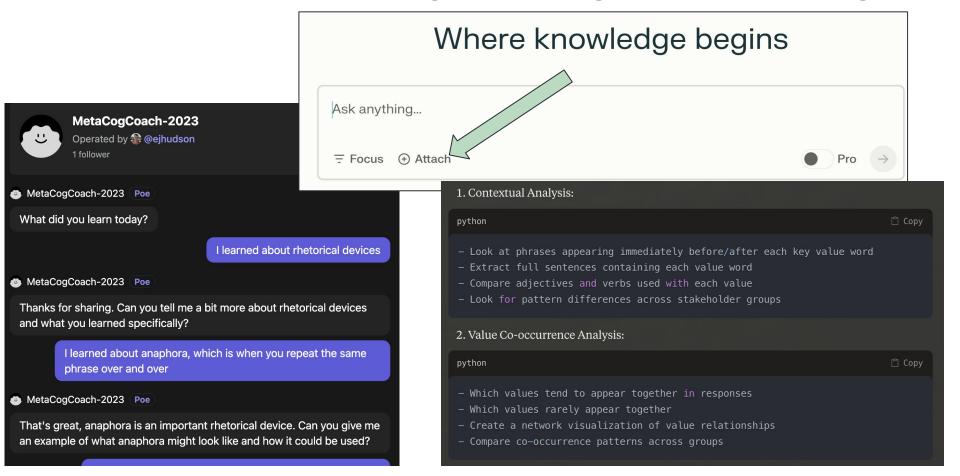








## Chatbots for Chatting, Writing, and Reading



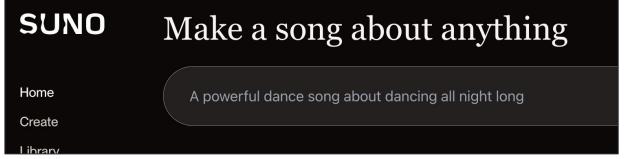
## **Phase 2: Multimodality**











#### Phase 2: Multimodality

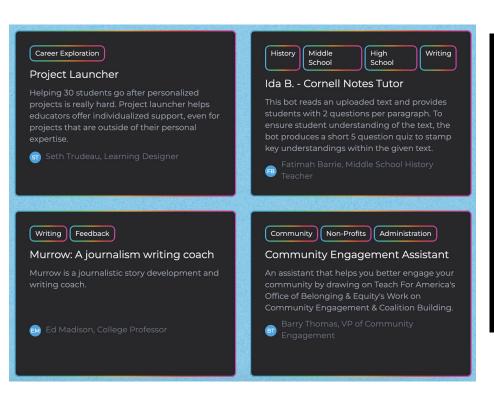
New York Times technology columnist Kevin Roose wrote recently that educators should "assume that 100 percent of their students are using ChatGPT and other generative AI tools on every assignment, in every subject, unless they're being physically supervised inside a school building." Given this reality, how might we as educators engage with and learn from students when it comes to AI? Rather than ban AI, how might we collaborate with students to understand both its power and its pitfalls? This virtual intensive will introduce some guiding principles, talking points, and sample activities we can do with students to begin a conversation with them about how we might use AI for learning, not instead of it.

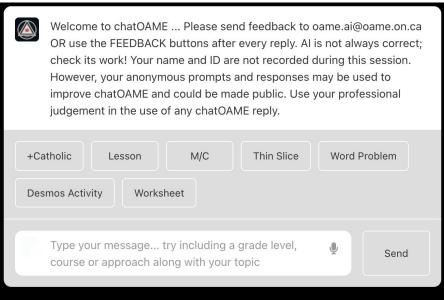
《纽约时报》科技专栏作家 Kevin Roose 最近写道, 教育工作者应该"假设 100% 的学生在每个科目的每项作业中都使用 ChatGPT 和其他生成式 AI 工具, 除非他们在教学楼内受到实际监督。"鉴于这一现实, 当谈到人工智能时, 我们作为教育工作者如何与学生互动并向他们学习?我们不应该禁止人工智能, 而是如何与学生合作来了解它的力量和陷阱?这个虚拟强化课程将介绍一些指导原则、谈话要点以及我们可以与学生一起进行的示例活动, 以便与他们开始对话, 讨论我们如何使用人工智能进行学习, 而不是取代它。



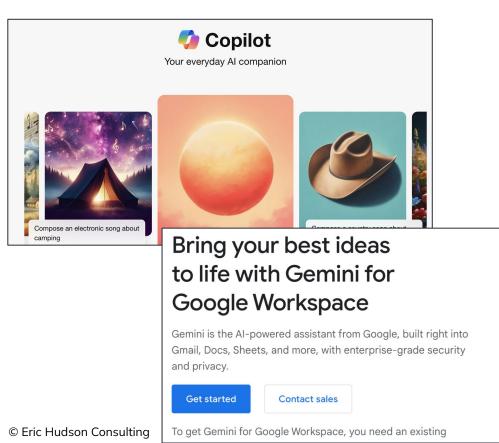


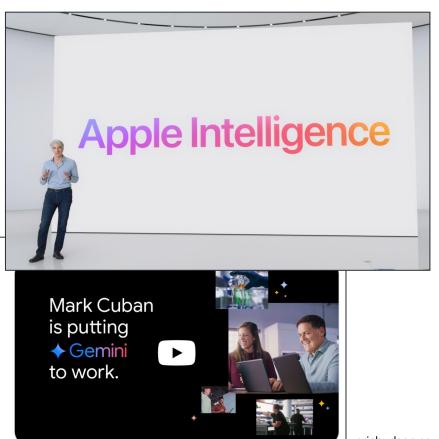
#### **Phase 3: Customizable Bots**





#### Phase 4: Integration



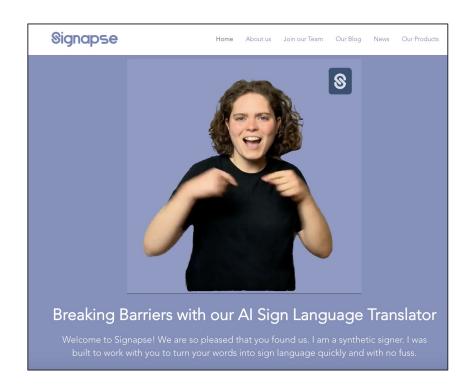


erichudson.co

## **Phase 5: Agents**



#### Can Al Make the World a Better Place?





#### Can Al Make the World a Better Place?

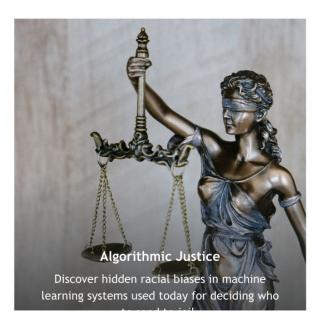
As a Teen, She Loved Video Games. Now She's Using A.I. to Try to Quash Malaria.

Rokhaya Diagne, a 25-year-old A.I. entrepreneur in Senegal, is part of a subset of Africa's enormous youth population that is confident technology can solve the continent's biggest problems.



#### Can Al Make the World a Better Place?









#### Worries | AI will do more harm than good

ARTIFICIAL INTELLIGENCE

Victim of deepfake porn at NJ high school pushes for federal law targeting Al-generated explicit content



The Times Su Over A.I. Use Google promised a bette experience – now it's te glue on our pizza

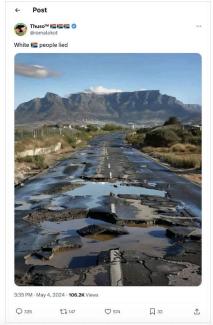
Millions of articles from The New York Times were used to train chatbots that now compete with it, the lawsuit said.

SOUTH AFRICA • 4 MAY 2024

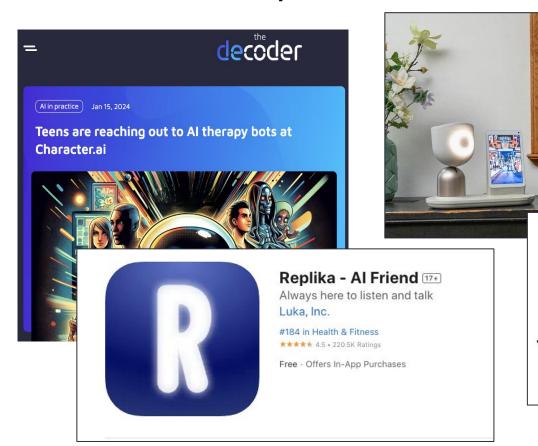
#### Al-generated potholes warn off South African voters

ELECTION | 29 MAY 2024

South Africa • Image • Facebook • X/Twitter • Instagram • Reddit



#### **Worries** | Companion Bots

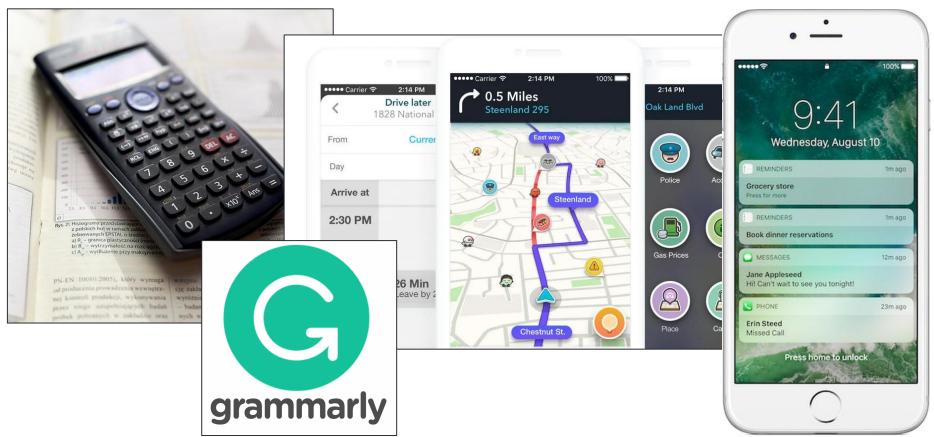


THE SHIFT

## Can A.I. Be Blamed for a Teen's Suicide?

The mother of a 14-year-old Florida boy says he became obsessed with a chatbot on Character.AI before his death.

## Worries | Overreliance/Cognitive Offloading

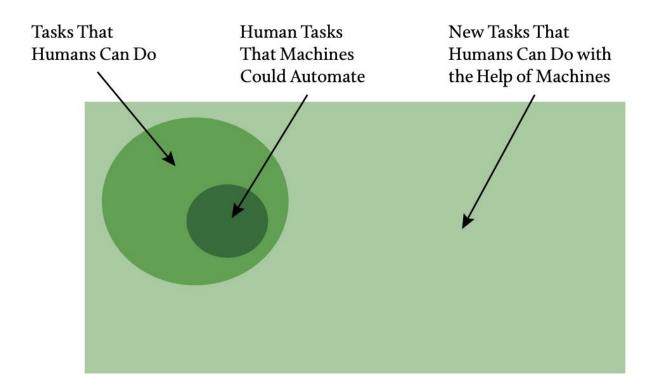


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# Using AI at School: Augmentation over Automation Assistance over Cheating

#### **Augmentation over Automation**

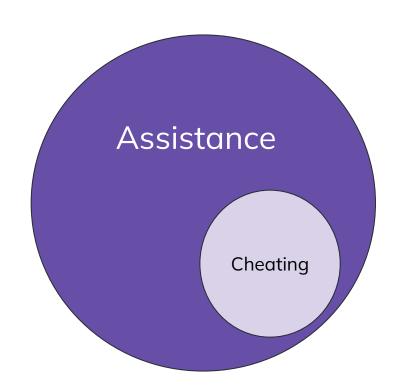


Erik Brynjolfsson, "The Turing Trap"

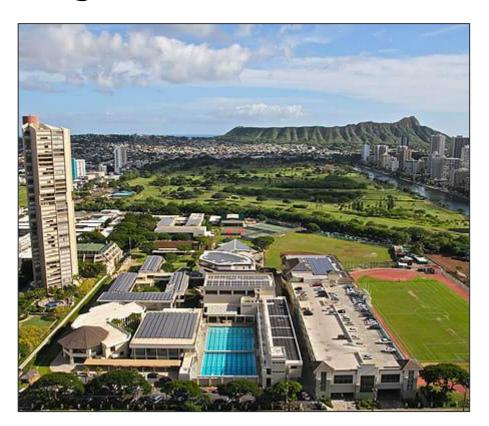
#### **Assistance over Cheating**

"When we were having a discussion in my department, I said, try not to use the word 'cheating.' Because the teacher was like, well, they're going to have all these ways to cheat. And I said, maybe replace the word 'cheating' with 'assistance.'"

-Cherie Shields, English Teacher, Oregon, USA, "ChatGPT Transforms a Classroom"



#### **Augmentation at School**

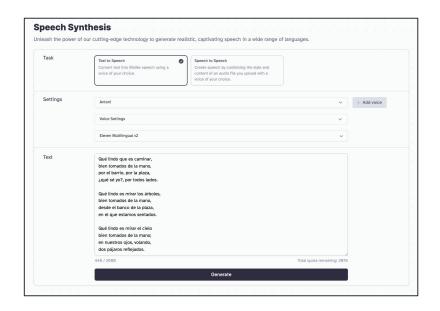


- Second graders now have grade-level texts on hard-to-source subjects, (e.g. Okinawan culture).
- In AP Chinese, the use of AI-generated materials eliminated textbook costs.
- A faculty-student developed local LLM (Large Language Model) has been used to analyze data in advanced research classes.

Source: "An Uncertain Future: An AI Resource Guide for Independent School Trustees" by ATLIS

'Iolani School (HI)

#### **Augmentation at School**





#### **Ensworth School (TN)**

#### **Augmentation at School**



Landmark School (MA)

"Administrators and teachers at Landmark are exploring, experimenting and debating the role of AI in building, not bypassing, the fundamental skills of literacy. Preliminary conclusions show AI has profound opportunities for individualizing instruction for students with high intellectual capacity and relatively low decoding skills."

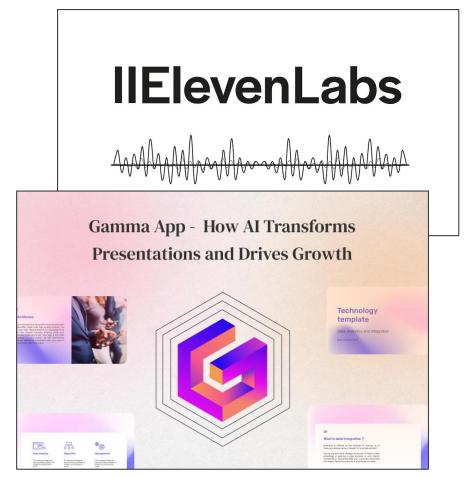
Source: "An Uncertain Future: An AI Resource Guide for Independent School Trustees" by ATLIS

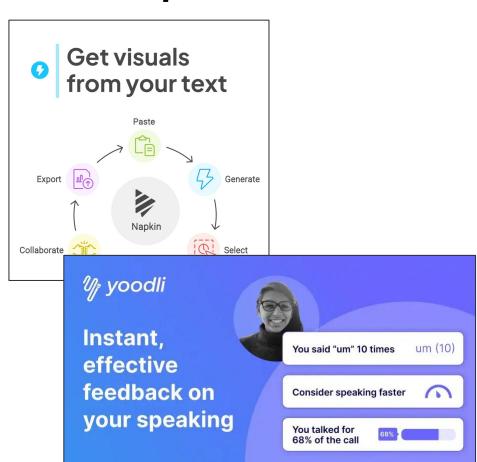
## Teaching Tools: MagicSchool, Brisk



For Teachers

### Multimodal: Eleven, Gamma, Napkin, Yoodli





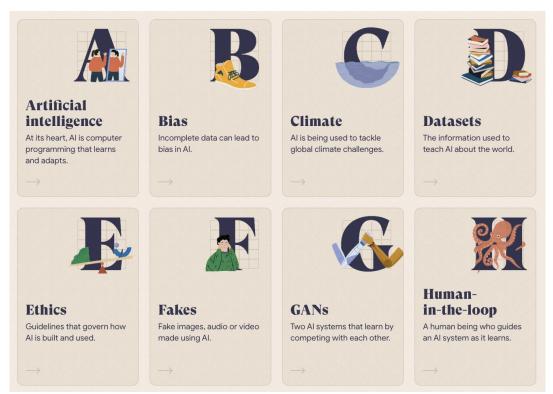
# Building Al Literacy

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  - o Poe: 13 and up
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- Do not input personal identity information (address, names, account numbers/logins, personal photos, etc.)
- Only input data you are comfortable being used to train AI
- Do not use AI for health, relationship, or other kinds of personal advice

### Considerations for Younger Students (<13)

- Prioritize AI "readiness"
- Focus on AI's impact on tools students already might use: YouTube Kids, code.org, Roblox
- Educate families and engage them as resources
- Consider using AI in presence of students (image generation, writing stories/poems, refining prompts, etc.)



The A-Z of AI

П	
Jnplugged	

Name: \_\_\_\_\_

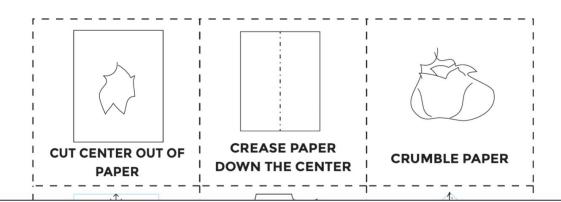
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#### **Real-Life Algorithms**

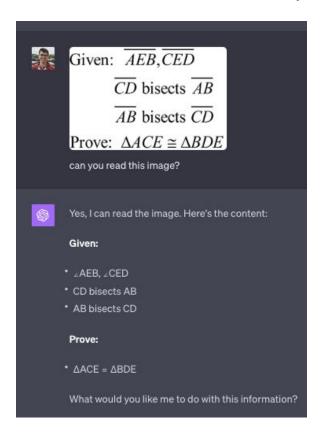
Paper Airplane Worksheet

You can use algorithms to help describe things that people do every day. In this activity, we will create an algorithm to help each other make paper airplanes.

Cut out the steps of making an airplane below. Glue the six the correct steps, in order, onto a separate piece of paper. Trade your finished algorithm with another person or group and let them use it to make an actual flying model paper plane!



### Critical Al Literacy | Prior Knowledge



- Is AI accurate in its answer? How do you know? If you don't know, what do you need to do to find out?
- Where did AI get this information? How did it compose this response?
- What grade would you give AI for this output? What follow-up questions or feedback should we give it to make it better?
- How could you do better than AI on this assignment?
- If AI can do a pretty good job on this assignment with just a prompt or two, what's the point of this assignment?



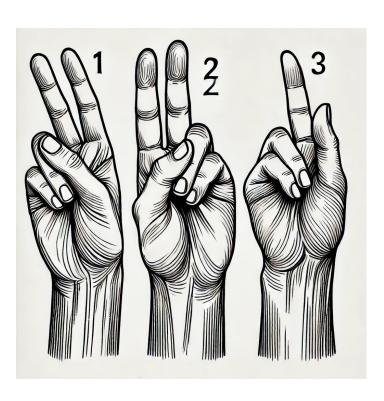
Does it look like a human made this?

Is this accurate?

Where did AI get this information?

Is this art?

#### Critical Al Literacy | Al Weaknesses



ARTIFICIAL INTELLIGENCE / TECH / GOOGLE

Google promised a better search experience – now it's telling us to put glue on our pizza

#### Ethics: Generative AI in learning

**Five Lesson Mini-Unit** 

#### Rationale / Overview

As background, it is recommended that teachers of this unit watch all five short videos from Wharton Interactive Crash Course: Practical AI for Instructors and Students with Wharton Interactive's Faculty Director Ethan Mollick and Director of Pedagogy Lilach Mollick and/or read over "Teaching AI Ethics" by Leon Furze. As well, this academic paper from Ethan Mollick and Lilach Mollick describes seven approaches to using AI (as a tutor, a coach, a mentor, a teammate, a tool, a simulator, and a student) and gives specific prompts and examples for each. This will be helpful in aiding students and teachers to have a common language for creating ethical GenAI practices in aid of learning.

This five lesson mini-unit is designed to introduce students to the opportunities and challenges embedded in using AI in their learning and to invite student voice in the creation of UCC's guidance on GenAI use in teaching and learning.

#### Scope and Sequence

Uses of GenAl in Learning (Case Lea	otecting the earning: GenAl		Lesson 4: Gen Al Data Privacy and training issue	Lesson 5: Al & Sustainability Concerns / Proxy relationship
-------------------------------------	--------------------------------	--	--	--

#### **Upper Canada College (Ontario)**

#### MIT Teaching Systems Lab **Teacher Survey**

- Listen closely to students.
- Play! Embrace the weird.
- Teach students to use it for parts, not wholes.
- Engage students with the bigger issues.
- Gift students with offline spaces.



#### **TEACHERS ON AI**

Here are some ideas based on interviews with classroom teachers around the country on how they have been adapting to the arrival of generative Al technologies (GenAl). such as ChatGPT, in learning environments.





#### LISTEN CLOSELY TO STUDENTS

teachers and schools can best support them. Consider creating a Student Al Advisory Board to inform school policy or instructional changes.

One school district in New York invited a panel of students to be interviewed during a professional development day; teachers reported gaining new insights into how and why students use GenAl

wonderfully strange content instantly is fun, and a great way to start building knowledge about Al's strengths and weaknesses.

To spark student interest, Mr. Kieffer in Illinois uses ChatGPT to generate math word problems that include his own classroom lokes or a specific set of student interests.

#### TEACH STUDENTS TO USE IT FOR PARTS, NOT WHOLES

Students are tempted to use GenAl to write whole answers or entire essays. Show them how it can help with specific parts of their work without compromising on the wider learning goals you've set for them.

Mr. Hunt in Washington D.C. shows students how to prompt a GenAl tool to rewrite the abstract of an academic paper at a 9th-grade level so that his students can understand the gist of the paper's findings as they search for potential sources for



#### ENGAGE STUDENTS WITH THE BIGGER ISSUES

academic integrity, from environmental costs to intellectual property rights to the spread of misinformation. Use debates, Socratic seminars, or other discussion formats to get students thinking and talking about the many issues related to

Powering Al tools like ChatGPT demands a tremendous amount of energy and water. How might we deal environmental costs of this technology?

created by a human to be considered authentic?

Bots learn from humans and humans are flawed. How do we address the challenge of GenAl regurgitating falsehonds and harmful language circulating online?

#### **GIFT STUDENTS WITH** OFFLINE SPACES

Calls for flipped classrooms, processfocused assessments, and a return to handwriting aren't new. Neither is the initial shake-up caused by the arrival of a new technology, be it a calculator or a smartphone. What might be different this time? Most K-12 students do not know what a world without internet access in their pocket is like. Consider how important an intentionally created offline space in the classroom might be. Teach students to disconnect from screens and reconnect to their surroundings by providing a literal space and time in their otherwise hyper-connected day to speak, handwrite, and look and listen to each other's human faces.

#### A NOTE FOR ADMINISTRATORS

Include teachers in decision-making about policies and technology access or subscriptions. If any new rules or policies are put in place, be mindful of providing corresponding resources and support. Al-powered tools aren't a substitute for investing in high quality curriculum, instructional materials, and especially time for teachers to learn and plan!



Remember! This technology and the best teaching practices associated with it are shifting all the time. What makes sense today might not make sense tomorrow. Be compassionate with yourself as you adapt! We invite you to share your thoughts with us at tsl.mit.edu/ai

- 1. Skim the menu of activities.
- 2. Find one or two that you want to try.\*
- 3. Try the prompts in a chatbot or other tools.

\*Adjust as needed to create something useful for you!

Enter this url into your browser:

tinyurl.com/2501Prompt



## Thank you!



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