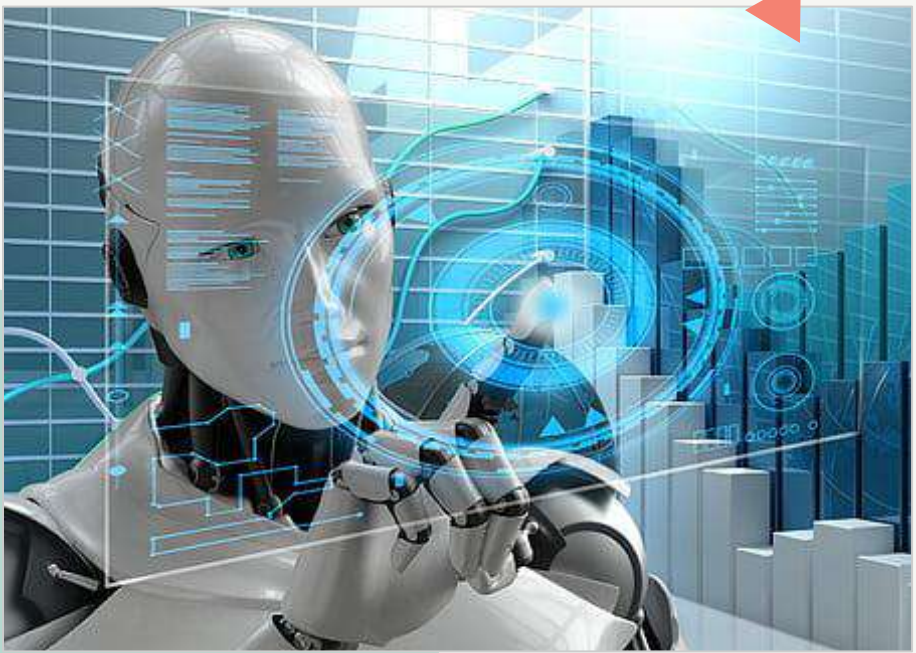

Artificial Intelligence
Thank you for joining me today.
Our Webinar “AI Education” will start shortly

Jen Olmsted

AI Education

How do we future proof our curriculums?

KOGNITY



As Heads, we need to create an innovative and pioneering vision, mission and direction for our schools.

How can we move the vision of our schools beyond *Global Citizenship* and *Future Leaders* to something truly groundbreaking?

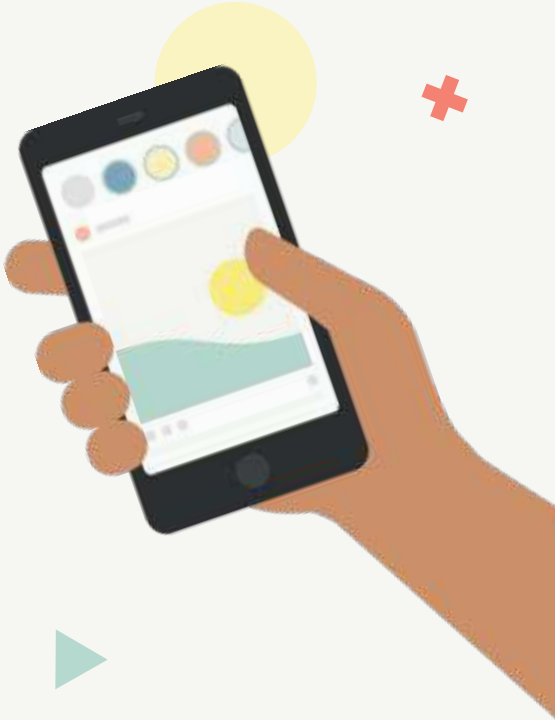
A SCHOOL VISION and MISSION?

Creating an AI mindset.

A fully integrated program which develops a mindset for the 21st Century. Students develop the mindset required to be future leaders in a world of AI. Students will understand how to use Big Data to create algorithms and coding to solve real world problems. AI is interdisciplinary, inquiry based and open ended.

How do we raise conscientious consumers and designers of AI?

Children today live in the age of artificial intelligence. On average, US children tend to receive their first smartphone at age 10, and by age 12 over half of all children have their own social media account. Additionally, it's estimated that by 2022, there will be 58 million new jobs in the area of artificial intelligence. Thus, it's important that the youth of today are both conscientious consumers and designers of AI.



What is A.I.?

Is this artificial intelligence?

Is this artificial intelligence?

Is *predictive text* artificial intelligence?

Is this artificial intelligence?

Is *instagram* artificial intelligence?

Is a *google search* artificial intelligence?

Is the *automatic play function* of youtube artificial intelligence?

YouTube

How far has AI come?

Deep Thought (1989)

Huge leap forward in computer chess programs with Deep Thought

Deep Thought could search about 500 million positions per second

Deep Thought

AI versus Human Intelligence

Humans still in the lead…..

Deep Blue (1996)

- The Deep Thought team moved to IBM, and renamed their project Deep Blue, and continued to develop their Chess AI

In 1996 - Gary Kasparov, widely considered the greatest chess player in history, faced off with IBM's chess-playing computer Deep Blue….

But by 1997 - Gary Kasparov and Deep Blue played a 6-game rematch…..

Deep Blue

The 1997 match: Deep Blue vs Kasparov

Kasparov the moment he lost the game

Deep Blue in wild celebration

Chess might be easy…..but what about GO?

What about GO?

The game of Go is ancient. Go has simpler rules than chess, but is more complicated. For example, there are 20 opening moves in chess and 361 opening moves in Go. This means that a computer trying to evaluate all 6-move sequences starting from a given position must explore roughly a million times more possibilities in Go than in chess, which quickly becomes intractable.

Does AlphaGo beat the world champion?

What were the techniques that were developed to do so?

AlphaZero and the birth of machine learning

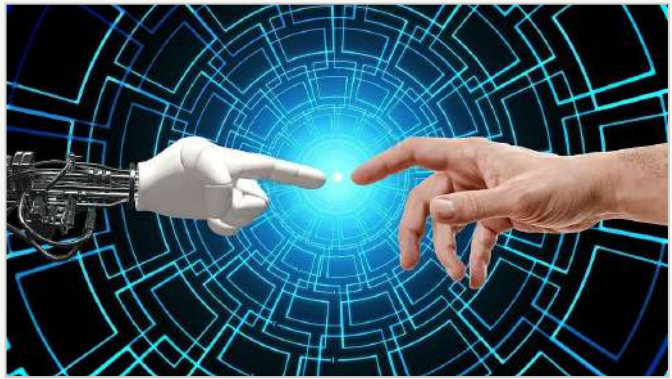
This dramatic success of AlphaZero has sparked the imagination of many people: **if a computer can learn more about chess in ten hours than humans have learned in centuries, how long before computers start to similarly out-perform humans in other disciplines?**

What does that mean for our future?

Watch “The Social Dilemma”

In the chat…

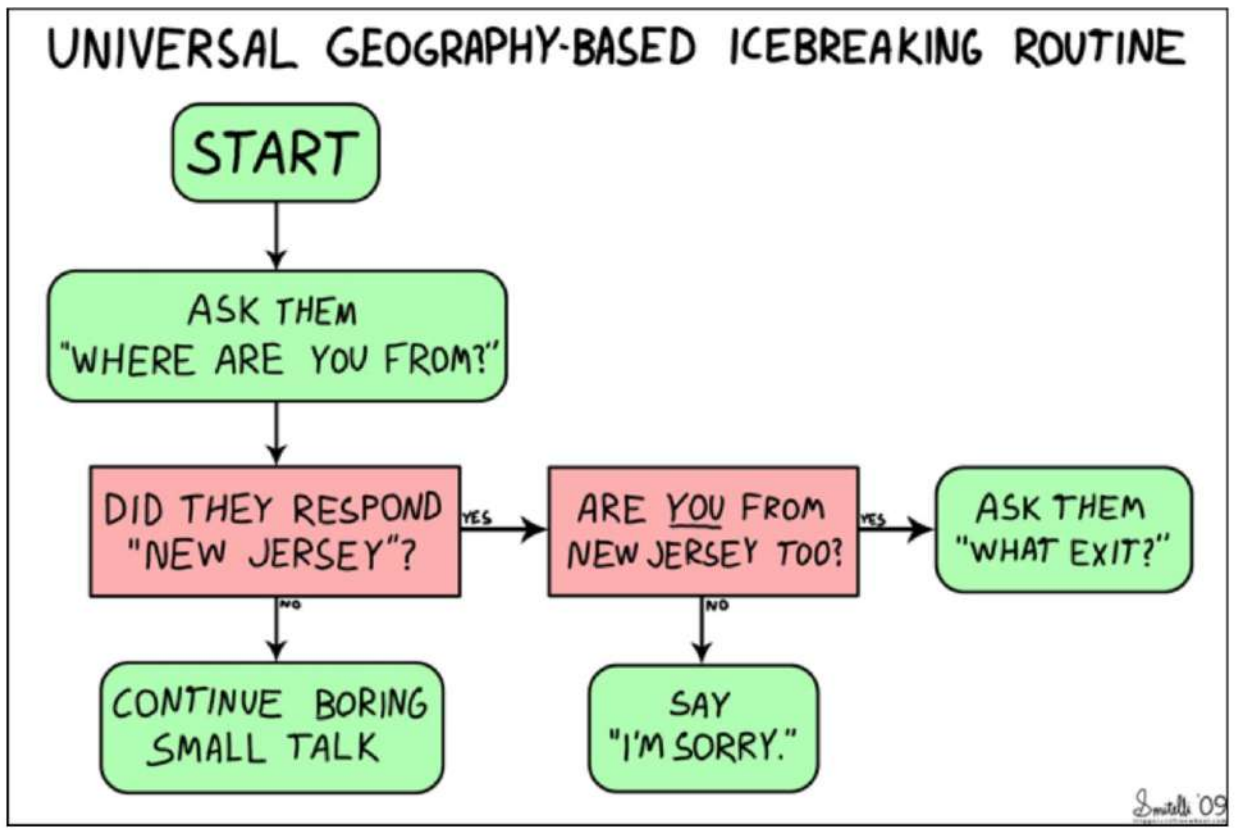
- What shocked you, or surprised you about the trailer documentary?
- Why is an understanding of AI important for our students?



- Record your responses in the chat

Understanding the power of algorithms is key for any Artificial Intelligence curriculum

What is an algorithm?



Write an algorithm for the BEST PB&J*

*Peanut butter and jelly sandwich

How good is your PB&J algorithm?

Which algorithm creates the best PB&J?

The “best” PB&J sandwich could mean a lot

How do algorithms understand what we mean by “best”?

- Best candidate for a job?
- Best Google image search?
- Best Health diagnosis?
- Best facial recognition?

Amazon scraps secret AI recruiting tool that showed bias against women

Millions of black people affected by racial bias in health-care algorithms

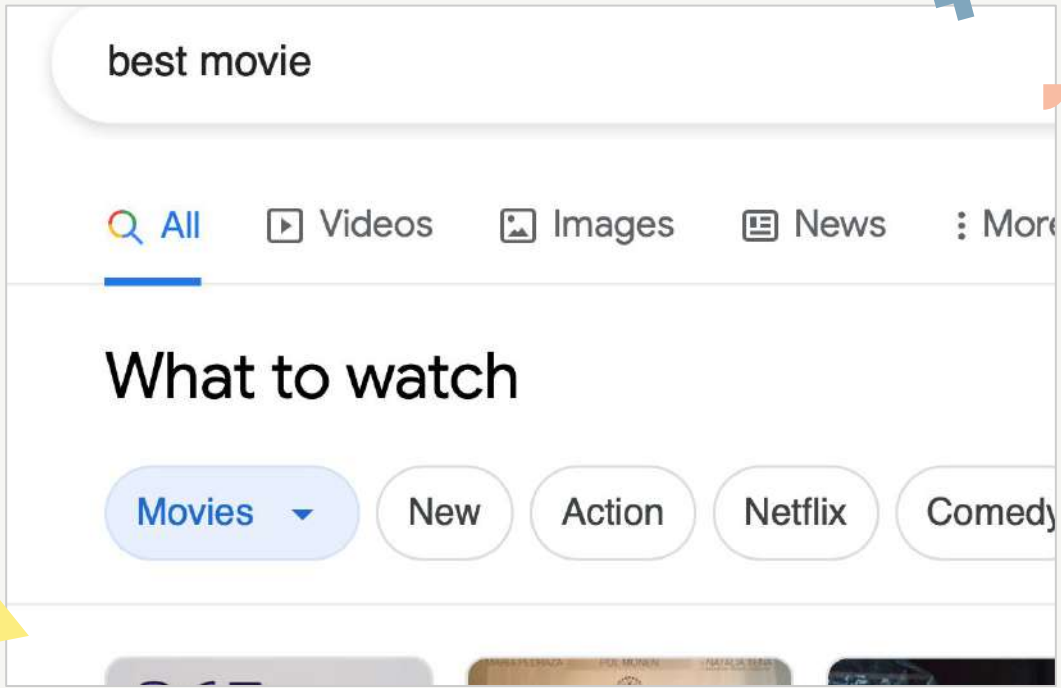
Google 'fixed' its racist algorithm by removing gorillas from its image-labeling tech

Gender Classifier	Darker Male	Darker Female	Lighter Male	Lighter Female	Largest Gap
Microsoft	94.0%	79.2%	100%	98.3%	20.8%
FACE++	99.3%	65.5%	99.2%	94.0%	33.8%
IBM	88.0%	65.3%	99.7%	92.9%	34.4%

Is facial recognition too biased to be let loose?

The technology is improving – but the bigger issue is how it's used.

What about Google search?



In your google search engine type in “best movie”. Share in the chat the movie that comes up for you…….

This brings us back to the Social Dilemma...

The dangers of Algorithms and Social Media

The Social Dilemma focuses on how big social media companies manipulate users by using algorithms that encourage addiction to their platforms. It also shows, fairly accurately, how platforms harvest personal data to target users with ads – and have so far gone largely unregulated.

- Instagram ads
- Auto play on youtube
- Data mining on Facebook

How can we develop an AI mindset in our schools?

How can we prepare students for a future that doesn't exist yet?

How can we develop an AI mindset and future proof our schools?

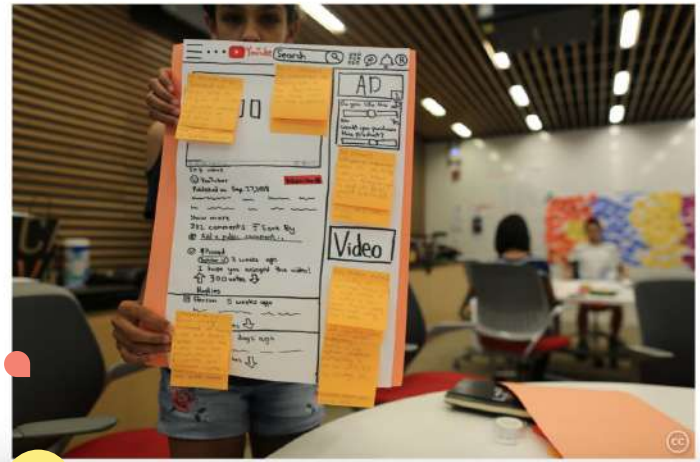
How can we create students who are creators of AI, rather than consumers of AI?

Curriculum from MIT

https://www.media.mit.edu/projects/ai-ethics-for-middle-school/overview/

Developing an AI mindset in our schools

The ultimate goal is to enable students to see artificial intelligence as manipulable—from a technical and societal standpoint—and to empower students with tools to design AI with ethics in mind.



Curriculum uses inquiry and hands-on learning activities.
It explores:

- Algorithms
- The inherent bias in algorithms
- The ethics of algorithms
- Machine Learning
- The scheme of work culminates with the students redesigning the youtube autoplay algorithm.

This curriculum does not require any specialist equipment (only internet access for a few sessions only)
Approx 13 hours of instruction

Thanks for joining me today.
Any questions?