Artificial Intelligence (AI)

Explanations Opportunities Limitations Ethics

11/07/23 School Board Work Session

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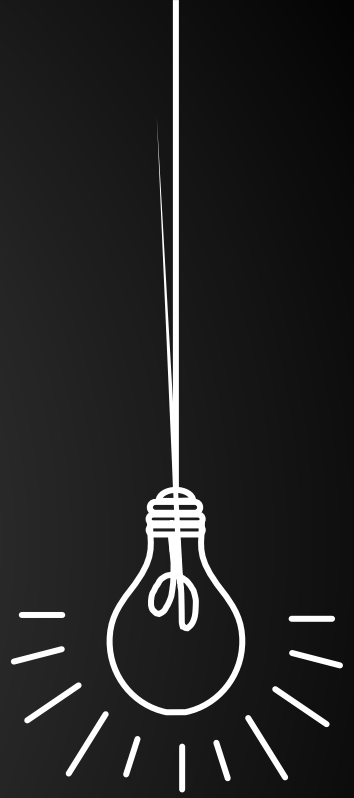
Technology is ubiquitous...

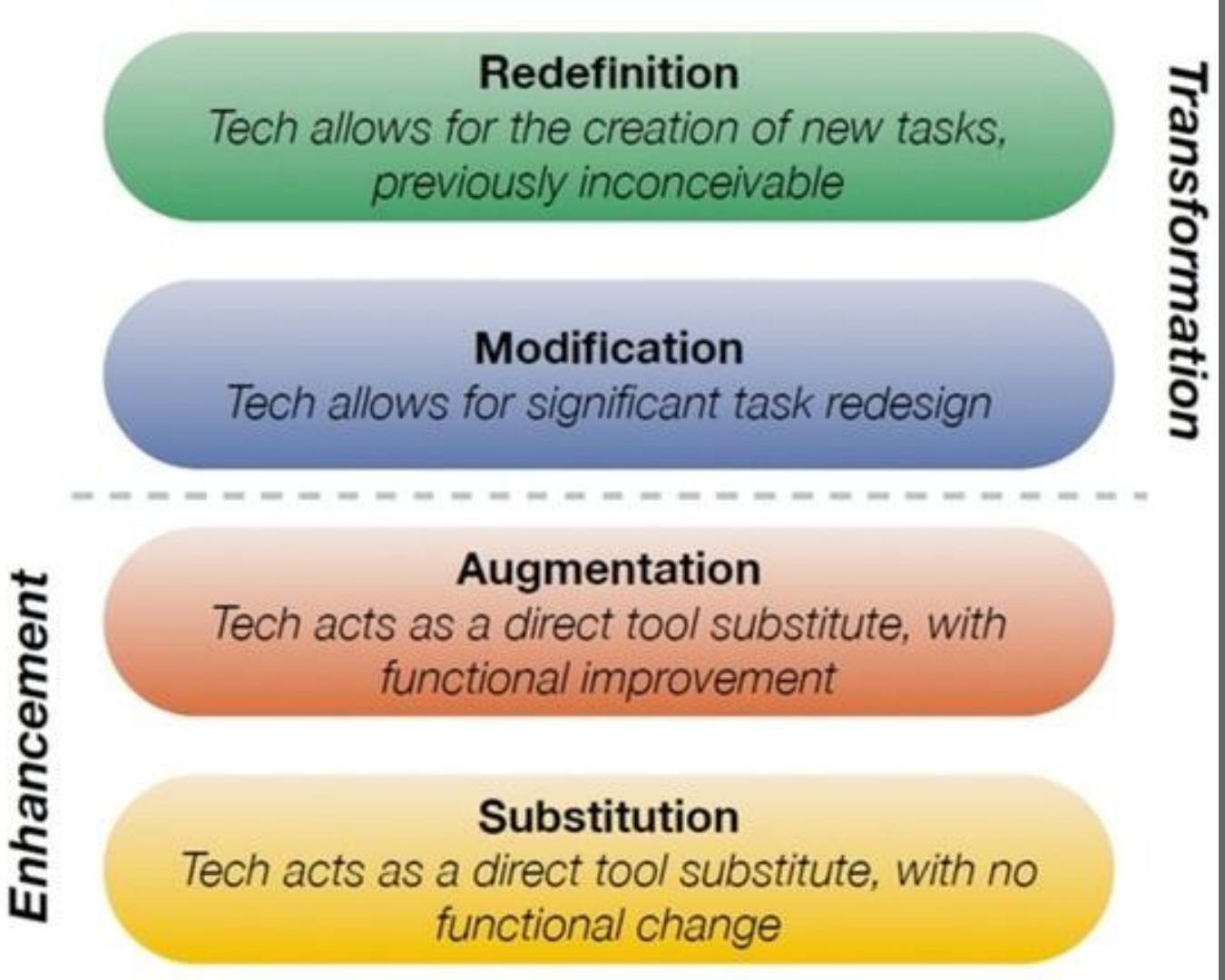
It is not about the tool. It is about the practice.



SAMR

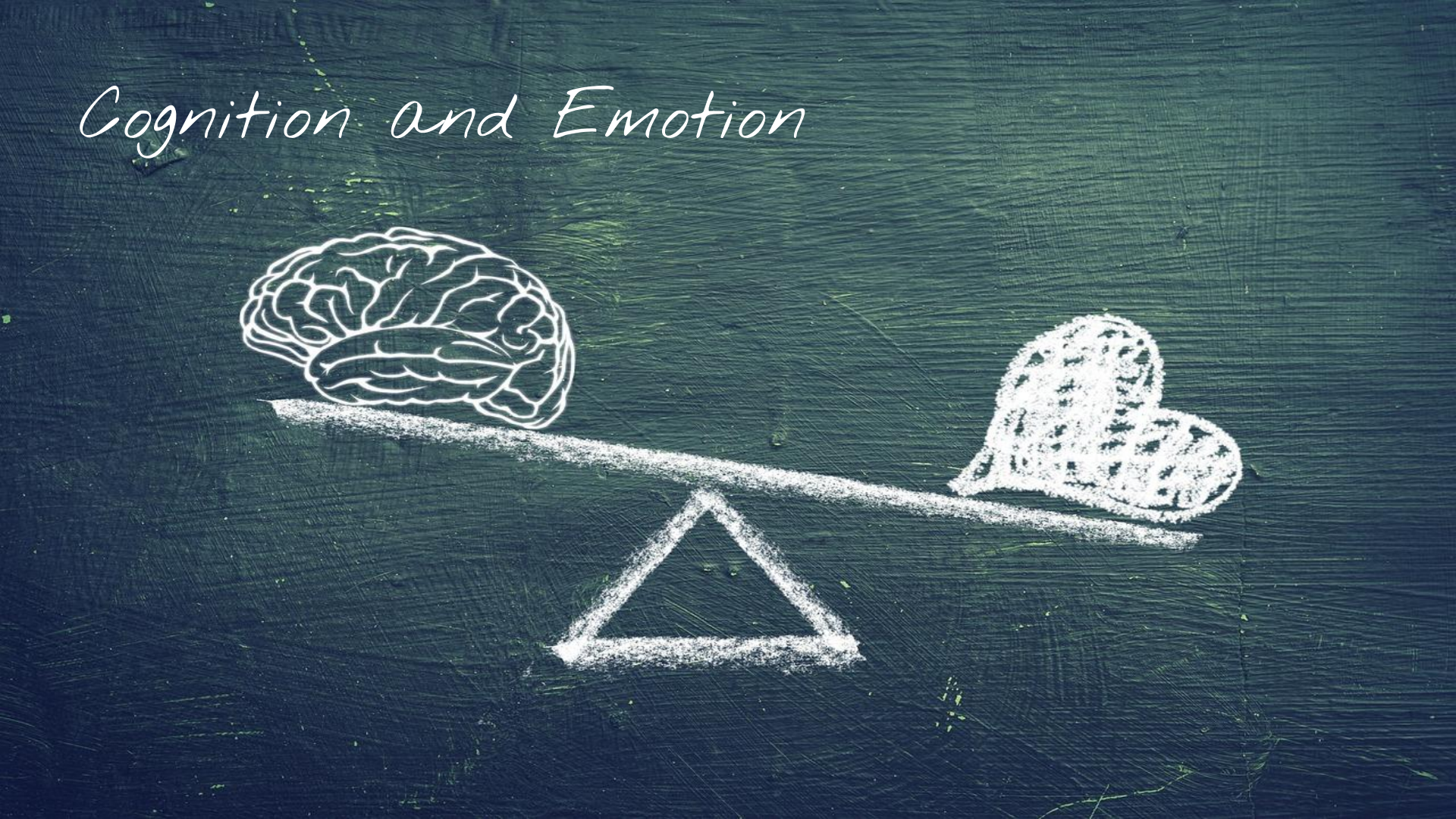
Technology Integration into learning has a purpose…

Want to Know more? Click here!




Educators are designers...

Cognition and Emotion



AP photo

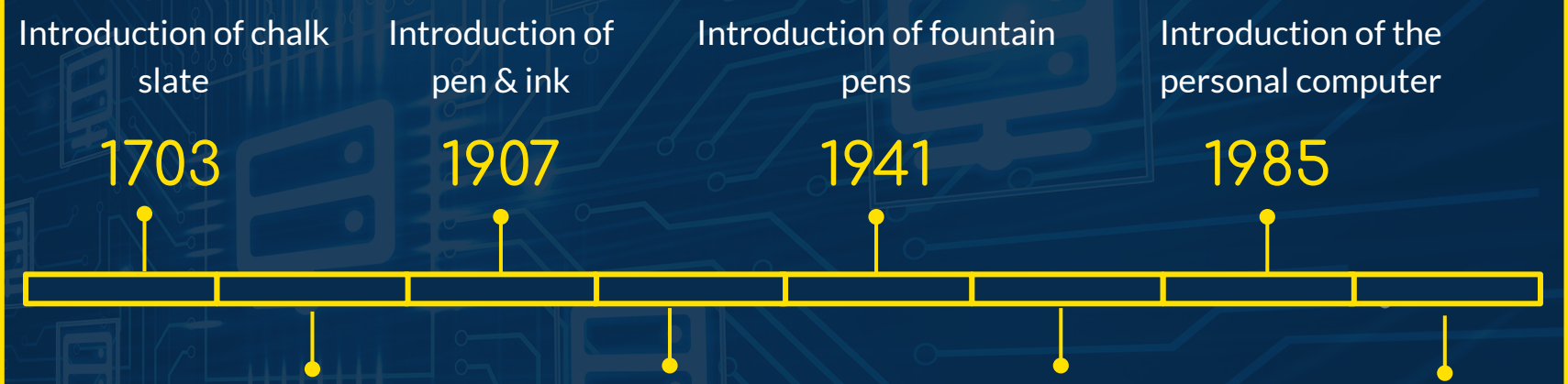
Elementary school teachers picket against use of calculators in grade school

The teachers feel if students use calculators too early, they won't learn math concepts

Math teachers protest against calculator use

"My older kids don't pay any strate," he said. "Teachers are
to an answer being absurd. shy."

Disruptive Innovations in Education



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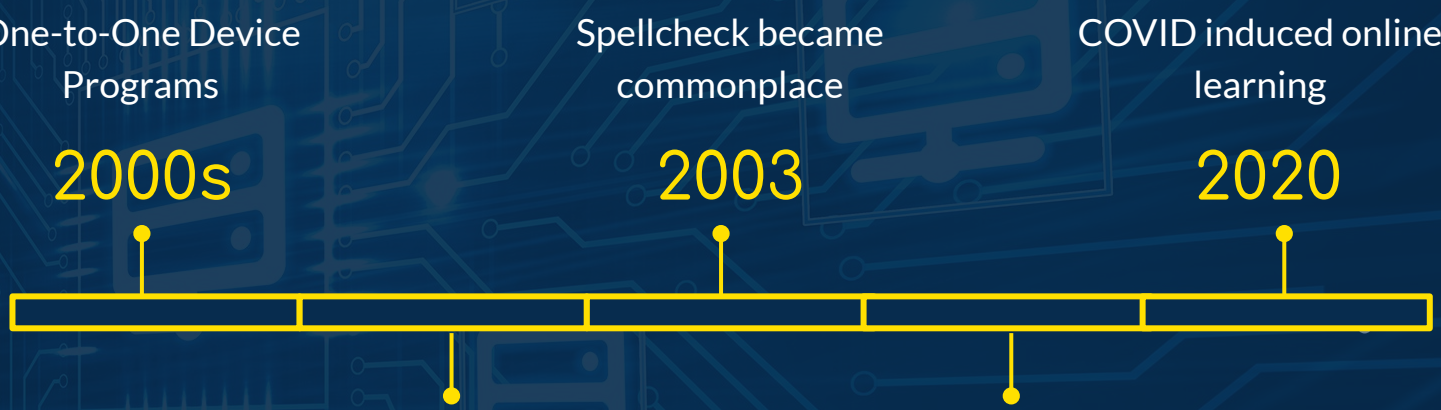
Disruptive Innovations in Education



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What is AI?
Explanations
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SCHOOL DISTRICT

What is AI?

Artificial intelligence and/or machine learning are sets of code that build new understanding from existing underlying data. Unlike search engines (such as Google), AI machines can take huge amounts of data and predict, with strong accuracy, helpful and relevant responses.

Source

3 Basic Types of AI

Reactive

Tools that respond to specific inputs or situations without learning from past experiences (e.g. Alexa, Roomba, chess-playing computer).

Predictive

Tools that analyze historical data and experiences to predict future events or behaviors (e.g. Netflix, credit-scoring systems).

Generative

Tools that generate new content or outputs, often creating something novel from learned patterns (e.g. ChatGPT, Stable Diffusion).

International Society for Technology in Education. (2023, July). *Bringing AI to School: Tips for School Leaders* [ebook]. ISTE. Retrieved 10 27, 2023, from https://cms-live-media.iste.org/Bringing_AI_to_School-2023_07.pdf

Common AI Applications

Navigation apps	Spam filters
Rideshare apps	Online banking
Video previews	Roomba
3D photography	Social Media algorithms
Facial recognition	Amazon recommendations
Smart Assistants (Alexa/Siri)	Grammar and spell check
Autonomous vehicles	Security & Surveillance
Google Search	Finance (automated buying and selling)

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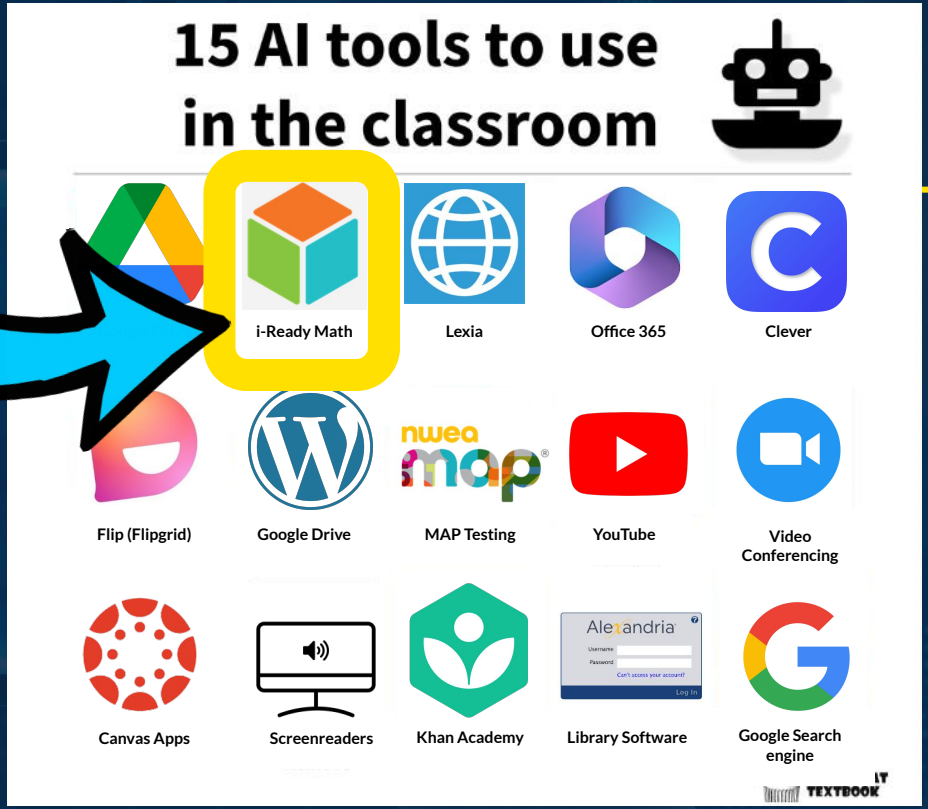
Common AI Tools to use in the KPBSD Classroom



Source

What Can ChatGPT Do?

ChatGPT can engage in text-based conversations with users, responding to their prompts or questions in a conversational manner.

It can provide information on a wide range of topics, including general knowledge, educational content, and practical advice.

It can assist with tasks such as generating text for writing assignments, providing explanations or definitions, and offering suggestions or recommendations.

It can be used for language practice, allowing students to improve their writing, grammar, and vocabulary skills through interactive conversations.

What Can't ChatGPT Do?

ChatGPT is not a human and does not possess human-like consciousness, emotions, or personal experiences.

It does not have access to real-time information, so its responses may not always be up-to-date or accurate.

It does not provide original or creative thinking, as it generates text based on patterns learned from existing data.

It does not replace human teachers or the need for critical thinking, context-awareness, and human judgment in the learning process.

District Examples

Amplify.

CKLA

plug in the text sections to AI and had it rewrite them at lower levels

generate structured scaffolds for sentence starters

generate graphic organizers based on specific readings

generate templated writing pieces for students to support where groups are

What do leading authorities have to say?

ascd ISTE NASSP National Association of Secondary School Principals naesp National Association of Elementary School Principals AASA THE SCHOOL SUPERINTENDENTS ASSOCIATION

Guiding Questions for Learning Leaders

While a lot of exploration is still needed around AI in education, three overarching questions should be front and center for every school leader when it comes to determining the use of AI:

- How can schools use AI to support student learning?
- How can schools prepare students with the skills to thrive in an AI infused world?
- How can AI support educators, both with teaching and by freeing up time to allow them to focus on students?

School leaders should start this transition by engaging their educators first. Once educators are familiar with the technology, they can lead AI explorations appropriately with students.

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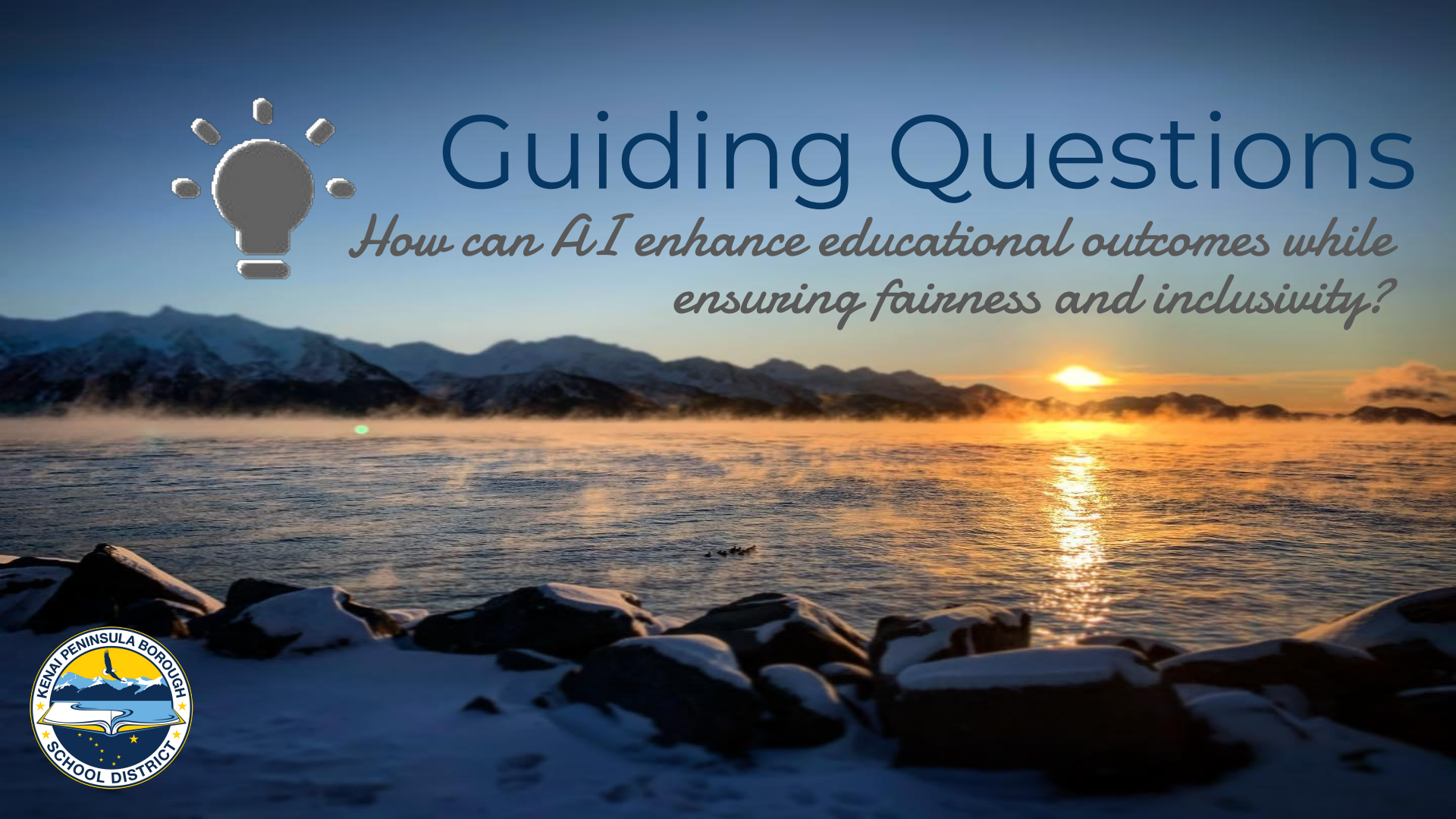
Guiding Questions
How can AI enhance educational outcomes while ensuring fairness and inclusivity?
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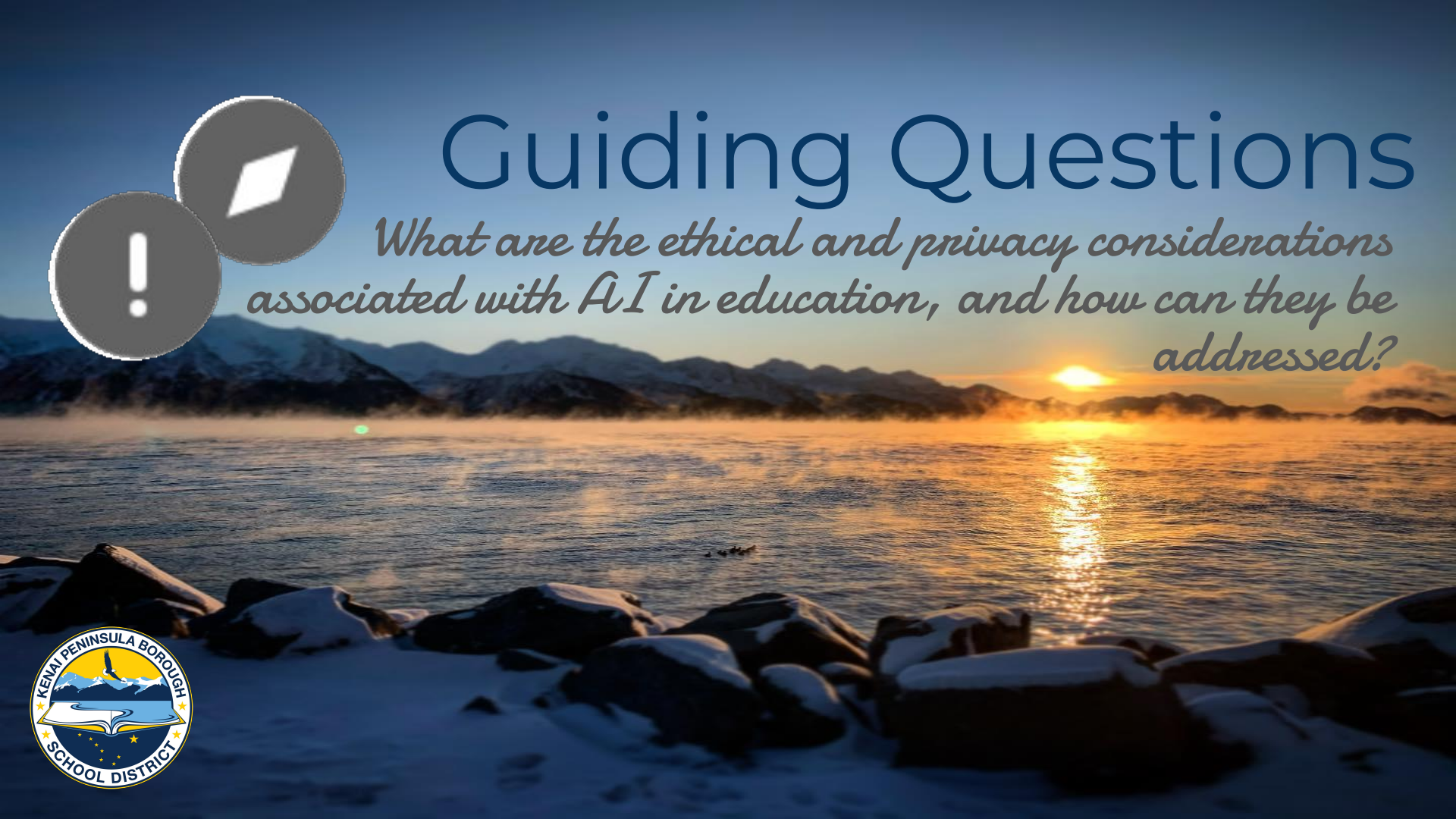
Key Insights

- **AI enables new forms of interaction.** Students and teachers can speak, gesture, sketch, and use other natural human modes of communication to interact with a computational resource and each other. AI can generate human-like responses, as well. These new forms of action may provide supports to students with disabilities.
- **AI can help educators address variability in student learning.** With AI, designers can anticipate and address the long tail of variations in how students can successfully learn—whereas traditional curricular resources were designed to teach to the middle or most common learning pathways. For example, AI-enabled educational technology may be deployed to adapt to each student's English language abilities with greater support for the range of skills and needs among English learners.
- **AI supports powerful forms of adaptivity.** Conventional technologies adapt based upon the correctness of student answers. AI enables adapting to a student's learning process as it unfolds step-by-step, not simply providing feedback on right or wrong answers. Specific adaptations may enable students to continue strong progress in a curriculum by working with their strengths and working around obstacles.
- **AI can enhance feedback loops.** AI can increase the quality and quantity of feedback provided to students and teachers, as well as suggesting resources to advance their teaching and learning.
- **AI can support educators.** Educators can be involved in designing AI-enabled tools to make their jobs better and to enable them to better engage and support their students.

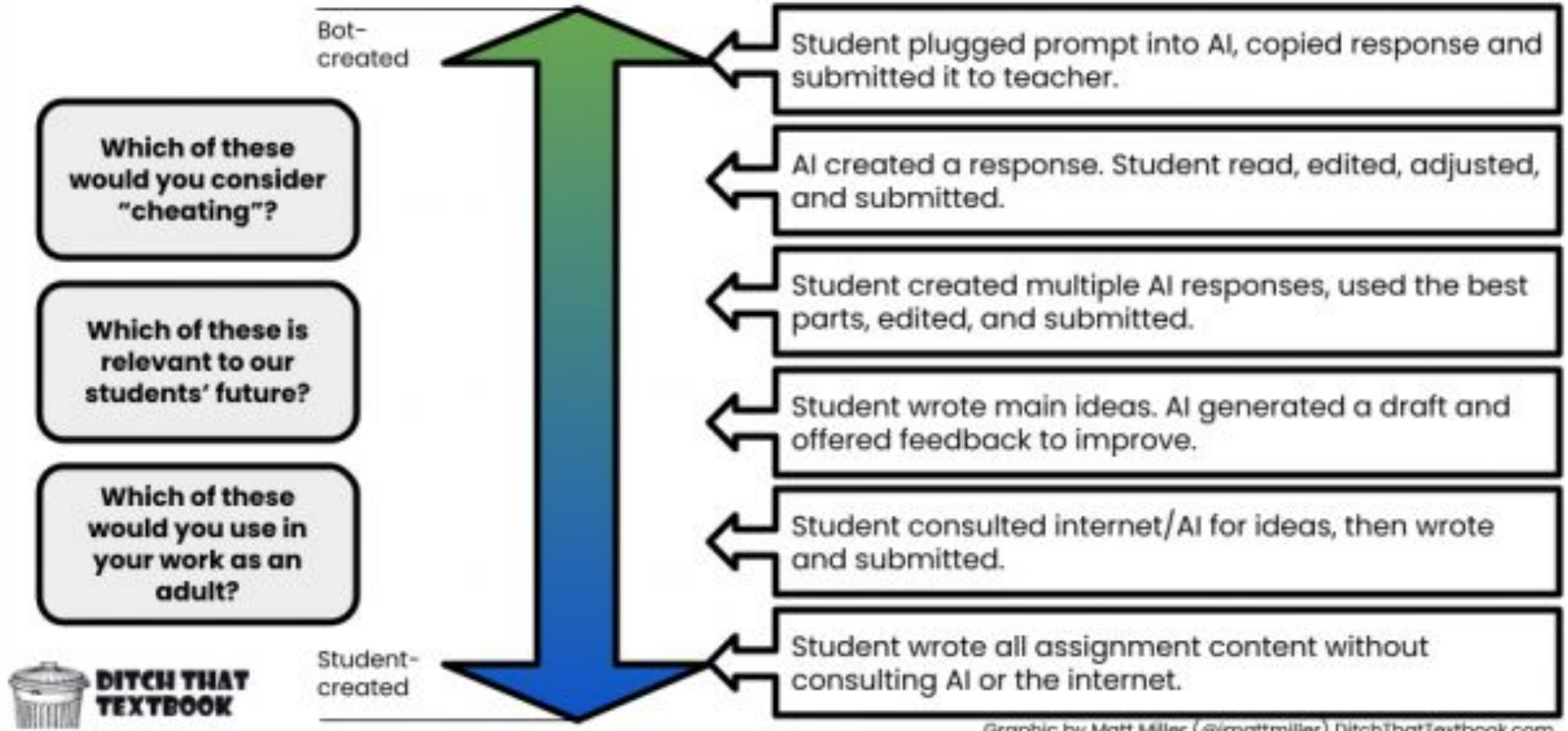
https://tech.ed.gov/ai/

Guiding Questions

What are the ethical and privacy considerations associated with AI in education, and how can they be addressed?



It's time to rethink "plagiarism" and "cheating"



Graphic by Matt Miller (@jmattmiller) DitchThatTextbook.com

WOLFRAM ALPHA

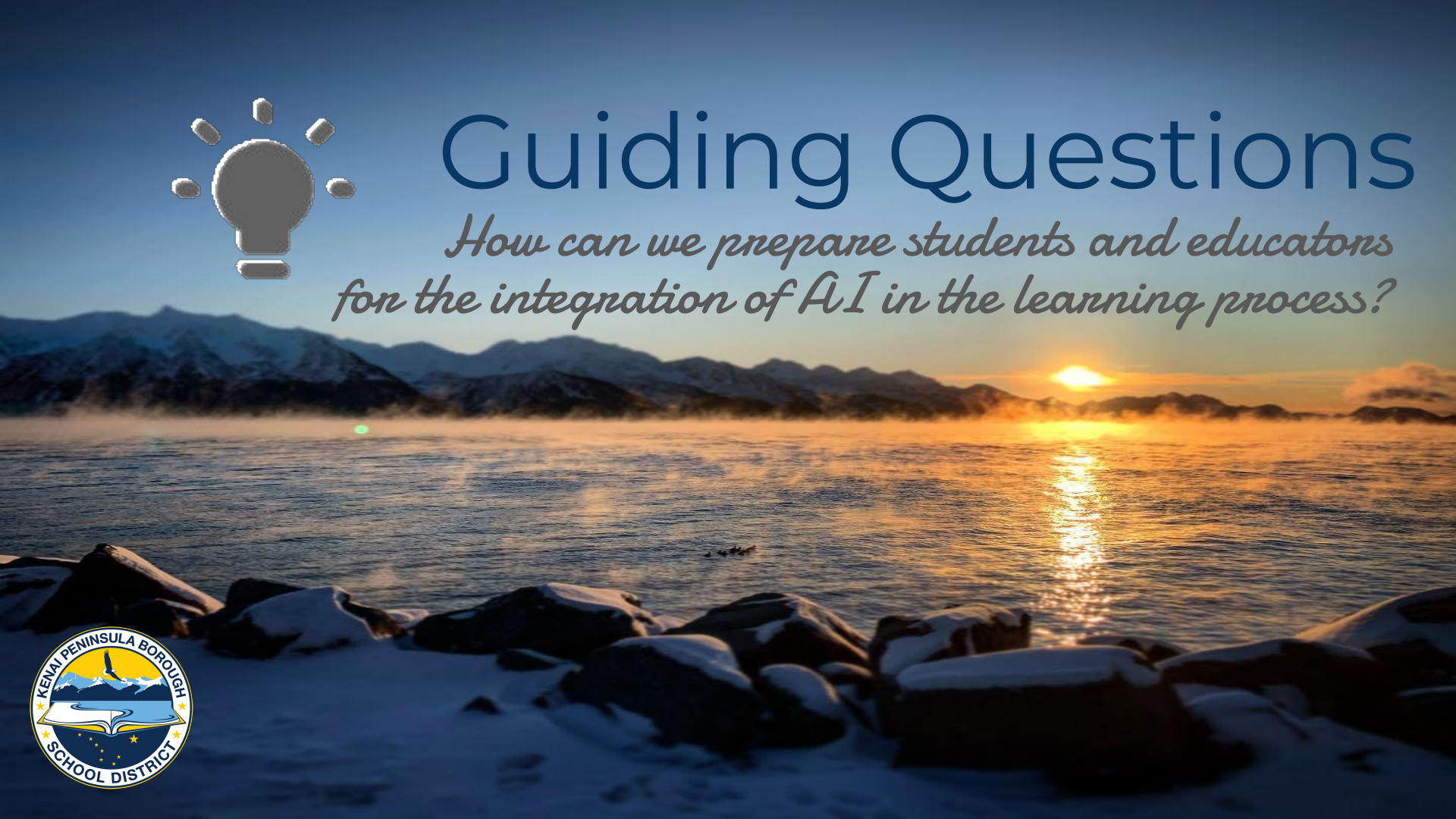
What is it?
Computation engine known for its ability to solve very complex equations in mathematics and physics.

What does that mean?
It solves math problems and shows its work.

When did it show up? 2009

What was the result? Math isn't broken.

Bovell, Sinead [@sineadbovell]. "The BEST way to prevent cheating with AI in schools!"* *Instagram*,@thesocialctv, September 13, 2023 published, https://www.instagram.com/reel/CxIsnmPrW0p/?utm_source=ig_web_copy_link.


Guiding Questions
How can we prepare students and educators for the integration of AI in the learning process?
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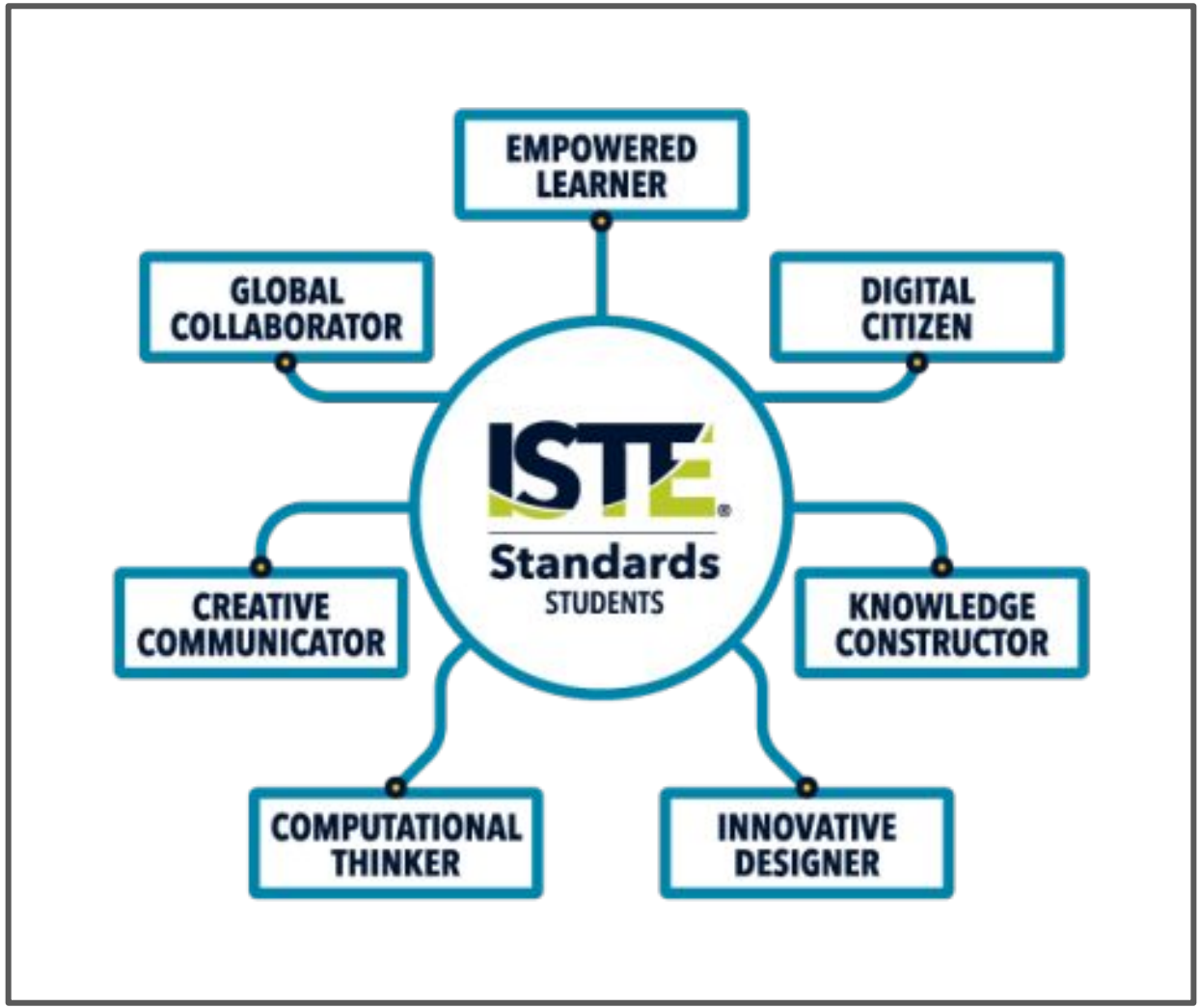
SCHOOL DISTRICT


EMPOWERED LEARNER
GLOBAL COLLABORATOR
DIGITAL CITIZEN
ISTE
Standards
STUDENTS
CREATIVE COMMUNICATOR
KNOWLEDGE CONSTRUCTOR
COMPUTATIONAL THINKER
INNOVATIVE DESIGNER

Empowered Learner

Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the the learning sciences.

Want to Know more?
Click here!

Digital Citizen

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model ways that are safe, legal and ethical.

Want to know more?
Click here!

Knowledge Constructor

Students critically curate a variety pf resources using digital tools to construct knowledge, produce artifacts and make meaningful learning experiences.

Want to Know more?
Click here!

Innovative Designer

Students use a variety of technologys within a design process to identify and solve problems by creating new, useful or imaginative solutions.

Want to Know more?
Click here!

Humans First, Always

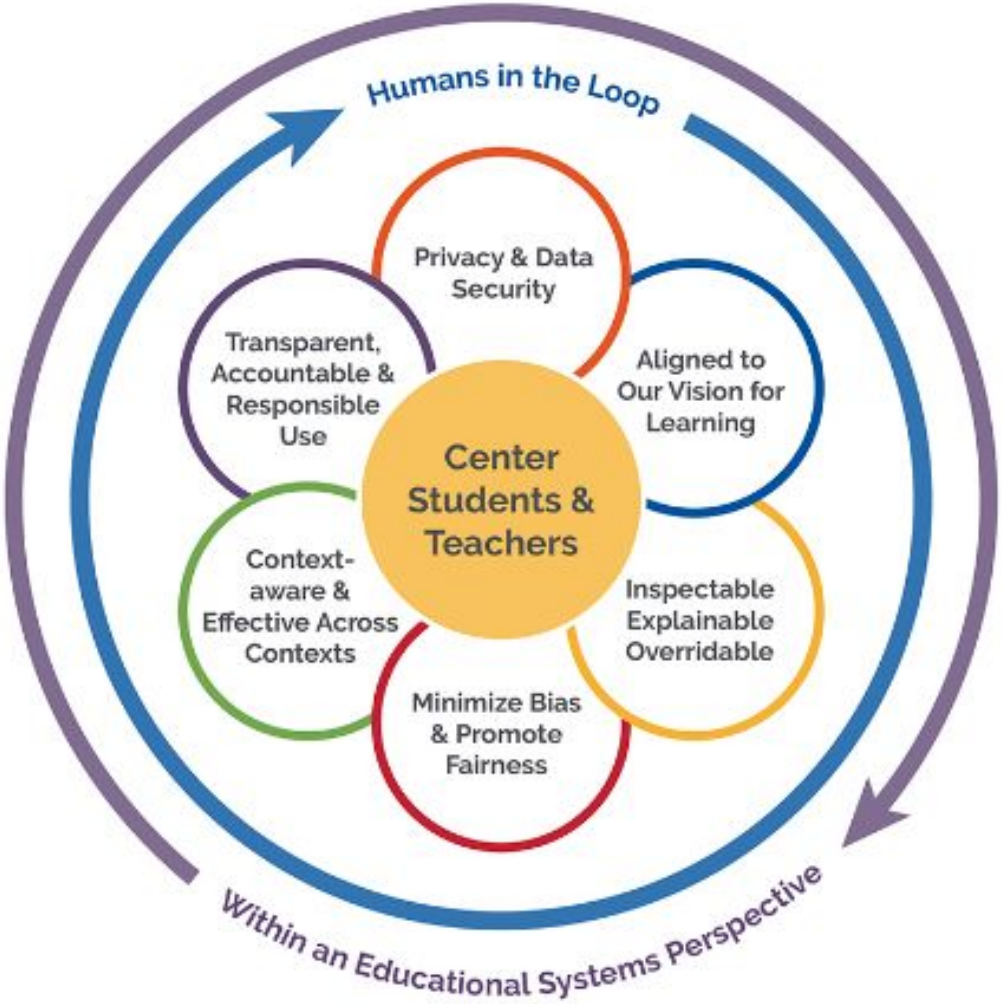
Limitations of AI

Recommendation #1: Emphasize Humans in the Loop

We reject the notion of AI as replacing teachers. Teachers and other people must be "in the loop" whenever AI is applied in order to notice patterns and automate educational processes. We call upon all constituents to adopt Humans-in-the-Loop as a key criteria.

We envision a technology-enhanced future more like an electric bike and less like robot vacuums. On an electric bike, the human is fully aware and fully in control, but their burden is less, and their effort is multiplied by a complementary technological enhancement.

https://tech.ed.gov/ai/



https://tech.ed.gov/a

Recommendation #3: Design Using Modern Learning Principles

Achieving effective systems requires more than processing "big data"—it requires more than data science. Applications of AI must be based on established, modern learning principles, the wisdom of educational practitioners, and should leverage the expertise in the educational assessment community around detecting bias and improving fairness. Going forward, we also must seek to create AI systems that are culturally responsive and culturally sustaining, leveraging the growth of published techniques for doing so. Further, most early AI systems had few specific supports for students with disabilities and English learners and we must ensure that AI-enabled learning resources are intentionally inclusive of these students.

Recommendation #4: Prioritize Strengthening Trust

Technology can only help us to achieve educational objectives when we trust it. Yet, we learned through a series of public listening sessions that distrust of educational technology and AI is commonplace. Because trust develops as people meet and relate to each other, we call for a focus on building trust and establishing criteria for trustworthiness of emerging educational technologies within the associations, convenings, and professional organizations that bring educators, innovators, researchers, and policymakers together.

Recommendation #5: Inform and Involve Educators

We call on educational leaders to prioritize informing and involving educational constituents so they are prepared to investigate how and when AI fits specific teaching and learning needs, and what risks may rise. Now is the time to show the respect and value we hold for educators by informing and involving them in every step of the process of designing, developing, testing, improving, adopting, and managing AI-enabled educational technology. This includes involving educators in reviewing existing AI-enabled systems, tools, and data use in schools, designing new applications of AI based on teacher input, carrying out pilot evaluations of proposed new instructional tools, collaborating with developers to increase the trustworthiness of the deployed system, and raising issues about risks and unexpected consequences as the system is implemented.

https://tech.ed.gov/ai/

Recommendation #6: Focus R&D on Addressing Context and Enhancing Trust and Safety

Research that focuses on how AI-enabled systems can adapt to context (diversity among learners, variability in instructional approaches, differences in educational settings) is essential to answering the question "Do specific applications of AI work in education, and if so, for whom and under what conditions?" We call upon researchers and their funders to prioritize investigations of how AI can address the long tail of learning variability and to seek advances in how AI can incorporate contextual considerations when detecting patterns and recommending options to students and teachers. Further, researchers should accelerate their attention to how to enhance trust and safety in AI-enabled systems for education.

Recommendation #7: Develop Education-Specific Guidelines and Guardrails

Data privacy regulation already covers educational technology; further, data security is already a priority of school educational technology leaders. Modifications and enhancements to the status quo will be required to address the new capabilities alongside the risks of AI. We call for involvement of all perspectives in the ecosystem to define a set of guidelines (such as voluntary disclosures and technology procurement checklists) and guardrails (such as enhancements to existing regulations or additional requirements) so that we can achieve safe and effective AI for education.

https://tech.ed.gov/ai/

limitations of chat gpt

Images | Per hour | News | Videos | Reddit | Chat GPT-4 | Free | Shopping | Books | All filters | Tools | SafeSea

About 15,800,000 results (0.36 seconds)

Limitations of ChatGPT

From sources across the web

- Bias
- Bias in training data
- Limitations in understanding context
- Limited common sense
- Limited knowledge
- Difficulty in understanding abstract...
- Ethical issues
- Factual inaccuracies
- Frequently asked questions about c...
- Lack of ei
- Limited creativity
- Outdated data
- Privacy and security concerns

Refer!

Use the handout for…

1. Definitions
2. Examples
3. Clarification

Artificial Intelligence (AI)

Explanations Opportunities Limitations Ethics

Thank you!

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