



PANORAMA
EDUCATION

5 Strategies: Teaching AI Literacy to Students

AI technologies are increasingly prevalent in society, influencing our daily life and work. Students are also beginning to incorporate AI into their everyday lives—including learning, research, and writing.

It's crucial for schools to develop students' digital literacy skills, so they are prepared to navigate the complexities of AI in the 21st century. By better understanding AI concepts, students can critically evaluate AI-based systems, make informed decisions about their use, and participate responsibly in the evolving digital landscape. Additionally, AI literacy empowers students (and their teachers) to harness the potential of AI for innovation and problem-solving while being aware of ethical considerations and societal implications.

The [Artificial Intelligence Literacy Act](#) highlights the necessity of incorporating AI literacy and digital citizenship in the classroom. But teaching AI literacy can be challenging, especially due to the ever-shifting technology landscape.

This toolkit of lessons include a set of effective strategies teachers can implement to introduce AI literacy to middle and high school students. These strategies, sourced from Panorama's Playbook, include handouts, facilitator guides, and links to videos that support implementation.

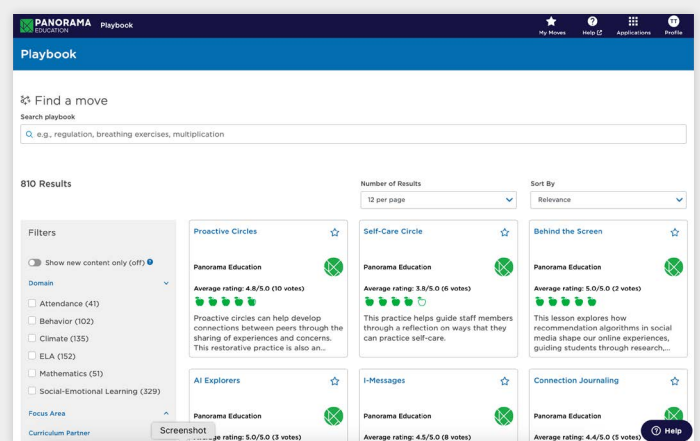
How to use these guides:

- **District Leaders:** Share these resources with your school teams. Consider ways to introduce and implement digital literacy initiatives districtwide.
- **School Leaders:** Bring these strategies to PLCs and staff meetings. Share with staff and develop ideas to incorporate these lessons into the classroom.
- **Classroom Teachers and Support Staff:** Try these activities in class, small group, or individual settings to support the academic growth of every student.

About Panorama Playbook:

The interventions in this toolkit have been selected from [Playbook](#), Panorama's professional learning library for K-12 educators. Districts and schools that partner with Panorama have full access to the collection of 800+ strategies, instructional resources, and MTSS interventions across SEL, academics, attendance, and behavior.

In addition to facilitation guides like the ones found in this toolkit, Playbook users get in-depth implementation tips and differentiation ideas. Panorama works with many evidence-based support programs to extend free access to their interventions, lesson plans, and activities to our partner districts and schools, including: Attendance Works, Digital Promise, Second Step, IM4, and Conscious Discipline.



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Focus Area: Digital Literacy • **MTSS Tier(s):** Tier 1
Developmental Stage: Middle School, High School

About This Strategy:

This interactive lesson equips students with a deeper understanding of artificial intelligence, exploring its benefits, ethical considerations, and real-world applications through hands-on activities and critical thinking exercises.

Preparation:

- Familiarize yourself with the latest developments in AI and prepare to share real-world examples. Consider exploring this [“AI in 5 overview”](#) from the AI Education Project.
- Materials Needed: Computers or tablets with internet access, projector or smart-board for presentations, access to online AI simulators or interactive tools

Instructions:

Introduction to AI Concepts

- Start by explaining AI as a computer or machine performing tasks that usually require human intelligence. Use the analogy of teaching a robot to recognize cats by showing it thousands of cat pictures, similar to how a child learns from seeing many examples.
- Key Concepts: Define AI and generative AI, emphasizing the ability of machines to learn from data, make decisions, and create content.

Interactive Discussion on AI’s Benefits and Drawbacks

- Guide a discussion by asking, If you had a robot that could do your homework, what would be the pros and cons?
- Encourage students to think about the implications of reliance on AI for tasks, privacy concerns, and the potential for creativity.
- Prompt students to engage in a brief think-pair-share on ethical considerations of AI in decision-making in response to the discussion question.

Hands-on AI Project

- Prompt students choose a problem in an area (such as healthcare or journalism) and brainstorm an AI solution. Share a few examples of how AI is already shaping our lives—from text generators like ChatGPT to social media platforms like Instagram and TikTok to self-driving cars.
- Provide them with time to sketch or journal about a basic design or concept.
- If students are struggling to generate ideas, consider giving them an example. For instance: “Imagine you’re inventing a smart assistant for doctors to diagnose diseases faster. What information would it need? How would it help the doctor and the patient?”

Case Studies and Critical Thinking

- Distribute [this handout](#) (from the [AI Education Project](#)) that details examples of AI in the real-world.
- Ask students to analyze these real-world examples of AI's impact. They should discuss both positive outcomes and negative consequences.

Optional Extension: Reflection Essay on AI's Future Role

- Write an essay or prepare a presentation reflecting on how AI might affect their future personally and professionally.
- Sample Prompt: Think of AI as a tool in your toolbox. How will you use it responsibly in your future career?

2. Decoding AI Intuition

Focus Area: Digital Literacy, Critical Thinking • **MTSS Tier(s):** Tier 1
Developmental Stage: Middle School, High School

About This Strategy:

This lesson delves into the concept of common sense in both humans and AI, comparing how each navigates common scenarios and decision-making processes differently.

Preparation:

- If students are new to Artificial Intelligence (AI) and/or generative AI, consider pre-teaching AI Explorers as an introductory lesson on the topic.

Instructions:

Warm-Up Discussion (10 minutes):

- Use prompts such as: What is an example of common sense that might be difficult for AI to understand? How does our background influence our common sense? This will kickstart the conversation.

Explaining “AI Intuition” (10 minutes):

- Present an analogy comparing AI’s learning process to a toddler learning new concepts – both require examples and corrections.
 - Educator Script: “Today, we’re going to explore the concept of ‘AI intuition’ and compare it to how we, as humans, learn from the world around us. Just like a young child, AI needs examples to learn. However, unlike a toddler (who can generalize things from a few examples), AI requires tons of data to ‘understand’ even simple concepts. Imagine having to show an AI thousands or even millions of pictures of cats and dogs before it can reliably tell the difference between them. This is part of the process of building AI’s ‘intuition,’ or its ability to make sense of new information based on what it has learned.”
 - Educator Script: “AI does not ‘understand’ in the way humans do; its ‘intuition’ is purely data-driven and cannot infer or generalize based on emotions, social cues, or experiences like we can.”

Debate Preparation (10 minutes):

- Divide students into teams, assigning roles and providing detailed questions for the debate on AI’s capability to develop common sense.
- Educator Script: You and your classmates will engage in a group discussion to explore questions about AI and common sense. You will participate in one of three debates. Form a group with your classmates and choose one of the following topics to debate:

2. Decoding AI Intuition

- (1) Can AI's understanding of common sense be influenced by biases?
- (2) Is common sense essential for AI to effectively think critically and reason?
- (3) How can we determine if AI possesses common sense?
- Educator Script: Prepare for the debate with your group by planning your opening statement, rebuttal, and closing remarks.
- Opening Statement: Begin with a compelling sentence to capture attention, state your position, and outline the evidence you'll present.
- Rebuttal: After hearing the opposing side's opening, offer a concise rebuttal to their points, reinforcing your argument.
- Closing Statement: Summarize your argument compellingly in the final two minutes, aiming to sway the audience in your favor.

Active Engagement (20 minutes):

- Engage students in a hands-on activity where they simulate an AI trying to navigate a human scenario based only on data, highlighting the gaps in understanding.

Debate (30 minutes):

- Facilitate a structured debate, allowing each team to present their views, rebuttals, and conclusions.
- Share the following debate guidelines with students:
 - Each group will be assigned a debate topic and stance (either yes or no).
 - Each group gets 2 minutes for an initial presentation of their case.
 - Each group will have 2 minutes for a counter-argument, responding to the opposing group's initial presentation.
 - Each group concludes with a 2-minute summary of their key points.
 - The audience, your classmates, will decide the winning team.

Reflection and Discussion (15 minutes):

- Conclude with a reflective session where students discuss the insights gained and the potential future of AI in understanding human common sense.

Focus Area: Digital Literacy, Critical Thinking, Social Perspective-Taking
MTSS Tier(s): Tier 1 • **Developmental Stage:** Middle School, High School

About This Strategy:

This lesson explores how recommendation algorithms in social media shape our online experiences, guiding students through research, discussion, and reflection on the influence of AI in curating content and its broader implications.

Preparation:

- Materials Needed: Computers/tablets with internet access.
- Gather examples of recommendation algorithms in action and prepare to discuss the mechanics behind them. See below for examples.
- If students are new to Artificial Intelligence (AI) and/or generative AI, consider pre-teaching AI Explorers as an introductory lesson on the topic.

Examples of Recommendation Algorithms in Action

Recommendation algorithms are like digital matchmakers that connect users with content they're likely to enjoy. Here are a few examples:

- Streaming Services: Netflix uses your viewing history to suggest other shows and movies you might like.
- E-commerce: Amazon recommends products based on your browsing and purchase history.
- Social Media: TikTok and Snapchat show posts and ads based on your interactions, likes, and searches.
- These algorithms analyze your past behavior to predict and suggest content that matches your interests, aiming to keep you engaged for longer periods.

Instructions:

1. Start with the analogy of a librarian who knows your reading tastes so well that they can pick out books you'll love without you even asking. Like the librarian, recommendation algorithms try to predict what you'll enjoy online based on your past behavior.
2. Watch this video that explains the function of recommendation algorithms.
 - Discuss as a class how these algorithms might know what you like.
3. Divide students into small groups. Prompt these groups to research different types of recommendation algorithms and present how they are used in various social media platforms.
4. Bring the full group back together to discuss their research.
 - What are the benefits and drawbacks of personalized content?
 - How do you think recommendation algorithms can affect societal views and individual perceptions?

5. As an (optional) extension, students can play around with personalizing their social media feeds with positive content and observing the changes over a week.
 - They can reflect on how their online experience is shaped by their interactions.

4. Adapting to Automation

Focus Area: Digital Literacy, College and Career Readiness

MTSS Tier(s): Tier 1 • **Developmental Stage:** Middle School, High School

About This Strategy:

This lesson dives into the impacts of AI and automation on the job market, challenging students to research and discuss how technological advancements could affect future career opportunities and the importance of adaptability in an evolving workforce.

Preparation:

- Materials Needed: Access to computers/tablets for research, projector for presentations.
- If students are new to Artificial Intelligence (AI) and/or generative AI, consider pre-teaching AI Explorers as an introductory lesson on the topic.

Instructions:

Introduction to AI and Employment

- Begin with an overview of AI's role in automation, using the metaphor of a garden. Just as some tools make gardening easier without replacing the gardener, AI can enhance many jobs without necessarily replacing the worker. Highlight how AI is expected to create jobs and transform industries.

Research Challenge

- Divide students into small groups and assign them to research jobs with less than a 10% chance and more than a 90% chance of being automated.
- Educator Script: Consider how the tools we use evolve. A hundred years ago, jobs looked very different. What jobs do you think are like the sturdy shovel, unlikely to be replaced by AI, and which are like the manual typewriter, evolving into something new?

Class Discussion and Reflection

- After the research, guide a class discussion with questions like, How did the jobs you found align with your initial thoughts on automation? and How can understanding AI's impact on different professions guide someone's educational and career decisions?
- Encourage students to reflect on their personal interests and how they might intersect with evolving job markets. Ask, What skills do you think will be most valuable in an AI-influenced job market?

Critical Thinking Activity

- Have students write a short essay or create a presentation on a profession of their choice, analyzing its future in an AI-driven world and the skills that will be necessary to thrive in it.

Focus Area: Social Perspective-Taking, Digital Literacy, Problem Solving
MTSS Tier(s): Tier 1 • **Developmental Stage:** Middle School, High School

About This Strategy:

This lesson explores the evolving landscape of friendships in the digital age, particularly focusing on the emergence of AI chatbots. Students will engage in discussions and activities that help them discern the qualities of human friendships and understand the role and limitations of AI chatbots in providing companionship.

Preparation:

- Materials Needed: student handout ([Google Doc](#) | [PDF](#)), facilitator guide ([Google Doc](#) | [PDF](#))
- If students are new to Artificial Intelligence (AI) and/or generative AI, consider pre-teaching AI Explorers as an introductory lesson on the topic.

Instructions:

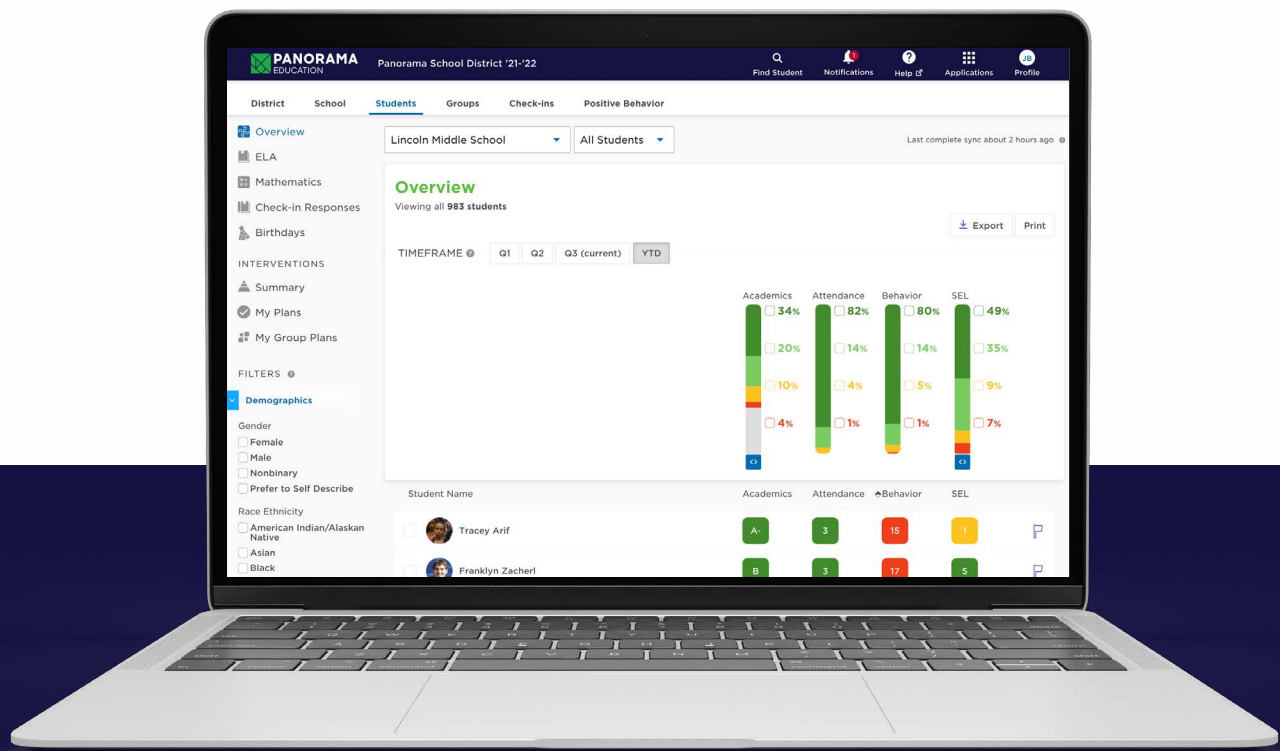
1. Begin by posing the question: What are the qualities of a good friend?
 - Encourage students to share their thoughts.
 - Highlight the diversity in friendships and how qualities such as dependability, kindness, and empathy contribute to meaningful relationships.
2. Shift to discussing how technology, especially mobile phones and apps, has expanded the ways we connect with friends, emphasizing both the conveniences and limitations of these digital interactions.
 - Educator Script: Imagine your friendship as a garden. Just like a garden needs water, sunlight, and care to grow, friendships need time, communication, and shared experiences. Technology, like watering cans and tools, helps us nurture our friendships by keeping us connected through texts, calls, and social media, even when we're far apart. However, just as a garden can't thrive on water alone, friendships need more than digital interactions to flourish. They require the 'sunlight' of face-to-face interactions and the 'soil' of mutual understanding and support.
3. Explain AI chatbots as advanced technological entities designed to mimic human conversation, detailing how they operate and their increasing role in daily life.
 - Educator Script: Think of an AI chatbot as a robot that can talk. Just like a parrot mimics human speech without understanding it, chatbots mimic conversation based on patterns and data they've been fed. They can simulate a chat, answering questions and making conversation, but without the depth or understanding of a human.
4. Invite students to share any interactions they've had with AI chatbots, probing into their motives

for engaging with these digital entities.

- Educator Script: Have you ever interacted with an AI chatbot? Why might people interact with an AI chatbot?
5. Guide students through the Am I Your Friend? scenario on the worksheet. Encourage them to contemplate and discuss the provided questions in pairs or small groups.
- Facilitate a class-wide sharing session afterwards to explore diverse viewpoints.
 - Optionally, distribute the handout for individual reflection to deepen personal engagement with the topic.
6. Conclude by emphasizing the unique, irreplaceable aspects of human friendships. Discuss how, despite the support AI chatbots can offer, they lack the depth, reciprocity, and imperfection inherent in human relationships. Consider using discussion questions such as:
- In what ways do you think AI chatbots could mistakenly be perceived as friends?
 - How do AI chatbots differ from human friends in terms of emotional support and understanding?
 - Why is it important to maintain a distinction between technology-assisted interactions and human connections?

About Panorama Education

Panorama Education partners with K-12 schools and districts across the country to collect and analyze data about social-emotional learning, school climate, family engagement, and more. With research-backed surveys, actionable data reports, and intervention tracking tools, Panorama helps educators act on data and improve student outcomes. Panorama supports more than 15 million students in 25,000 schools across all 50 states, including those in the New York City Department of Education, Dallas Independent School District, Seattle Public Schools, and San Francisco Unified School District.



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