kids4 tech

AI Detectives

Included in This Guide

AI Detectives

Investigating How Artificial Intelligence Is Solving Real-World Problems

TEACHER PREP

Time requirement:
Two 40-to-60-minute class periods, depending on investigation, case file creation, and debriefing.

Grade Level: 4–8

Materials:

- Learning From History Page (1 per student)

- Case Assignment Cards (1 per group)

- Case Research File Page (1 per student, printable or digital)

- Mission Wrap-Up Page (1 per student)

- Investigation Tools (computers, laptops, or tablets with internet access)

- Optional: Case Timer (to keep briefings on schedule)

- Optional: Evidence Board or Projector (to display case instructions or sample case files)

Teacher's Guide:

Calling all cyber-sleuths! This project will turn your students into AI detectives. Working in small investigative teams, they will crack the case on how artificial intelligence (AI) is solving problems in areas like education, healthcare, environmental conservation, and more. Each team will investigate an area in which AI is being used for good, create a Case Research File detailing their findings, and share what they've learned in a jigsaw-style briefing with their classmates. To close the case, your AI detectives will complete a final Mission Wrap-Up reflecting on how AI can be used to make the world a better place.

BEFORE THE ACTIVITY

1 **Prep Case Materials**

- **Print** or provide digital copes of Learning From History page, Case Assignment Cards, Case Research File page, and Mission Wrap-Up page.

- **Assemble Detective Teams:** Organize students into groups of two to four. Assign teams or let them form their own detective agencies. Distribute one Case Assignment Card to each team.

2 **Set Up the Investigation:** Ensure students have devices with internet access.

DURING THE ACTIVITY

DAY 1: LAUNCHING THE INVESTIGATION

1 **Kickstart the Case:**

1. Read the quotes below to your students. You can also write them on the board so they can see them.

2. Ask students what they think the quotes are referring to. Do they think the concerns are valid?

3. After a short discussion, read the Learning From History page aloud while students follow along, or let them read it on their own or in groups.

4. Once they know what the quotes were about, ask how these concerns might relate to how we feel about today's new technologies—like AI.

Quotes:

"This technology is going to invade people's privacy!"

"This technology will tear apart the fabric of society by removing the need for people to meet face-to-face!"

"This technology will make people lazy!"

2 **Assign the Mission:** Announce that students are now AI Detectives tasked with uncovering how AI is being used to solve real-world problems in their assigned case area. They will read an article about this issue and create a Case Research File about what they've learned. They will present their case files to one another and learn what other detectives (their classmates) researched.

1. **Pass out Case Research Files pages.**

   - Groups should choose one of the problems listed on their Case Assignment Card.

   - They should then use what they've learned from the articles to write their responses to the prompts on their Case Research File. They will present their findings to other detectives in class.

2. **Investigation Time:** Give detective teams the rest of class to choose their problem and begin their research.

AI Assist: Some articles may be tough for young readers. Encourage them to use an AI app to simplify or summarize the content.

DAY 2: COMPLETE INVESTIGATIONS AND JIGSAW BRIEFING

1 **Wrap Up Investigations:** If needed, give students more time to complete their Case Research Files.

2 **Briefing Prep:** Explain the jigsaw briefing: One detective from each team joins a new squad with detectives from other case areas to share their files. Have teams practice summarizing their case file in 2 to 3 minutes to prepare for the briefing.

3 **Jigsaw Briefing:** Form jigsaw squads with one detective from each case area (e.g., one from AI in Education, one from AI in Healthcare, etc.). Set a timer (e.g., 3 minutes per detective) for each detective to present their case file to their new team. Encourage active listening and note-taking on the back of their case file.

4 **Mission Wrap-Up:** Return detectives to their normal seats after everyone has had the opportunity to present their case. Distribute the Mission Wrap-Up page and give detectives the rest of class to complete the reflection (or assign as homework).
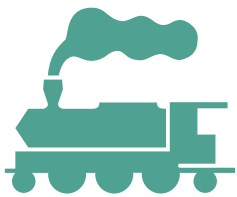
AFTER THE ACTIVITY

Case-Closed Debrief: Gather detectives for a final discussion with questions like:

- What was the most interesting AI case you learned about?

- Why is it important to investigate AI's role in solving problems?

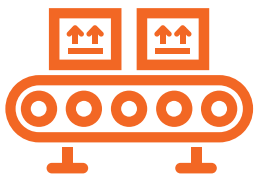- How can we keep AI on the case for good in the future?

File and Review: Collect Case Research File and Mission Wrap-Up pages for assessment and/or grading. If desired, display case files on an "AI Detectives: AI for Good? Case Closed!" bulletin board or slideshow.

Learning From History

Technology is always changing and major technological innovations have the potential to not just change our society, but to actually revolutionize it. This is what we call an industrial revolution. Let's look at some of the major tech innovations throughout history.

4 Industrial Revolutions

1. Steam Engine 1800s

In the late 1700's and early 1800's, the **first industrial revolution** saw the invention of the steam engine. People were able to use water and steam to mechanize production.

2. Mass Production Early 1900s

In the early 1900's the **second industrial revolution** brought the power of electricity to drive mass production.

3. Computing Late 1900s

The **third industrial revolution,** starting in about 1960, gave us the rise of microprocessors, computers and information technology that could automate production.

4. A.I. and the digital world NOW!!!

And today the **fourth industrial revolution** brings us into the digital world where everything is interconnected. Digital content and connectivity enable us to build a virtual world from which we can control the physical world. AI is integrating the physical, digital and biological worlds.

Today we are all navigating the changes associated with the fourth industrial revolution and sometimes when we hear about new advancements in the fields of Artificial Intelligence and Cybersecurity they can seem a bit ominous, even a touch scary. But did you know that society is often worried about how "new" technology will change people's lives. Let's look at an example.

Read the three newspaper headlines from the late 1800s. Read them as though they are "breaking news."

- This technology is going to invade people's privacy!
- This technology will tear apart the fabric of society by removing the need for people to meet face-to-face!
- This technology will make people lazy!

Would you be surprised to know these actual headlines are describing the invention of Alexander Graham Bell's landline telephone! So fearful reactions to emerging technologies is not new.

What are your thoughts about why people have such strong reactions to emerging technologies. AND what advancements do you think might come next in a fifth industrial revolution?

Maybe YOU will be a part of creating those new innovations!

AI Detectives: Case Assignment Card Instructions

Print the page: Print one copy of the Case Assignment Cards for your class.

Cut out the cards: Carefully cut along the lines to separate each card.

Assign to teams: Distribute one card to each detective team, assigning them their unique AI case to investigate.

Case: AI in Education

Mission: Investigate how AI is changing how educators teach and how students learn.

Evidence:

AI in Education

AI In The Classroom: A Roadmap For Educators And Innovators

How Schools Can Use AI While Protecting Student Equity, Privacy, and Inclusion

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Case: AI in Healthcare

Mission: Uncover how AI is improving people's health and saving lives.

Evidence:

7 Ways AI is Transforming Healthcare

This 14-Year-Old Built an App That Detects Heart Diseases in Seconds

How Artificial Intelligence is Used in Healthcare

Case: AI in Environmental Protection

Mission: Discover how AI is protecting our planet and solving environmental problems.

Evidence:

4 Ways AI Could Help Fight Climate Change

How A.I. Is Revolutionizing Marine Conservation

How A.I. Can Help Humans Battle Wildfires

Case: AI in Agriculture

**Mission:** Uncover how AI is helping farmers grow more food sustainably.

Evidence:

AI Aims to Bring Farming Into the Future

How AI Can Impact Agriculture

How AI Can Help Improve Food Systems in the Agricultural Revolution

Case Research File

Hey, AI Detective! Fill out this Case Research File with details about the problem your detective agency is investigating. Make sure to do your research—you'll be sharing this with other detectives later on!
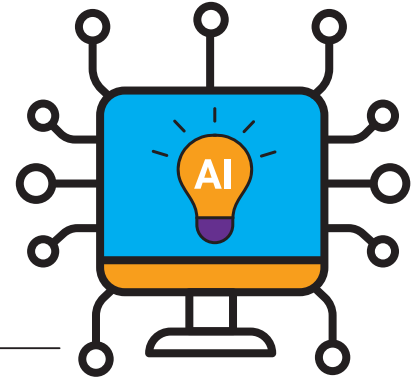
Detective Name: _____

1 What is your case assignment area? (e.g., AI in Education, AI in Healthcare, etc.)

2 What problems did you read about that people are using AI to try to solve? List at least 3.

3 Why is it important to find solutions to these problems?

4 How is AI being used (or how could it be used) to crack the case/solve the problems?

5 What is a real-world example of AI being used to solve this problem? Include details like who is using it, where, and what impact it's having.

6 Why is AI's role in this case important? Explain why AI is being used to solve the problem instead of using another solution.

7 What are some possible risks of using AI in this area? Identify one or two potential concerns (e.g., privacy, cost, access), and discuss how they could be addressed.

Mission Wrap-Up

Great job cracking your AI case! Now, think about what you learned and answer these questions. This is your chance to share how AI can make the world better and what you discovered as a detective.

Detective Name: _____
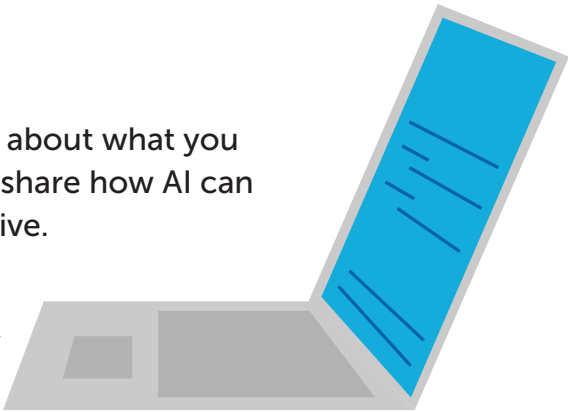
What was the most interesting thing you learned about how AI is solving problems for good? (It doesn't have to be the problem you researched, but it can be!)	**How did working as a detective team help you understand AI better?**
What was one cool idea you heard from another detective's case file during the jigsaw briefing?	**Why is it important to use AI to solve problems for good? How can AI make the world a better place?**
If you could be an AI detective again, what new problem would you want to investigate? Why?	**If you could tell someone who knew nothing about AI how it can help people, what would you say?**