

Patch Program

AI Explorer

Artificial intelligence (AI) isn't just a dream of the future anymore. AI is integrated into many online activities and shaping the way we interact with our world. Earn your AI Explorer patch by learning how to navigate an AI tech-driven world with confidence, be a good digital citizen, and think ethically about AI. Complete an activity from each section to earn your patch!

This patch is generously sponsored by Western Governors University.

Discover

You hear about AI all the time. Learn about what it is and how it works.

- **What is AI?** AI stands for artificial intelligence. AI is a “technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity, and autonomy.”¹ Computers are trained to learn, think, and solve problems like people.
 - Play a game with your family or troop. Put your thumb up if you think the thing listed is powered by artificial intelligence. Put your thumb down if you think it's not AI.
 - Calculator
 - Face unlock on your phone
 - Recommendations on streaming services (like Netflix or Hulu)
 - Your Girl Scout troop leader
 - Light switch on wall
 - Robot vacuum that learns your house ²

¹ IBM website: <https://www.ibm.com/think/topics/artificial-intelligence>

² **Calculator:** not AI, it follows a set of rules; **Face unlock:** this is AI; **Recommendations:** AI tracks your viewing and shows you things you might like to watch next based; **Troop leader:** not AI, this

- **How does AI learn?** Even though AI may feel like magic, it is not magic. Pretend that you have asked AI to create a picture of a bird. What will happen next? AI will act as a super detective. AI will look at examples of pictures that have been labeled as “birds” on the internet, read thousands of websites about birds, and create an “algorithm” (or set of rules) that define what a bird is. Perhaps the algorithm that AI will create will note that birds often have two eyes, wings, and feathers. Then, AI will generate an image that for you that fits within the rules (algorithm) that it created to define a bird. Sometimes AI gets it right and sometimes AI gets it wrong. Maybe it will create a picture of a bird with three wings! When it is wrong, AI is designed to make changes to its algorithm, so that it learns from its mistakes. And next time someone asks AI to create a picture of a bird, the technology is more likely to get it “right”!

Take a piece of paper and fold in half. Draw a bird on one side. What is the “algorithm” you gave yourself while you were drawing that bird? Now, using your algorithm as rules for drawing a bird, pretend to be AI and draw a bird. Your bird should follow all the rules in the algorithm, but maybe be a little bit wacky for fun. 😊

1) Draw a bird:	2) What is my bird “algorithm”? • • • • • Example: must have feathers
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person is a great human!; **Light switch:** not AI; Robot vacuum: this is AI, the machine learns and adapts

- 3) Pretending to be AI, draw a bird using the algorithm above. How might AI use the algorithm above but still get it wrong? Draw it!

- **Real vs. not real.** We all know that not everything on the internet is true. But, today with the powerful capabilities of AI, it's getting harder to distinguish real from unreal. Do some research and learn some tips and tricks for distinguishing what is real and what isn't online. ³

Connect

Explore the world of AI and what it can and can't do.

- **Human or helper?** AI can seem like it's talking and caring, but it doesn't have a heart or feelings. It's a very smart tool, not a friend. Discuss these questions with a trusted adult.
 - What makes a person a person?
 - Can a computer have feelings like we do?

Then, practice whether you can determine the difference. Create cards with the following examples and any additional ideas you have:

- My teacher
- A robot assistant
- My best friend
- My troop leader
- A chatbot
- A doctor
- A talking app

³ "5 Ways to Build Critical Literacy in the Age of AI," <https://www.edutopia.org/article/teaching-media-literacy-age-ai/>

Label two areas on a board or on the floor, sort the cards into the categories, then discuss your choices with your adult.

- Real People (Can feel and care)
- Tools/AI (Can help but don't feel)

Next, “talk” to an AI application or bot along with your adult. Does it really understand you? Is it just following patterns and rules? You can use AI for help, but you should go to people for feelings and friendships. Draw a picture or make a list of real people you can trust.

- **How AI can get it wrong.** Pretend that you've asked an AI chatbot to recommend a good pair of shoes for you. Imagine that the only information that AI has been trained on about shoes includes pictures of the following:
 - The shoes of Sir Clown Bagel
 - The shoes of Madam Clown Croissant
 - The shoes of Ms. Clown Muffin
 - Take a minute to imagine what you think those shoes might look like. Now, draw a picture of the type of shoes you think AI would recommend for you if all the information it had about shoes was pictures of these clowns' shoes.
 - Discuss with others why you drew what you drew!
 - Is this the shoe recommendation that you were looking for?
 - How did AI get it wrong?
 - Why did AI get it wrong?
 - Now imagine that instead of clown shoes, that AI was only trained with the following examples of shoes:
 - A men's leather loafer
 - A men's water shoe
 - A men's formal dress-up shoe
- What type of shoe do you imagine AI would recommend to you? Why? If you are an 8-year-old girl, would this be the recommendation you were probably looking for? If AI were only trained with examples of adult male shoes, who might feel left out? How might that feel? How could humans fix this?

If AI is trained with limited information (like only mens' shoes), it excludes many (like Girl Scouts). This is called bias. AI depends on people to teach it fairly. If people do not include everyone, AI will leave people out.

- **Learn how to do new things with AI.** AI can help you expand your creativity. With your caregiver's permission, take an online class [like this one](#) and learn how to do something new with AI.
- **Technology evolution.** Talk to a grown-up about how they have seen technology advance in their lifetime. Do they use AI in their everyday life? Did they ever imagine a time when AI would be a tool they could use? What excites them about AI? Does AI concern them?
- **AI-proof careers.** Some jobs are disappearing now that AI can take care of the work. However, many new opportunities are showing up with this revolution. The world still needs actual humans, not AI, to do many jobs which require creativity, empathy, and good judgement. For example, AI may help doctors to evaluate data, but it cannot provide good patient care. Learn about what kinds of existing jobs cannot be replaced by AI and what [new careers](#) are emerging because of AI. Then, make a list of the ones that sound interesting to you.
- **Future think.** Draw or write about what you think technology will be like in 30 years. Identify which future technologies that you drew or wrote about may use AI. What will AI enable that technology to do?

Take Action

Girl Scouts always leave a place better than they found it, and the digital world is no exception!

- **Using AI safely and responsibly.** AI can be helpful, but we also need to use it safely and responsibly. Girl Scouts should not create AI generated content that could be harmful to others or that is deliberately misleading. And, Girl Scouts respect people's privacy and ask permission before using other people's data (like their picture or name).

Remember how AI learns and uses information that it is given? What types of information do you think we shouldn't give AI? Create a list of safety rules about AI and share it with others. Here are some examples:

- AI is not a person.
- AI can be wrong.
- AI can give bad advice.
- If something feels wrong, ask a trusted adult.

- Do not share personal information with AI (your name, address, password, photo).
- **AI for good.** AI can be helpful when people use it wisely, kindly, and safely. You get to help make that happen. Design or describe an AI that helps people, animals, or the environment. Share with a friend:
 - What your AI helps with.
 - What examples would it need to learn?
 - What steps would you take to make sure it was safe and fair?
- **AI uses a lot of electricity and water.** The many AI computers in data centers constantly demand plenty of electricity to run programs. Data centers get so hot that they need big cooling systems which use a ton of water and additional electricity. Because more people use AI every day, these data centers use more and more electricity and water, which can affect the environment. People are working on ways to make AI more environmentally friendly such as designing energy efficient computers, making smaller and smarter AI that needs less power, and using clean energy. Research data center regulations in your town or state that protect local communities.