



GUIDANCE FOR STUDENTS



Pennsylvania Junior Academy of Science (PJAS-3) project & presentation artificial intelligence (AI) guidelines.
This is a modified version of the National History Day® (NHD) Project expectations.

Artificial Intelligence (AI) is an emerging technology and tool. Like any tool, it has its limitations. You are encouraged to use tools such as library databases, computer programs (e.g., word processing, graphic design, web builders, video editing software, etc.), and the internet to complete your project. Students are not required to use AI tools (e.g., chatbots, video generators, art generators, code generators, text generators, etc.) to participate in PJAS. If you are going to use AI, you need to use it properly.



Ways You May Use AI

- ✓ Brainstorming topic ideas
- ✓ Brainstorming key words to research a topic
- ✓ Looking for resources you can find in a school or local library
- ✓ Reviewing your writing for grammatical and punctuation mistakes
- ✓ Simplifying the language in a source to make it more understandable



Ways You May Not Use AI

- Letting AI create elements of your project for you. Do not use AI to write text or create charts, graphs or images for your presentation.
- Letting AI do your data analysis for you. Your analysis and the interpretation should be your own.
- While AI tools can recommend sources, they cannot provide accurate evidence or quotations. AI tools often *hallucinate* when asked to do so.



PJAS Competition Rules that relate to AI

Student Research

You must complete the research, design, and creation of your project on your own.

Reasonable Help

You are responsible for the research, design, and creation of your entry. Objects created by others specifically for use in your project and presentation violate this rule.

Review the expectations for your category as they address original work.

When registering for an PJAS contest, you agree that your presentation is original.



If you use AI, you need to cite it properly.

- AI tools are secondary sources.
- Explain how you used AI tool(s) in your process paper. Add a citation to your annotated bibliography. Include the tool(s) and date(s). In the annotation, explain how you used it.
- APA, MLA and The Chicago Manual of Style include annotations for AI tools.

You can use an AI chatbot to begin your research. For example, if you are interested in pea plants, you could ask a chatbot to help you brainstorm project ideas and keywords for your research.

Questions:

- What is the difference in growth between pea plants that start from soaked seeds and those that start from dry seeds?
- How do different concentrations of a common fertilizer affect the growth of pea plants?
- What effect does the introduction of beneficial microorganisms, like rhizobium bacteria, have on the nitrogen content of the soil?

AI is known to hallucinate or provide made-up or incorrect information, especially with more recent information.

For example:

Question: Why can't a bumblebee fly according to the laws of aerodynamics?

Chatbot: A bumblebee's body is too heavy for its small wings to provide lift.

Bumblebees fly perfectly well. They flap their wings in a complex motion, creating tiny vortices of air that generate the necessary lift to stay airborne. When engineers studied the flapping mechanism rather than the rigid-wing model, their flight was fully explained.

