

NSTA Competitions Artificial Intelligence (AI) Use Policy

Purpose

The purpose of this policy is to encourage responsible, ethical, and transparent use of Artificial Intelligence (AI) tools while preserving the educational value, originality, and integrity of student work.

AI technologies can be valuable tools for research, learning, problem-solving, coding, data analysis, and communication. However, students must remain the primary creators, researchers, and decision-makers throughout the project process.

AI may be used to assist with literature review and background research, but students must be able to identify, explain, and defend all scientific concepts, sources, methods, analyses, and conclusions without relying on AI during judging.

NSTA competitions seek to evaluate students' creativity, critical thinking, scientific reasoning, engineering design, and communication skills—not the capabilities of AI tools.

Guiding Principles

1. Students must remain the primary authors and researchers.
2. All AI use must be disclosed.
3. AI-generated information must be verified using reliable sources.
4. Students are responsible for all content submitted.
5. AI may assist learning and research but may not replace student thinking.

Permitted Uses of AI

Students may use AI tools to support their work when properly disclosed.

Examples include:

Research and Learning

- Exploring potential project topics
- Identifying keywords for literature searches
- Finding background information
- Explaining complex concepts
- Summarizing articles or technical papers
- Translating content into accessible language

Brainstorming

- Generating ideas

- Exploring multiple approaches to a problem
- Identifying potential variables to investigate
- Considering alternative engineering solutions

Coding and Technical Support

- Debugging code
- Explaining programming concepts
- Suggesting code improvements
- Assisting with software development

Writing Support

- Grammar and spelling checks
- Improving readability
- Formatting citations
- Organizing outlines

Data and Visualization Support

- Creating graphs from student-generated data
- Assisting with statistical calculations
- Suggesting methods for data visualization
- Explaining statistical techniques

Prohibited Uses of AI

Students may not use AI in ways that replace their own work or misrepresent authorship.

Prohibited uses include:

Research Design

Using AI to:

- Generate the final research question
- Generate the final hypothesis
- Create the complete experimental design
- Develop the entire engineering solution

Project Creation

Using AI to:

- Write substantial portions of the research paper
- Write the project abstract
- Write conclusions

- Generate discussion sections
- Create presentation scripts that are presented as the student's own work

Data Integrity

Using AI to:

- Fabricate data
- Alter results
- Invent citations or references
- Generate fictional experiments
- Create false research findings

Misrepresentation

- Submitting AI-generated work as original student work
- Failing to disclose AI use
- Presenting AI-generated analysis as personal analysis

Student Responsibilities

Students are responsible for:

Verification

All information obtained through AI tools must be verified using credible sources, such as:

- Peer-reviewed publications
- Scientific journals
- Books
- Government publications
- University resources
- Primary research sources

AI-generated information alone is not considered an acceptable source of evidence.

Original Analysis

Students must independently:

- Analyze data
- Interpret findings
- Draw conclusions
- Explain significance

- Defend project decisions during judging

Judges may ask students to explain how conclusions were reached and what role AI played in the project.

Documentation

Students must maintain records of significant AI use during project development.

Examples include:

- Research assistance
- Coding support
- Data analysis assistance
- Image generation
- Writing assistance

Disclosure Requirements

Students must include an AI Use Statement in their project documentation if AI tools were used.

Example AI Use Statement

AI tools were used during this project to assist with literature searches, concept clarification, coding support, and grammar review. All information obtained through AI was independently verified through reliable sources. Experimental design, data collection, analysis, conclusions, and final project content were completed by the student(s).

Students should identify:

- Tool used (e.g., ChatGPT, Claude, Gemini, Copilot, Perplexity)
- Purpose of use
- How outputs were verified

AI-Generated Images, Graphics, and Media

Students may use AI-generated images, graphics, and media only if:

- Their use is disclosed
- They are clearly identified as AI-generated
- They do not misrepresent research findings

AI-generated images may not be presented as actual project results, observations, photographs, or experimental data.

Judging Considerations

Judges will evaluate:

- The student's understanding of the project
- Originality of thought
- Scientific or engineering reasoning
- Ability to explain methods and conclusions
- Appropriate and ethical use of AI

Use of AI will not result in scoring penalties when used in accordance with this policy.

Failure to disclose AI use or misuse of AI may result in:

- Point deductions
- Project disqualification
- Loss of awards or advancement opportunities

Competition Philosophy

Artificial Intelligence is becoming an important tool in science, engineering, and technology. This competition encourages students to learn how to use AI responsibly while developing the critical thinking, creativity, and problem-solving skills that remain uniquely human.