Edmonton Regional Science Fair

Artificial Intelligence Use Guidelines

(Effective: February 2026)

1. Background and Purpose

Artificial Intelligence (AI) is increasingly used in education, research, and scientific inquiry. In the context of the Edmonton Regional Science Fair, AI may be used at **every stage of the project process**, provided it is used **ethically, transparently, and with critical thinking**.

This policy exists to:

- Support students in using AI as a **tool**, not a replacement for learning or original thinking
- Promote ethical research practices and academic integrity
- Ensure fairness, transparency, and credibility in science fair projects
- Provide clear guidance for students and educators on acceptable AI use

AI can enhance idea generation, research, data analysis, and presentation. However, responsibility for understanding, verifying, and explaining all work remains with the student.

2. Definitions

Artificial Intelligence (AI)

Artificial Intelligence (AI) is a branch of computer science focused on creating systems capable of simulating human-like reasoning, learning, and decision-making. AI systems analyze large amounts of data, identify patterns, make predictions, and adapt to new information.

AI is widely used across sectors such as healthcare, finance, transportation, and entertainment. A well-known AI application is **ChatGPT**, which can answer questions and generate written text.

Ethical Use of AI

Ethical AI use means:

- Using AI as a **support tool**, not as the sole creator of ideas, text, or conclusions
- Acknowledging where and how AI was used

- Verifying AI-generated information through reliable sources
- Avoiding misrepresentation of AI-generated work as entirely original human work

Ethical concerns arise when AI-generated content (such as essays, explanations, or analysis) is presented as a student's original work without disclosure.

3. Principles for AI Use

- **AI is a tool, not a substitute for thinking**
- **Transparency is required**: AI use should be acknowledged
- **Verification is essential**: AI output should be checked for accuracy
- **Critical thinking remains central** to scientific inquiry

Students should remember the long-standing principle:

"Garbage in = garbage out."
AI responses are only as reliable as the data and prompts used.

4. Acceptable Uses of AI for the Science Fair

AI may be used in the following ways, provided use is documented and acknowledged:

A. Idea Generation and Planning

- Brainstorming topic ideas
- Refining or narrowing research focus
- Generating research questions or hypotheses
- Designing experiments or identifying variables
- Using idea-sparking tools (e.g., https://mystemspace.ca/spark/)

B. Research and Analysis

- Gathering background information
- Identifying credible sources or places to look for more information
- Supporting understanding of scientific concepts
- Assisting with data analysis techniques, statistics, and graphing ideas

C. Presentation Support

- Suggestions for organizing a display board
- Assistance with presentation scripts or explanations

- Improving clarity and structure of written material (with student review and editing)

5. Citation, Verification, and Documentation

- All AI use should be **clearly acknowledged** in the project (e.g., logbook, references, or methodology section).
- Students should **verify AI-generated information** using credible, human-reviewed sources.
- AI-generated content should not be copied verbatim without review, editing, and understanding.
- Students should record:
    - The AI tool used
    - The prompts or questions asked
    - How the AI output informed their work

6. Mentorship and Support

Students are encouraged to seek guidance when using AI, including from:

- Teachers
- Parents or guardians
- Professionals in the relevant field of research

Mentorship supports ethical decision-making, accuracy, and deeper understanding of both the science and the AI tools involved.

7. Procedures for Students

Students participating in the Edmonton Regional Science Fair should:

1. Use AI ethically and responsibly
2. Maintain ownership and understanding of all project content
3. Clearly document and acknowledge all AI use
4. Verify AI-generated information through trusted sources
5. Record AI prompts and usage in their logbook

6. Be prepared to explain:
    - What AI was used
    - Why it was used
    - How it contributed to the project

Failure to disclose AI use may be considered a breach of academic integrity.

Educators are not expected to prohibit AI use, but rather to guide students in **appropriate, transparent, and ethical application**.

Appendix

This is included to suggest levels of AI use to complete a Science Fair project.

The AI Assignment Scale

Level	Description
NO AI	The assignment is completed entirely without AI assistance in a controlled environment, ensuring that students rely solely on their existing knowledge, understanding, and skills. **You must not use AI at any point during the assignment. You must demonstrate your core skills and knowledge.**
AI PLANNING	AI may be used for pre-task activities such as brainstorming, outlining and initial research. This level focuses on the effective use of AI for planning, synthesis, and ideation, but assignments should emphasize the ability to develop and refine these ideas independently. **You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas**.
AI COLLABORATION	AI may be used to help complete the task, including idea generation, drafting, feedback, and refinement. Students should critically evaluate and modify the AI suggested outputs, demonstrating their understanding. **You may use AI to assist with specific tasks such as drafting text, refining and evaluating your work. You must critically evaluate and modify any AI-generated content you use.**
FULL AI	AI may be used to complete any elements of the task, with students directing AI to achieve the assignments goals. Assignments at this level may also require engagement with AI to achieve goals and solve problems. **You may use AI extensively throughout your work either as you wish, or as specifically directed in your assignment. Focus on directing AI to achieve your goals while demonstrating your critical thinking.**
AI EXPLORATION	AI is used creatively to enhance problem-solving, generate novel insights, or develop innovative solutions to solve problems. Students and educators co-design assignments to explore unique AI applications within the field of study. **You should use AI creatively to solve the task, potentially co-designing new approaches with your instructor.**

Based on Perkins, Furze, Roe & MacVaugh (2024). The AI Assessment Scale