



# 2025 Western Manitoba Science Fair Guide

\*Please note this Guide is subject to changes while we are in the fair planning stage

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# Western Manitoba Science Fair 2025

The fair will be held on Tuesday April 8, 2025 at The Healthy Living Centre at Brandon University. Information for participants can be found in this guide, with additional resources available on our website at [www.wmsf.com](http://www.wmsf.com). It is important for students, teachers, parents, mentors, and judges to read through all of the information available in order to be fully prepared and aware of what is expected of them.

Detailed schedules will be available on our website closer to the fair date, including a timeline for the day, parking information, maps, etc.

## Table of Contents

<b>About WMSF</b>	<b>Page 3</b>
<b>Objectives and Aims</b>	<b>Page 3</b>
<b>Academic Integrity</b>	<b>Page 3</b>
<b>Usage of AI in STEM projects</b>	<b>Page 4</b>
<b>Participant Responsibilities</b>	<b>Page 4</b>
<b>Supervision of Students</b>	<b>Page 5</b>
<b>Entries</b>	<b>Page 6</b>
<b>Important Deadlines</b>	<b>Page 6</b>
<b>Safety and Ethics</b>	<b>Page 7</b>
<b>Project Size and Safety</b>	<b>Page 7</b>
<b>Participation of Humans</b>	<b>Page 8</b>
<b>Use of Animals in Research</b>	<b>Page 8</b>
<b>Judging</b>	<b>Page 9</b>
<b>Mentorship Guidelines</b>	<b>Page 9</b>
<b>Judging Summary Form</b>	<b>Page 10</b>
<b>Judging Rubric</b>	<b>Page 11</b>
<b>Information about attending CWSF</b>	<b>Page 12</b>

## **About WMSF**

The Western Manitoba Science Fair is the Regional Science Fair for Southwestern Manitoba and has been in operation since 1969. It provides an opportunity for students to showcase their scientific talent for their parents, teachers, and the community. Applicants come from grades 1 through 12.

### **WMSF Objectives and Aims**

- To develop a respect for and an understanding of humanity's quest for knowledge. To encourage natural curiosity. To provide a basis for creativity.
- To develop in students an understanding of the necessity for organization, planning and experimentation in research. To encourage independent thinking. To develop mechanical skills.
- To expose students to and acquaint them with the use of scientific methods through practical application.
- To provide an opportunity for self-expression. To emphasize the necessity of having and developing the ability to communicate ideas.
- To aid in channeling students into worthwhile science endeavors. To provide stimulation for scientific hobby pursuits. To meet the needs of talented students.
- To offer an opportunity for students to consult and work with specialists in science fields in the community and elsewhere. To provide constructive suggestions for teachers and pupils of science.
- To serve as a showcase for scientific talent. To report to parents and the community about one phase of the academic performance of students and thereby stimulate a greater interest in science by all.
- To encourage teachers of Western Manitoba to view science fairs, projects and displays as an integral part of their science program.

### **Academic Integrity**

One of the most important traditions in the scientific community is the tradition of academic integrity. Scientists build on others' achievements and they must be able to trust the integrity of the published literature they build on. Students want to work in communities where competition is fair, integrity is respected and cheating is not tolerated. At all science fairs, including the Western Manitoba Science Fair, students are required to present work that is the result of their own efforts. All assistance received from others must be acknowledged, and all written material that draws on the work of others must be accompanied by appropriate references. This includes using Artificial Intelligence applications and tools. Specific examples of violations include:

- Plagiarism – presenting the work of others as your own without acknowledging the source. This includes work done by a family member or a mentor, and includes the usage of text, images and/or other media developed by generative artificial intelligence tools.
- Fabricating or falsifying data
- Forging signatures
- Fabricating or falsifying registration information
- Entering a project that is either derived from a previous project or is a continuation or revision of a previous project by the student (or by another) without documentation of the previous work.

## Usage of Generative Artificial Intelligence in STEM Projects (New)

Students who use Generative Artificial Intelligence tools (ex. ChatGPT) for any part of their project must follow these guidelines. Any time you are using a source for information or help, that source must be cited. This includes using AI tools.

- Whether you are using AI to help with your research, or for tasks like editing, translating, or data analysis, you must acknowledge and cite appropriately.
- Any text on your backboard or in your project report must be in your own words, unless you credit the source. If you include AI generated content directly in your text, you should include an in-text citation, and an associated entry in your References. An in-text citation can simply be the author and year in parentheses. For example, if you include a ChatGPT generated paragraph, you would add (OpenAI, 2024) at the end of the paragraph. Additionally, you would cite OpenAI in your References section according to whatever citing format you're using.
- If you have used AI tools for some part of your research, describe that use in your Methods section, and include the prompts you used.
- When using AI tools for research, if the search results include citations of websites or scientific papers etc, examine those sources yourself before including them. AI tools can create non-existent citations (sources that don't actually exist), and they can also cite content that exists but is inaccurate. Always validate the accuracy of any AI results. You should also be ready to explain to judges how you 'fact-checked' any AI results if they are a part of your scientific research.

## Participant Responsibilities During the Fair

Project setup is from 6:30 pm to 7:30 pm on April 7th (evening before the fair) or 7:30 am to 8:30 am April 8th. Projects **MUST** be set up by no later than 8:30 am. Any changes to these times will be communicated clearly before the fair.

Students are required to remain with their projects during judging, and will also be responsible for the supervision and demonstration of their projects during public viewing. **Any students that are found to be repeatedly straying from their projects and needing multiple reminders to return to their projects, will not be permitted to attend future WMSFs.**

The display area will be closed between 12:00 p.m. and 1:00 p.m. for lunch. Participants should bring a bag lunch, as there is no canteen available at the HLC. There will be entertainment during the lunch hour. Do not leave valuable personal items unattended at any time during the fair. Western Manitoba Science Fair is not responsible for lost, stolen or damaged articles.

Students are advised that projects should not be removed before the time indicated on the Schedule of Events (will be circulated before fair day). The Western Manitoba Science Fair Committee will dispose of unclaimed projects after the designated project removal time.

All students should attend the awards ceremony. The grades 1-4 awards ceremony will start at 4:30 PM, and the grades 5-12 awards ceremony will start at 6:30 PM. Both ceremonies will be in the main gym at the HLC, with seating on the bleachers.

All participants are required to show respect and courtesy to all other students, judges, security, and any other fair attendees. Disrespectful or bad behaviour will not be tolerated, and students exhibiting this type of behaviour will not be permitted to attend future WMSFs.

## Supervision of Students at the Fair

The Western Manitoba Science Fair committee is made up of a small group of volunteers, who organize and run the fair each year. Our committee provides a detailed schedule for a structured fair day, and we try our best with our limited numbers to keep all students on track and where they should be. We do, however, depend on schools/chaperones/parents to provide any extra supervision that they deem necessary. We expect that teachers and parents have explained to students attending WMSF that they are to follow the schedule and not be going where they shouldn't be (please see previous section 'Participant Responsibilities'). This means that students should be at their projects unless there is a designated activity going on for them. Our committee and volunteers are always available during the day to assist any students that have a question or need help with understanding where they need to be.

As we are a very small group of volunteers running the fair, it is not possible for us to directly supervise 500 students. Typically schools send at least one teacher or chaperone to keep tabs on their students at the fair, and we encourage and appreciate that. The only time that parents and teachers can't be directly with the students is during judging; other than that they may provide supervision as they deem necessary. The following is a rough timeline for the day; a finalized and detailed schedule with more specific times and activity descriptions will be circulated and available on our website closer to the fair.

Project Setup	6:30 pm to 7:30 pm on April 7th (evening before fair)
Project Setup	7:00 am to 8:30 am April 8th
Opening Remarks	8:30 - 9:15
Judging	9:15 - 12:30
Lunch/Entertainment	12:30 - 1:30
Scheduled Activities	1:45 - 4:00
Public Viewing	2:00 - 4:00
Project Removal	4:30 - 6:30
Grades 1-4 Award Ceremony	4:30 - 5:30
Grades 5-12 Award Ceremony	6:30 - 8:00

## Entries

**School science fair coordinators who are entering students into the WMSF should make special note of this section.** We'd like to emphasize to school fairs that the WMSF should be viewed as the 'next level' and to only send your 'finalists', as explained in this section. This is for a few reasons; first, we have a capacity that we cannot exceed at the venue. Secondly, too many participants means the judges are having to work very quickly and spend less time than desired on each project. This is not fair to the judges, who are not able to do their job properly, and more importantly it is not fair to the students with strong projects who have put extra time and effort into their work. Top finalists at any school science fair will be allowed to enter the Western Manitoba Science Fair. **This would normally be approximately 25 - 30% of your fair's students.** Please note that for years where we have reduced declared participation we will allow a higher percentage. If this is the case we will contact schools about this well before they hold their school fairs. Please contact us at [info@wmsf.com](mailto:info@wmsf.com) or 204-727-4700 if you have questions about this.

Home schooled students, or students in schools without science fairs may enter projects in the Western Manitoba Science Fair directly. A student may only enter or participate in one project in the Western Manitoba Science Fair.

**Deadlines: The latest date to hold school fairs is Thursday, March 6, 2025.**

**The WMSF entry deadline for the Western Manitoba Science Fair is Friday, March 14, 2025.** This is a firm deadline, so please make every effort to have entries in on time. For school coordinators we advise making your deadline for entry forms from students several days ahead of time so you are able to get your entries package to us by our deadline. Within a few days of the entry deadline, all of the entries we have received will be entered into our database. At that time, an email will be sent to the coordinator email address listed on the entry form; this email will contain the entry information for your school. There will also be information for parents and students with schedules for the day. It is VERY IMPORTANT for the school coordinator to check the information carefully and report any corrections or changes immediately. Within a few days of sending this confirmation, the information starts to flow to other areas, to prepare the fair day project layout, and all the forms needed for setup and judging. Once this starts, it is very difficult, and sometimes impossible to make changes.

**DO NOT** send students to WMSF that are not registered! This includes 'swapping' in another student/project at the last minute for one that is absent. All students and projects are in our system, numbered and organized for judging ahead of time, and having to accommodate extra projects the morning of the fair is stressful for the students, our judges, and our committee.

**Official Entry Form:** Can be found at <https://www.wmsf.com/resources>. Make sure all sections are completely filled out, and signed by parent/guardian. Only one form per project is needed. Group projects have room for two students' information and parent signatures on one entry form. Class projects (grades 1-2 only) will have to attach a list of students with the appropriate information. Project title should be under 35 characters long. Long names will not print properly on certificates and other lists.

Levels are by grades; 1-2, 3-4, 5-6, 7-8, 9-10 and 11-12. For students on Individualized Education Plans (IEP) or taking modified high school credits (Modified) please also check the corresponding box. This is to ensure these students are given a suitable and rewarding judging experience.

Project types include individual, group and class. An individual project is done by one student. A group project is two students, and a class project (only available in grade 1-2 level) is

3 to 15 students from the same classroom, under the direction of a teacher. **Students in grades 3 and up must NOT do projects with more than 2 students;** if a project is done with more than 2 students, they are not eligible to compete at WMSF. It is an unfair advantage to have 3 + students' work compete against 2 students' work. To avoid disappointment at WMSF registration time, please mind this rule at the school fair level as well.

Please note if you have a group project that crosses two levels, the project is entered and judged at the higher level. For example, if student in grade 4 and a student in grade 5 have done a group project they will be entered and judged in the grade 5-6 level at WMSF.

Student information must be completed in full. Be sure to show both first and last names.

**Self-nominated Awards List:** This is page 2 of the entry form. Certain sponsors provide special awards with specific criteria. Please nominate yourself for up to seven awards by checking the appropriate box, and submit with your Entry Form. Some students may find that they are not eligible for any self-nominated awards. This self-nominated awards list is finalized in early March, so if you print off your entry form before then you may not be getting the full list. It is best to wait until early March to print off and complete your entry form.

**Registration Summary:** Schools must complete this form. The e-mail address for contact is absolutely crucial. After the money summary is completed, the school must send one cheque for the whole amount. Please have students/parents write their individual cheques to the school, not the Western Manitoba Science Fair. Home school students, and others entering without coming from a school fair, must also send a Registration Summary.

### **Project Report:**

**Project Report/Abstract:** It is mandatory for Grades 7 - 12 and encouraged for Grades 5 and 6 to complete a Project Report online on our website at [www.wmsf.com/projectreport](http://www.wmsf.com/projectreport). This online submission of a Project Report replaces the previous requirement to submit an abstract with the entry form. These Project Reports will be used as a way to summarize projects and will be circulated to the judges before the fair to familiarize them with students' work. Students can attach up to 3 images of their project to the online Project Report submission. The deadline to submit the online Project Report is Monday March 31st, however we advise students not to leave it until the deadline. All instructions are within the online form, and students can save their work and return.

## **Safety and Ethics**

### **Project Size and Display Safety Regulations**

**Display Dimensions and materials** - Maximum dimensions for projects, including backboards, are 0.8 metres from front to back, 1.2 metres from side to side, 2.0 metres high. No oversized projects will be accepted for entry unless it has been given approval in advance by the Western Manitoba Science Fair Committee.

Exhibits should be durable, with moving parts securely fastened and safe. Self-supporting backboards are to be furnished by the exhibitors. Paper on backboards should be securely applied so there are minimal air pockets behind the paper. Overlapping or loose sheets of paper should be stored in a data book.

Bring pictures or videos of project/experiments rather than bringing physical pieces to the fair. Judges do not reward students for displaying physical items at WMSF. The preferred method is pictures on the backboard or in a log book, or pictures/videos displayed on a device to the judges.

**Fire Safety** - Local fire regulations must be followed. Operation of an open flame, candle, torch or heating device is not permitted.

**Chemical Safety** - The following materials may not be displayed: Flammable, toxic, or dangerous chemicals, prescription drugs or over the counter medications, compressed gas cylinders. Photos or empty containers of these prohibited items may be used instead.

**Electrical Safety** - All cords, power bars, lighting and other electrical devices must be CSA approved. No exposed live parts are allowed. Wet cells are not allowed because of the hazardous chemicals involved. Please contact us at [info@wmsf.com](mailto:info@wmsf.com) if you have constructed an electrical device that you want to display. Please note that effective 2025, any project requiring an electrical outlet will be located in a different section of the project area at WMSF. We are no longer able to run electrical down every row, so we will be congregating all electrical projects together.

**Firearms, Hazardous Equipment** - No firearms or ammunition are allowed at the fair. Experiments using firearms must be carried out in accordance with federal and provincial legislation. Lasers, radioisotopes and x-ray or radiation producing apparatus may not be displayed. High voltage apparatus capable of generating in excess of 10kV is considered an x-ray hazard.

**Biohazards** - Biological hazards, including live cultured bacteria, cells and tissues, or any material which may decompose are suitable for research under controlled laboratory conditions, but may not be displayed at the fair. Simulations (must be labeled 'simulated') or pictures may be displayed. Live plants can not be brought to the fair. Example: Displaying pictures of plant growth cycle is proper; bringing the actual plants is not allowed.

**Animals and Animal Parts** - No live animals, mounted specimens or animal parts may be displayed at the fair.

## Participation of Humans in Research Projects

Human Research refers to any project that involves the generation of data about persons. Examples of such projects may include:

- Some surveys
- Some food and drink projects
- Some caffeinated beverage projects
- Some absorption through the skin projects
- Some exercise projects

If your project involves collecting data about persons, you must adhere to the Participations of Humans in Research Policy available at [www.wmsf.com/ethics](http://www.wmsf.com/ethics), including completing any applicable consent forms and approval requests. If you have any questions about this please contact us at 204-727-4700 or [info@wmsf.com](mailto:info@wmsf.com).

## Use of Animals in Research

Any STEM project involving the use of animals requires approval from WMSF before any work begins on the project. WMSF follows Youth Science Canada's policies on the Use of Animals in Research. Visit [www.wmsf.com/ethics](http://www.wmsf.com/ethics) for more information and access to forms.



## **Judging**

Judging will be based on standards and official forms set by the Western Manitoba Science Fair Committee to ensure all projects are assessed critically and fairly. All projects are judged based on the four criteria detailed on the Judging Forms included at the end of this guide. These criteria are Scientific Thought and Understanding, Originality and Creativity, Communication, and Mentorship. To get a full understanding of what the judges will be looking for, students, teachers, parents and mentors should read the Judging Booklet on our website [www.wmsf.com/judging](http://www.wmsf.com/judging).

Regular awards (gold, silver, and bronze medals) are assigned by the judges to the best eligible projects on the basis of ranking projects relative to others in the same level at the Western Manitoba Science Fair.

Special Awards, or Self-Nominated Awards are only open to projects within specific scientific focus areas. Entrants must have selected the awards that their project may be eligible for on the self-nominated awards list and submitted it with their Official Entry Form. These awards are for outstanding projects that meet specific criteria within a particular aspect of science and often reflect the special interests and criteria of the sponsoring foundations, companies and professional associations.

### **Mentorship Guidelines**

Science fair projects from time to time will be mentored, or receive outside assistance. Mentors may be scientists, teachers, parents or, sometimes, other students. It is important to understand that mentorship is not at all discouraged; it can be a useful way for students to conduct research and gain knowledge pertaining to their project. Mentorship will not be considered an 'unfair advantage' as long as the following guidelines are strictly followed:

- Always keep in mind that the project is the student's and not the mentor's. It is the student's role, and not the mentor's, to conceive the project's specific topic.
- All data taking and analysis of the data must be the student's own, unless the student does not present it as his or her own and credits the actual data taker properly. When mentors take over these responsibilities, they deprive students of valuable learning experiences.
- If a project has been mentored, it should be declared in the references and or bibliography in the accompanying project report/abstract
- The student must be knowledgeable in the subject/project, and can answer all questions about information they've presented in the project.

# Project Judging Summary Form



Part A: Scientific Thought		Judging Notes
Level (1-4)	Rating (0-9)	
Part B: Originality & Creativity		
Level (1-4)	Rating (0-9)	
Part C: Communication		
Level (1-4)	Rating (0-9)	
Part D: Mentorship		
Level (1-4)		
<p>Feedback for the Finalist(s) - It is <b>VERY</b> important to leave adequate and constructive feedback for <b>EVERY</b> project. A copy of the Project Summary Form will be sent to each student.</p>		
Strengths		
Recommendations		
Judge's Name (Please Print)		Judge's Signature

Feedback for the Finalist(s) - It is **VERY** important to leave adequate and constructive feedback for **EVERY** project. A copy of the Feedback will be sent to each student.

**PART A: SCIENTIFIC THOUGHT - First choose which ONE of the following two categories the project falls under, then work down that column to determine the level:**

<b>Discovery</b>	<b>Innovation</b>
The project seeks to add to human knowledge by carrying out original research, or by synthesizing and analyzing data from a variety of sources.	The project seeks to solve a practical problem by developing and evaluating a new device, studying a model of a real-world system, or devising a new technique or method to address shortcomings of existing techniques or methods.
LEVEL 1	LEVEL 1
Replicate a known experiment to confirm previous findings, or collate data from a variety of existing sources without further analysis. Statements about the significance of the work may be exaggerated and show little awareness of context. For projects incorporating Indigenous Traditional Knowledge, the project has little importance to the land and community	Build a model or device to duplicate existing technology or to demonstrate a well-known theory or social/behavioural intervention. For projects incorporating Indigenous Traditional Knowledge, the project has little importance to the land and community.
LEVEL 2	LEVEL 2
Extend a known experiment with modest improvements to the procedures, data gathering and possible applications, or synthesize data from a variety of sources to confirm existing conclusions. Statements about the significance of the work are somewhat supported by the information presented and show a little awareness of context. For projects incorporating Indigenous Traditional Knowledge, the project may have importance to the land and community and is somewhat holistic in its approach.	Improve or demonstrate new applications for existing technological systems, social or behavioural interventions, existing theories or equipment, and justify them. For projects incorporating Indigenous Traditional Knowledge, the project may have importance to the land and community and is somewhat holistic in its approach.
LEVEL 3	LEVEL 3
Devise and carry out an original experiment. Identify the significant variables and attempt to control them, or synthesize data from a variety of sources to strengthen or extend existing conclusions. Analyse the results using appropriate arithmetic, graphical or statistical methods. Statements about the significance of the work are mostly supported by the information presented and show awareness of context. For projects incorporating Indigenous Traditional Knowledge, the project has demonstrable importance to the land and community and takes a holistic approach to knowledge creation.	Design and build innovative technology; or provide adaptations to existing technology or to social or behavioural interventions; or extend or create new theory. Human benefit, advancement of knowledge, and/or economic applications should be evident. For projects incorporating Indigenous Traditional Knowledge, the project has demonstrable importance to the land and community and takes a holistic approach to knowledge creation.
LEVEL 4	LEVEL 4
Devise and carry out original experimental research in which most significant variables are identified and controlled, or synthesize data from a variety of significant sources to develop new insight and draw new conclusions. The data analysis is thorough and complete. Conclusions are clearly described/presented and connected back to the data that justifies them.	Integrate several technologies, inventions, social/behavioural interventions, or design and construct an innovative application, or propose a new theory that will have human and/or commercial benefit. Performance of the prototype, method or theory is evaluated completely and realistically. Honest comparisons are made to alternative or previous solutions where possible.

**PART B: ORIGINALITY & CREATIVITY**

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
The project design is simple with little evidence of student imagination. It can be found in books or magazines.	The project design is simple with some evidence of student imagination. It uses common resources or equipment. The topic is a current or common one.	This imaginative project makes creative use of the available resources. It is well thought out, and some aspects are above average.	This highly original project demonstrates a novel approach. It shows resourcefulness and creativity in the design, use of equipment, construction and/or the analysis.

**PART C: COMMUNICATION**

The level is based on four elements: visual display, oral presentation, project report with background research, and logbook.

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
Most or all of the four elements are simple, unsubstantial or incomplete. There is little evidence of attention to effective communication. In a pair project, one member may have dominated the presentation.	Some of the four elements are simple, unsubstantial or incomplete, but there is evidence of student attention to communication. In a pair project, one member may have made a stronger contribution to the presentation.	All four elements are complete and demonstrate attention to detail and substance. The communication components are each well thought out and executed. In a pair project, both members made an equitable contribution to the presentation.	All four elements are complete and exceed reasonable expectations of a student at this age/grade. The visual display is logical and self-explanatory, and the exhibit is attractive and well-presented. The project report and logbook are informative, clearly written, and the bibliography extends beyond web-based articles. The oral presentation is clear, logical, and enthusiastic. In a group project, both members contributed equitably and effectively to the presentation.

**PART D: MENTORSHIP**

LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
The project is mentored. The student has limited knowledge of the material presented in the project.	The project is mentored. The student has moderate knowledge of the material, but gaps in knowledge of the project exist.	The project is mentored. The student knows most of the material however minimal gaps in knowledge of the project exist.	The project is not mentored, or The project is mentored however the student is very knowledgeable in the subject, and can answer all questions about information presented in the project.

## **Information about attending the Canada Wide Science Fair (CWSF)**

The WMSF judges will award the top four students in grades 7-12 with an all expenses paid trip to the Canada Wide Science Fair to compete at the national level. This year the Canada Wide Science fair will be held in Fredericton, NB, May 31 - Jun 7, 2025.

A few important things to note about this event:

- Students can only compete at one Regional Fair for their chance to go to CWSF. For example, if a student competes at WMSF and does not win, they cannot then go and compete at a Winnipeg regional fair for another chance.
- Parents do not accompany students on the trip to CWSF. Students are accompanied by an experienced chaperone from the WMSF committee. This chaperone will meet with parents before the trip to answer all questions and provide information. CWSF is well organized and safe for students.
- Students attending CWSF are expected to display respectful and sportsmanlike behaviour. Although it is a competition, the top priority is the experience of the event. Most students do not win medals or awards at CWSF, and although this can be disappointing, it is expected that a positive attitude will be maintained for the duration of the event.
- If you are one of the top four WMSF winners awarded a trip to Canada Wide Science Fair, but are not able attend, we ask that you let the WMSF committee know within a few days of WMSF (April 8) so that we can give the spot to another student.