RED RIVER VALLEY JUNIOR ACADEMY

Science Fair

STUDENT PLANNING GUIDE

Adopted January 2010

GENERAL GUIDELINES

PROJECT TYPES: There are three kinds of projects:

1. **Research/Descriptions:** are descriptive only but involve scientific discipline in the collection and presentation of phenomena. An example from previous years might be "The Life Cycle of Volcanoes". More usually, research/description projects are common to the earlier grades.
2. **Experiments**: involve scientific testing…hypothesis, collection of data, analysis and conclusions. An example from previous years might be "Which Golf Ball 'Hits' the Farthest" with five different kinds of golf balls tested for bounce. Grades 7 to 9 typically submit experiments.
3. **Innovation:** goes a step further and leads to new discoveries and even new products. An example from previous years might be "A Prosthetic Hand That 'Feels' Hot and Cold".

JUDGING PROCESS: The judging process is pretty much the same for all three project types. The following are the basic elements that the judges look for and assign marks to:

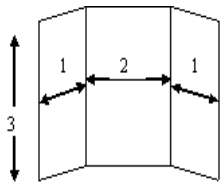
1. Originality of the Project
2. Scientific Thought
3. Clarity of Presentation
4. Thoroughness of Research
5. Skill in Presentation of Data and Material
6. Dramatic Value
7. Project Report

SELECTION OF TOPICS: Students are well advised to read current information in books and journals before the final selection of their topic. Projects should include: data obtained from the students own experiments, quotation of errors and the possible causes in the results, a conclusion drawn from the experiments, a good write-up and the display of the work.

CATEGORIES OF PROJECTS: There are nine categories of projects –

1. Biology - Animal Science
2. Biology - Plant Science
3. Biotechnology
4. Chemistry
5. Consumer Science
6. Engineering
7. Health Science
8. Physics
9. Environmental Studies & Earth Science

BACKBOARD: Backboard may be obtained from Staples and Office Depot. Boards are 3 feet high and two feet across with folder over wings either side of one foot by three feet.



Some students put extensions upwards on their backboards but students cannot put extension sideways on their backboards as they are only allocated four to five feet of space on the tables. Space in front of the backboard can be used as a demonstration area.

Graphics and picture displays are important to your backboard presentation; also neatness and logical flow of ideas.

LOGBOOKS: Logbooks are an important record of research and testing. Logbooks can be a useful tool to communicate with the judges prior to the interview i.e. to reflect organizational ability and scientific discipline.

PROJECT SUMMARY/REPORT (Adapted from the Youth Science Foundation Project Report Guidelines): **This is optional and only for students who wish to have their project entered into the Canada Wide Science Fair**

The Project Report is a 5-page document that presents your project to the judges in written form. If your projected is selected for the Manitoba Science Symposium, the judges have an opportunity to read it before judging and they will use it to prepare for their interviews with you.

The Project Report should be a summary of your project, not a copy of your display, which focuses on your data and results. A complete Project Report includes:

- **Background, Purpose and Hypothesis:** why the project was done and what you hoped to achieve.
- **Procedure:** a very brief outline of the significant materials and methods used.
- **Results/Observations and Conclusions:** a summary of your results and an explanation of how and why they are important;
- **Acknowledgements:** recognition of those individuals, institutions and businesses that provided significant assistance in the form of guidance, materials, financial support or facilities;
- **References:** key references used in the development of your project. Quotations and sources cited within your Report must be listed.
- **Proof of Requirements:** as specified by YSF Canada ethics or safety policy.
- Changes to a continued project: If an earlier version of the project was entered in a previous year, the finalist must highlight the changes or modifications made.
- **Bibliography:** To be included as an appendix, is mandatory:
  Significant sources consulted must be mentioned (volumes, articles, audio-visual, documents, web sites, interviews, etc.). Quotations and sources within the report must be clearly identified.

A full printed bibliography should be available to the judges at your project: All sources consulted must be mentioned (volumes, articles, audio-visual, documents, web sites, interviews, etc.).

ORAL PRESENTATION: As you complete your conclusion and paste the last diagram on the board, you will still need to prepare your speech for the judging.

The judges will be determining how much you know. It is beneficial to prepare answers to questions you think the judges might ask. This way, you won't be confronted with questions you can't answer.

Once you have prepared your speech, it is worthwhile to practice in front of a mirror, your family, or a friend. This rehearsal helps to relieve nervousness when you are actually being judged. If you have had practice, you will be more comfortable with your speech and you will make fewer, if any, mistakes.

PROJECT REQUIREMENTS

A science fair project is a presentation of an experiment conducted by the student using the scientific method. A science fair project submitted for the RRVJA School Science Fair has the following three parts.

- Logbook where students enter date into the project book on a weekly basis. Include a ½ page summary of your progress to date, discoveries, questions to investigate, next steps, etc.
- Science Fair Project Report/Summary **(This is optional and only for students who wish to have their project entered into the Canada Wide Science Fair)**
- A Display Board which contains the following details:

The display unit consists of: **A Display Board** that forms the background for the project. A standard size display board is 36" (height) by 48" (width).

The following information from the **written report** should be on the display board in a neat and concise manner:

 Student's name, grade and be written on the backside of the display board.

 Title: This should not be your question

 Purpose: The problem stated in the form of a question

 Hypothesis: An educated guess of how the experiment will turn out, worded in terms of the independent and dependent variables.

 Procedure & Materials list: A summary of the procedure that was followed, including summary of materials used. . You may also include photographs to describe what was done.

 Results: The data collected as a part of the experiment should be displayed in both data tables and a graph – all of which must be typed.

 Conclusion: A statement that summarizes the investigation and addresses the original purpose. It should include any discoveries that were not originally planned.

 Acknowledgements: Be sure to give thanks to anyone who assisted you.

Models, materials, devices and samples that relate to the science fair project may not be displayed in front of the board – take lots of pictures instead. NOTE: you will not be conducting your experiment for the judges. This is only a display.

Discussion: The student discusses what was learned from the data collected. Did the data support their hypothesis? What did the student learn during and after the investigation? How might they change their experimental procedure next time?

Science Fair Report/Summary: (This is optional and only for students who wish to have their project entered into the Canada Wide Science Fair)

It is important to follow the scientific method when you design your science fair project. The **scientific method** is a series of steps that must be followed in order to properly design your science fair experiment and report your findings.

The following Steps will help you to do each step of the scientific method. Use the information from the completed Steps to write your science fair report and put together your display. The report will include the title page, data table and graphs.

 Title Page: It should include the problem to investigate from Step 2, full name, grade level, and date.

 Step 2: State the problem in the form of a question. Ask a very specific question about the problem that you want to investigate. State your question in terms of independent and dependent variables.

 Step 3: Gather information about your topic. Gather information from at least three different sources. No bibliography is require for this step – but is required with the final report.

 Step 4: Develop a Hypothesis. Write down your prediction of how you think the experiment will turn out.

 Step 5: Design the Experiment. Design an experiment that looks at the effect of change in the independent variable on the dependent variable. It is important that only one independent variable be changed at a time and that only one dependent variable is measured at a time.

Determine in what increment the independent variable will change and how to measure the results of the change on the dependent variable. Appropriate units should be used on all measurements. The project report should include a detailed procedure and materials list so that it is clear to others how to do the experiment.

 Step 6: Conduct the Experiment and keep records. Conduct the experiment. Record the data collected and what you observe during the experiment. Also, record any errors that may have occurred during the experiment.

 Step 7: Analyze the Results. Analyze the data that you collect, looking for patterns and trying to draw a conclusion. The data gathered may not support the original hypothesis. This happens to scientists all the time and it is a normal part of the scientific method. The goal of a good experiment is a clear, repeatable procedure and result.

 Step 8: Develop a Conclusion. Develop a conclusion that tells whether the data supports the hypothesis or not. The conclusion represents what you actually learned by conducting the experiment. Suggestion for improvement in design and a statement of the importance of the experiment and its real world application should also be included.

PROGRESS TIMELINE:

Students receive science fair information	**January 15**
Step 1-Identify a topic	**January 25**
See the following helpful sites **http://www.ipl.org.ar/youth/projectguide/** **http://www.ri.net/schools/East_Greenwich/Cole/sciencefair.html**	
Step 2-Formulate a question	**February 01**
Step 3-Gather Information	**February 08**
Step 4-Hypothesis	**February 19**
Step 5-Design the Experiment	**March 01**
Step 6-Conduct the Experiment	**March 08**
Step 7-Analyze the Results	**March 15**
Step 8-Develop a Conclusion	**March 22**
Types Materials (for Display Board)	**March 29- April 2**
Display Board submitted	**April 5**
Presentations in class	**April 6-11**
Projects on display for view	**April 12 by 2:30 pm**
Science Fair Judging	**April 13**

WHAT THE JUDGES WILL BE LOOKING FOR?

Scientific Thought:

- Does the project have a title, question to be investigated and hypothesis clearly stated?
- Does the project represent sincere study and effort?
- Does the project form conclusions based on the data or information gathered?
- Does the project follow the scientific process?
- Is the experiment designed to test the stated hypothesis?
- Does the project illustrate controlled experimentation?
- Does the presentation show that the student is familiar with the topic?

Originality

- Does the project demonstrate ideas arrived at by the student?
- Does the project show a high degree of accomplishment? Is the degree of accomplishment consistent with the student's age/ability level?
- Is the project student-authentic work?

Thoroughness/Technical Skill and Neatness

- Does the project tell a complete story?
- Are all the parts of the project well done, including the visual display and the presentation to the judges?
- Does the project show effort and creativity by the student?
- Is the display unit neat and easy to read?
- Is the written report clear and in the student's own words?

Please see the attached scoring rubric that will be used by the judges. (See Page 22)

Step 1 – Topic Selection/Project Proposal

Name: Date:

Grade:

Topic: _____

Date received: _____Approved: Y N

Parents Signature_____

Next Step: Revise topic and re-submit (or) go on to Step 2

Comments:_____

Step 2 – State the problem in the form of a question

Ask a very specific question about the problem you wish to investigate in terms of independent and dependent variables.

Variables are conditions of the experiment that are either kept the same, changed or are the measure of change. A **variable** is anything that can affect the outcome of an experiment.

 The **independent variable** is the variable that is changed on purpose by the experimenter and tested.
 The **dependent variable** is the variable that is being observed, which changes in response to the independent variable.
 Constant Variables are conditions of the experiment that are kept the same.

What is your investigation question?_____

_____

_____

_____

What is the **independent variable?**_____

_____

What is the **dependent variable?** _____

_____

What is/are your **constant variable(s)**? _____

_____

Date received: Approved: _____ Y N

Next Step: Revise topic and re-submit (or) go on to Step 3

Comments:

_____

_____

Step 3 – Gather Information about Your Topic

Three of your references must be from books. You are encouraged to use both Internet sources and book resources. You will need to turn in your logbook with this page. You should have a minimum of three pages of notes. (Grade 7-10 Use APA style for your references – See APA Guide on Page 21)

1st reference: Title _____ Author_____

Why did you choose this book as a reference?

Why is this a good resource? Explain why...

2nd reference: Title _____ Author_____

Why did you choose this book as a reference?

Why is this a good resource? Explain why...

3rd reference: Title _____ Author_____

Why did you choose this book as a reference?

Why is this a good resource? Explain why...

Date received_____: Approved: Y N

Next Step: Revise topic and re-submit (or) go to Step 4

Step 4 – Develop a Hypothesis

A **hypothesis** is an educated guess as to what you believe the outcome of the experiment will be. It is based on the information gathered so far.

What is your hypothesis?

Date received: _____Approved: Y N

Next Step: Revise topic and re-submit (or) go to Step 5

Comments:_____

Minimum number on experimental trials:_____

Step 5 – Design the Experiment

1. To design an experiment make a step-by-step list of what you will do to test the hypothesis. This list is called and **experimental procedure**.

- Keep things as simple as possible; include changes in the independent variable
- All other factors in the experiment should not change; they are **constant variable**.
- Determine in what way you are going to change the independent variable.
- Determine how you are going to measure the change in the dependent variable. Make sure that appropriate units are used.

In what way will your independent variable change? Give units and the device to measure? _____

_____

_____

_____

How will you measure the change in your dependent variable? Give units and the device to measure. _____

_____

_____

2. Each experiment needs a “control” for comparison so that you can see what the change in the independent variable actually caused. The control is a standard to test your experimental results again.

What will the **control** be for your experiment?_____

_____

_____

3. Write a step-by-step procedure that:

- Lists materials and equipment needed. Make sure to specify the amount of each material in your procedure.
- Describes how the **control** is measured
- Describes in detail how the **independent variable** is changed and how the **dependent variable** is measured.

Materials:

Experimental Procedure (please number steps in order)

Written description of how you will measure you r **control:**

Written description of how your **independent variable** will be changed :

How will your **dependent variable** be measured:

Date received:_____Approved: Y N

Next Step: Revise topic and re-submit (or) go to Step 6

Comments:_____

_____

_____

_____

Step 6 – Conduct the Experiment and Keep Records

You will need to conduct multiple trials of your experimental procedure. Please refer back to the comments on Step 4.

Record the information in data-table format: Be sure to title your table and label both the X and Y axes.

Attach your data table to this Step.

Date received:_____Approved: Y N

Next Step: Revise topic and re-submit (or) go to Step 7

Comments:_____

_____

_____

_____

Step 7 – Analyze the Results

After all of the data has been collected, look for a pattern and try to formulate a conclusion. Construct a graph (may be computer generated or hand made on graph paper) to show your results.

- Values for the independent variable are placed on the horizontal axis and values for the dependent variable are placed on the vertical axis.
- Label your graph. Remember to include the units of measure for each Variable

Attach your graph to this Step.

Date received: _____Approved: Y N

Next Step: Revise topic and re-submit (or) go to Step 8

Comments: _____

_____

_____

_____

Step 8 – Develop a Conclusion

Using your data, graphs and observations, develop a conclusion that addresses the hypothesis. The conclusion represents what you actually learned by conducting the experiment. Also, provide suggestions for how you would do the experiment differently next time and a statement of the importance of the experiment.

1. Based on your experimental data, graphs and observations, was your hypothesis correct? Explain

2. What problems did you encounter?

3. How could you improve your procedure?

4. From your data and observations, what other things did you learn?

5. How did the knowledge you gained from this project important to you?

6. How could your project be useful in the real world?

Date received:_____Approved: Y N

Next Step: Revise topic and re-submit (or) Begin Working in display board

Comments:

(Science Fair Display Board Sample)
Title Of Science Fair Project

Left Side	**Center**	**Right Side**
Purpose: Hypothesis: **Use borders and colors to brings sections alive and make them stand out**	More research Diagrams Pictures Graphs Tables	Results W/detailed explanation of what it means Make sure your data is in Metric
Research or pictures of procedures Use info that will be interesting to your audience and give an individual some background info to understand your topic	• Be sure to provide captions where ever necessary • Stay away from florescent colors	**Tables and Graphs** Be sure to explain your graphs and tables and what the information is telling the audience
Copy of abstracts and safety sheet on back of board **(You should first ask your teacher if he/she requires this of you)**	You can provide any color, font, size decoration as long as it flows with the rest of your board	**Conclusion** Restate hypothesis and provide a scientific explanation of your findings and any real world applications of your project

APA Style Guideline

For a book:

1. Author's name, last name first.
2. Title of book, italicized .
3. Copyright date.

Example: Landau, Elaine. *Sea Horses.* 1999.

For a book with two authors:

1. Authors (in the order they are given in the book).
2. *Title of book.*(italicized)
3. City of publication:
4. Publisher, date.

Example: Smith, Elizabeth, and David Wright. *Rocks and Minerals.*
Chicago: Macmillan, 1995.

For an article from a print encyclopedia:

1. The subject you looked up, in quotation marks.
2. Full title of encyclopedia, italicized .
3. Copyright date.

Example: "Jaguar." *International Wildlife Encyclopedia.* 1991
"Washington, George." *The World Book Encyclopedia.* 2000.

For an article from an encyclopedia on CD-ROM:

1. The subject you looked up, in quotation marks.
2. Full title of encyclopedia, italicized .
3. Copyright date.
4. CD-ROM.

Example: "Earthquake." *Compton's Interactive Encyclopedia.* 1994.
CD-ROM.

For an encyclopedia from an online service:

1. The subject you looked up, in quotation marks.
2. Full title of encyclopedia, italicized .
3. Date you visited (proper format in the example).
4. Online.

Example: "Panda." *Compton's Living Encyclopedia.* 23 Nov.
1999. Online.

For an article from the World Wide Web:

1. Name of the author, if you can find it, last name first.
2. Title of the article, in quotes.
3. Title of the home page, if available, italicized.
4. Date you visited (see the examples).
5. First part of the http address (see the examples), in brackets.

Example: Schaller, George B. "Tiger." *World Book Online*. 16 Dec. 1999.
www.worldbookonline.com>

RECOMMENDED SITES TO VISIT

http://www.virtualsciencefair.com/

http://apps.ysf-fsj.ca/virtualcwsf/browse.php?year=&province=8&keyword=&name=&categoryid=&divisionid=&regionid=

http://mset.rst2.edu/portfolios/l/lautz_s/Science%20Fair%20Handbook/displayboard.html

http://www.super-science-fair-projects.com/elementary-science-fair-projects.html

http://www.ri.net/schools/East_Greenwich/Cole/sciencefair.html

http://scienceclub.org/scifair.html

http://school.discoveryeducation.com/sciencefaircentral/

http://www.makeitsolar.com/science-fair-information/02-science-fair-board-layout-2.htm

http://stas.edu.pe.ca/english/sub.cfm?section=fairs_general_info%20

http://mset.rst2.edu/portfolios/l/lautz_s/Science%20Fair%20Handbook/sciencefairideas.html

http://nausetschools.org/research/worksgrade6.htm

Science Fair Judging Sheet (Grades 3-6)

Excellent = 4; Good = 3; Partial = 2; Attempt Made = 1; Absent = 0

Title of Project:_____ Students:_____

Creativity	
Does the student demonstrate curiosity?	**4 3 2 1 0**
Does the project or display demonstrate ingenuity in the design and development of the project?	**4 3 2 1 0**
Has the student shown creativity in the design of the display?	**4 3 2 1 0**
	4 3 2 1 0
Scientific Thought	
Is the topic or problem an appropriate subject for scientific investigation?	**4 3 2 1 0**
Is the problem stated clearly?	**4 3 2 1 0**
Is it sufficiently narrow?	**4 3 2 1 0**
Is the method of investigation appropriate to the problem?	**4 3 2 1 0**
Have variables been eliminated, controls been made and results been double-checked?	**4 3 2 1 0**
Does the data collected justify the conclusion made?	**4 3 2 1 0**
	4 3 2 1 0
Thoroughness	
Is the project the result of careful planning?	**4 3 2 1 0**
Does the project indicate a thorough understanding of the chosen topic?	**4 3 2 1 0**
Is all information accurate?	**4 3 2 1 0**
Has sufficient data being collected?	**4 3 2 1 0**
Does the display represent a complete story?	**4 3 2 1 0**
	4 3 2 1 0
Skill	
Does the project reflect the student's own work?	**4 3 2 1 0**
Is the project sturdy and well constructed?	**4 3 2 1 0**
Is all the equipment used within the student's level of understanding or expertise?	**4 3 2 1 0**
Does the project meet safety requirements?	**4 3 2 1 0**
	4 3 2 1 0
Clarity	
Is the project self-explanatory? Can the average person understand it?	**4 3 2 1 0**
Are all lettering, signs, and diagrams neat and accurate?	**4 3 2 1 0**
Are all lettering, signs, and diagrams appropriately used or do they clutter or confuse?	**4 3 2 1 0**
Are visual aids an asset to understanding the projects or doe they clutter or confuse?	**4 3 2 1 0**
Interview	**4 3 2 1 0**
Is the student able to answer questions about the project with ease	**4 3 2 1 0**
Student (s) show sufficient knowledge of the subject	**4 3 2 1 0**
God and Creation	
Has the student learned anything about the nature of God in the process of studying his creation while doing this project?	**4 3 2 1 0**
TOTALS:	**/100**

Judged By:_____

Judge's Marking Sheet
Canada-Wide Science Fair

YOUTH SCIENCE FOUNDATION CANADA

FONDATION SCIENCES JEUNESSE CANADA

Use this form to give a mark to each exhibit, and to assist you in ranking the exhibits assigned to you. This mark will not be used in subsequent rounds of judging. Return this form to the Captain/Co-Captain of your Judging Team.

PART A: SCIENTIFIC THOUGHT – 45%

Experiment	Innovation	Study	Circle One Mark
Undertake an investigation to test a scientific hypothesis by the experimental method. At least one independent variable is manipulated; other variables are controlled.	Develop and evaluate new devices, models, theorems, physical theories, techniques, or methods in technology, engineering, computing, natural science, or social science.	Analysis of, and possibly collections of, data using accepted methodologies from the natural, social, biological, or health sciences. Includes studies involving human subjects, biology field studies, data mining, observation and pattern recognition in physical and/or socio-behavioural data.	
Level 1 (Low) – Mark Range 6 to 15			
Replicate a known experiment to confirm previous findings.	Build a model or device to duplicate existing technology or to demonstrate a well-known physical theory or social/behavioural intervention.	Existing published material is presented, unaccompanied by any analysis.	6 7 8 9 10 11 12 13 14 15
Level 2 (Fair) – Mark Range 16 to 25			
Extend a known experiment with modest improvements to the procedures, data gathering and possible applications.	Improve or demonstrate new applications for existing technological systems, social or behavioural interventions, existing physical theories or equipment, and justify them.	Existing published material is presented, accompanied by some modest analysis **and/or** a rudimentary study is undertaken that yields limited data that cannot support an analysis leading to meaningful results.	16 17 18 19 20 21 22 23 24 25
Level 3 (Good) – Mark Range 26 to 35			
Devise and carry out an original experiment. Identify the significant variables and attempt to control them. Analyse the results using appropriate arithmetic, graphical or statistical methods.	Design and build innovative technology; or provide adaptations to existing technology or to social or behavioural interventions; extend or create new physical theory. Human benefit, advancement of knowledge, and/or economic applications should be evident.	The study is based on systematic observations and a literature search. **Quantitative studies** should include appropriate analysis of some significant variable(s) using arithmetic, statistical, or graphical methods. **Qualitative and/or mixed methods studies** should include a detailed description of the procedures and/or techniques applied to gather and/or analyse the data (e.g. interviewing, observational fieldwork, constant comparative method, content analysis).	26 27 28 29 30 31 32 33 34 35
Level 4 (Excellent) – Mark Range 36 to 45			
Devise and carry out original experimental research in which most significant variables are identified and controlled. The data analysis is thorough and complete.	Integrate several technologies, inventions, social/behavioural interventions or design and construct an innovative application that will have human and/or commercial benefit.	The study correlates information from a variety of peer-reviewed publications and from systematic observations, and reveals significant new information, or original solutions to problems. Same criteria for analysis of significant variables and/or description of procedures/techniques as for Level 3.	36 37 38 39 40 41 42 43 44 45

PART B: ORIGINAL CREATIVITY – 25%

Rank 1 (Low) Mark Range 6 to 10	Rank 2 (Fair) Mark Range 11 to 15	Rank 3 (Good) Mark Range 16 to 20	Rank 4 (Excellent) Mark Range 21 to 25
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.
6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25

Judge's Marking Sheet
Canada-Wide Science Fair

YOUTH SCIENCE FOUNDATION CANADA
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PART C: VISUAL DISPLAY – 8%		TOTAL
Layout logical and self-explanatory	1 2 3 4 5	
Exhibit attractive and well-constructed	1 2 3	

PART D: ORAL PRESENTATION – 8%		TOTAL
Clear, logical, enthusiastic presentation	1 2 3 4 5	
Response to questions	1 2 3	

PART E: PROJECT REPORT & PROJECT LOG – 14%		TOTAL
Information content / substance	1 2 3 4	
Readability / clarity	1 2 3	
Bibliography and citations	1 2 3	
Project log (hard copy or electronic)	1 2 3 4	

PROJECT EVALUATION SUMMARY		MAX	MARK
PART A	Scientific Thought (from page 1)	45	
PART B	Original Creativity (from page 1)	25	
PART C	Visual Display	8	
PART D	Oral Presentation	8	
PART E	Project Report & Project Log	14	

TOTAL MARK AWARDED TO THIS PROJECT	

JUDGING NOTES

FEEDBACK FOR THE FINALIST(S)
Strengths
Recommendations

Judge's Name (Please print.)	Judge's Signature

Awards

RRVJA Awards:

RRVJA will award Gold, Silver and Bronze Medallions to projects according to the following criteria:

Gold Medal 86%-100% Silver Medal 75%-85% Bronze Medal 65%-74%

Upon recommendation of a school committee, RRVJA may consider full sponsorship of a maximum of 8 projects into the Manitoba Schools Science Symposium. These projects will have received a score of 80% or higher. Parents may choose to enter their child's project into the MSSS at their own expense.

MSSS Awards:

Major Awards

Individual Projects				
	Senior (Gr. 11 & 12)	Intermediate (Gr. 9 & 10)	Junior (Gr. 7 & 8)	**Elementary (Gr. 4 to 6)**
Best Overall	**$2000 & Plaque** Sponsored by: Manitoba Medical Association	**$500 & Plaque** Sponsored by: Manitoba Medical Association	**$250 & Plaque** Sponsored by: Manitoba Medical Association	**$250 & Plaque** Sponsored by: Manitoba Medical Association
Best Physical	**$250 & Plaque** Sponsored by: Richardson Foundation	**$150 & Plaque** Sponsored by: Richardson Foundation	**$100 & Plaque** Sponsored by: Richardson Foundation	**$100 & Plaque** Sponsored by: Richardson Foundation
Best Biological	**$250 & Plaque** Sponsored by: Monsanto Canada	**$150 & Plaque** Sponsored by: Monsanto Canada	**$100 & Plaque** Sponsored by: Monsanto Canada	**100 & Plaque** Sponsored by: Monsanto Canada

Group Projects				
	Senior (Gr. 11 & 12)	**Intermediate (Gr. 9 & 10)**	**Junior (Gr. 7 & 8)**	**Elementary (Gr. 4 to 6)**
Best Overall	**2 x $200 & Plaques** Sponsored by: Manitoba Hydro	**2 x $175 & Plaques** Sponsored by: Manitoba Hydro	**2 x $125 & Plaques** Sponsored by: Manitoba Hydro	**2 x $125 & Plaques** Sponsored by: Manitoba Hydro
Best Physical	**2 x $125 & Plaques** Sponsored by: Richardson Foundation	**2 x $100 & Plaques** Sponsored by: Richardson Foundation	**2 x $75 & Plaques** Sponsored by: Richardson Foundation	**2 x $75 & Plaques** Sponsored by: Richardson Foundation
Best Biological	**2 x $125 & Plaques** Sponsored by: Monsanto Canada	**2 x $100 & Plaques** Sponsored by: Monsanto Canada	**2 x $75 & Plaques** Sponsored by: Monsanto Canada	**2 x $75 & Plaques** Sponsored by: Monsanto Canada

- Special Awards

A number of organizations contribute judges and awards for projects that are related to their unique interests and concerns.

*Please note that awards are subject to change and may not be available every year.

1 Agrologists Award

Sponsor: **Manitoba Institute of Agrologists (Winnipeg Branch)**

Award: **One award of $100.00 plus Certificates at each level.**

Criteria: **Based on Agricultural Significance, Display, Research and Presentation Quality**

Levels: **Junior and Intermediate**

2 ASM International Award

Sponsor: ASM International (Manitoba Chapter)

Award: Individual Plaques and ASM Book awards for 1st & 2nd Place, plus school plaque for 1st place.

Criteria: Best Project in Materials Science or Engineering & Technology

Levels:

3 Analytical Sciences Award

Sponsor: Mid Canada AOAC

Award: Plaque & Cash Award

Criteria: Projects with a major focus on analytical determinations.

Levels: Junior and Senior

4 Association of Professional Engineers and Geoscientists Award

Sponsor: Association of Professional Engineers and Geoscientists of the Province of Manitoba (APEGM)

Award: Two $300 cash awards awarded at the Senior level
Two digital cameras ($250 each)
Four $150 McNally Robinson book certificates at the Intermediate or Junior levels.

Criteria: Projects of Engineering or Geoscience Merit

Levels: All Levels

5 Canadian Institute of Food Science & Technology Award

Sponsor: Canadian Institute of Food Science & Technology (Manitoba Section)

Award: Cash prize ($100) and certificate

Criteria: Knowledge of Subject, Creativity of Presentation, Innovation, Organization

Levels: Intermediate and Junior

6 Manitoba Science, Technology, Energy and Mines Award

Sponsor: Manitoba Science, Technology, Energy and Mines

Award: Lepidolite Carving

Criteria: Project dealing with Energy or Mines

Levels: All Levels

7 Genome Prairie Award

Sponsor: Genome Prairie

Award: Top senior $300.00; Top Junior $200.00; Top Intermediate $100.00

Criteria: Any project dealing with human, plant, animal or microbial genomics or closely related topic

Levels: All Levels

8 Home Economics Award

Sponsor: Manitoba Association of Home Economists (MAHE)

Award: One $50.00 Cash Awards and Certificates at Junior Level
One $50.00 Cash Awards and Certificates at Senior Level

Criteria: Human Ecology related theme (i.e. foods, clothing, family)

Levels: Junior & Senior

9 Biodiversity Conservation Award

Sponsor: Manitoba Conservation

Award: Five day trip to Churchill MB in October

Criteria: Successful student must win gold or silver in their category. The project must deal with animals either: a) endangered species b) biodiversity c) animal behavior d) climate change e) ecology f) Arctic biology. Only individual projects qualify.

Levels: Intermediate (S1&S2)

10 Physiotherapy Alliance Award

Sponsor: Physiotherapy Alliance

Award: Three $100.00 cash awards and certificates

Criteria: Health care related projects

Levels: 1 Elementary, 1 Intermediate.& 1 Junior

11 The Winnipeg Chapter of the Society for Neuroscience Award

Sponsor: The Winnipeg Chapter of the Society for Neuroscience

Award: Certificate and cash ($250, $150 and $100)

Criteria: Must relate to the nervous system, environmental studies, or disease related. Any work on behavioral diseases such as Alzheimer's or Parkinson's or the effects of trauma on brain function are encouraged.

Levels: All Levels

12 Canadian Meteorological and Oceanographic Society (CMOS) Award

Sponsor: Canadian Meteorological and Oceanographic Society

Award: Cheque

Criteria: Dealing with environment, meteorology, oceanography, or climatology

Levels: All Levels

13 Women's Health Research Foundation of Canada Award

Sponsor: Women's Health Research Foundation of Canada

Award: Four awards of $50.with letters of excellence and/or books for Junior and Senior levels plus Jennifer Aquin Memorial Scholarship, $50.00 & a book

Criteria: Projects that raise awareness of women's health issues in their broadest terms: Social, Psychological and Physical well being

Levels: All Levels

14 Canadian Cancer Society Researchers of Tomorrow Award

Sponsor: Canadian Cancer Society

Award: Three cash prizes ($100, $75, $50)

Criteria: Cancer related research projects in Chemistry, Environmental Science, Health Science, and Healthy Living

Levels: All levels

15 Derek Wong Memorial Scholarship

Sponsor: Derick Wong

Award: Cash prize of $350

Criteria: The prize is awarded to the student whose project is awarded a medal at the Manitoba Schools Science Symposium in the Senior high categories of chemistry, biology, or physics and is most strongly associated with the study of cancer.

Levels: Senior

16 CSBE/SCGAB Biosystems Engineering Award

Sponsor: Canadian society for engineering in agricultural, food and biological systems

Award: $100 Cash Junior & $100 Cash Senior

Criteria: The application of engineering principles to the solution of a problem associated with biological systems such as:

- the preservation of natural resources
- the production, processing and packaging of food
- and the biomedical applications

Levels: Junior (7-S1) and Senior (S2-S4)

17 Manitoba Society of Medical Laboratory Technologists Award

Sponsor: Manitoba Society of Medical Laboratory Technologists

Award: $100 & Certificate for each project level

Criteria: Project that demonstrates excellence in concept, practical application, and presentation in relation to medical laboratory science.

Levels: All Levels

18 McDonald's "I'm Lovin' Science Award"

Sponsor: McDonald's Restaurants of Canada Limited

Award: 2 x $100 in gift certificates

Criteria: Project related to food, food science, and/or the food industry.
Benefits or encourages the development of communities
Environmental and/or global aspect
Fun.

Levels: Elementary

19 Save Our Lake (SOUL) Award 2009

Sponsor: 'Save Our Lake' SOUL, Grindstone Cottagers Association
For more information please contact saveourlake@mts.net

Award: Individual project 1 X $100 Group project (max 2 students 1 X $150 In addition students will be invited to go on a 0.5 day trip on the research vessel Namao during the 2009 season, courtesy of the Lake Winnipeg Research Consortium. Note: one adult supervisor can accompany each category.

Criteria: Develop a presentation to **1)** create awareness of environmental problems impacting water quality of Lake Winnipeg and **2)** highlight actions that individuals can take to improve the health of the Lake. **In addition**, all entries must deliver their message (oral presentation) to a peer group, community group or any other organization **prior** to the day of the **MSSS** judging.
Note. Proof of this presentation must be presented at time of Judging.

Levels: Junior, Intermediate or Senior

20 Food Excellence Award

Sponsor: Maple Leaf Consumer Foods

Award: $100 & Certificate

Criteria: Food related projects

Levels: All

21 Labels Unlimited Award

Sponsor: Labels Unlimited

Award: $100, & Certificate

Criteria: Project related to food product marketing, package, label, or ingredients.

Levels: All levels

22 Peak of the Market Award

Sponsor: Peak of the Market

Award: $100, & Certificate

Criteria: Project related to a fruit or vegetable product, preferably Manitoba-grown.

Levels: Junior, Intermediate and Senior

23 Royal Astronomical Society of Canada Astronomy Award

Sponsor: Royal Astronomical Society of Canada Astronomy

Award: Certificate, cash prize of $50, student membership

Criteria: Best astronomy project in the MSSS

Levels: Any level

24 WISE Award

Sponsor: Women In Science and Engineering

Award: Certificate and $100

Criteria: Best project by a female student (or pair of female students) in the Physical Sciences.

Levels: Junior

25 Freshwater Fish Marketing Corporation (FFMC) Award

Sponsor: Freshwater Fish Marketing Corporation (FFMC)

Award: 3 $500 Tuition Certificate for MSA

Criteria: Project related to commercial fishing, water resources, fish production, fish processing, or fish marketing.

Levels: Junior & Senior

26 Asim K. Roy Memorial Award

Sponsor: Family of Asim K. Roy

Award: Certificate, plaque, and $300 cash.

Criteria: Project which best demonstrates innovation, and entrepreneurial spirit.

Levels: Grade 11 or 12

27 Manitoba Science Academy Award

Sponsor: Manitoba Science Academy

Award: 3 $500 Tuition Certificate for MSA

Criteria: Outstanding Grade 10 to 12 science project. Very flexible. Best overall science project, best physical science project, best biology science project

Levels: Grade 10 to 12

28 University of Manitoba Department of Food Science Award

Sponsor: University of Manitoba Department of Food Science

Award: Certificate and $100

Criteria: Focus on food science, food safety, or product development

Levels: Senior

29 University of Manitoba Department of Human Nutritional Sciences Award

Sponsor: University of Manitoba Department of Human Nutritional Sciences

Award: Certificate and $100

Criteria: Focus on nutritional properties, including nutraceuticals

Levels: All levels

30 Canada Compound Western Limited Award

Sponsor: Canada Compound Western Limited

Award: Certificate and $100

Criteria: Focus on flavor, including spices

Levels: All levels

31 Food Development Centre Award

Sponsor: Food Development Centre

Award: Certificate and $100

Criteria: Preferable product development focus

Levels: All levels

32 McCain Foods (Canada) Award

Sponsor: McCain Foods (Canada)
Award: Certificate and $100
Criteria: Food related
Levels: Elementary

33 Manitoba Food Processors Association (MFPA) Award

Sponsor: Manitoba Food Processors Association (MFPA)
Award: Certificate and $100
Criteria: Project related to food product, preferably Manitoba-made. Knowledge of subject area; creativity of presentation.
Levels: Intermediate and Senior

34 Special "Engineering Related" Award

Sponsor: Crosier Kilgour & Partners Ltd.
Award: $200 Cash Award
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

35 Special "Engineering Related" Award

Sponsor: FWS Construction
Award: $100 Cash Award
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

36 Special "Engineering Related" Award

Sponsor: IEEE Winnipeg Section
Award: Cash Award
Criteria: Projects of engineering merit are selected with emphasis on electrical engineering or electrical technology.
Levels: Intermediate, Junior and Senior

37 Special "Engineering Related" Award

Sponsor: Manitoba Hydro
Award: Science Mentors Day Award (i.e.: Job Shadowing opportunity)
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

38 Special "Engineering Related" Award

Sponsor: Maple Leaf Construction Ltd.
Award: Two $100 Cash Awards
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

39 Special "Engineering Related" Award

Sponsor: Nelson River Construction
Award: $150 Cash Award
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

40 Special "Engineering Related" Award

Sponsor: Oldfield Kirby Esau Inc.
Award: $100 Cash Award
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

41 Special "Engineering Related" Award

Sponsor: Teshmont Consultants LP
Award: Technology Plus Mini-University Enrolment (~$165)
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

42 Special "Engineering Related" Award

Sponsor: Manitoba Geological Survey
Award: MGS Geological Hammer & Cash
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

43 Special "Engineering Related" Award

Sponsor: The National Testing Laboratories Ltd.
Award: $100 Cash Award
Criteria: Projects of engineering or geoscience merit are selected with emphasis on Civil Engineering, structures or materials related projects.
Levels: Intermediate, Junior and Senior

44 Special "Engineering Related" Award

Sponsor: Vector Construction Group
Award: $100 and $150 Cash Awards
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior

45 Special "Engineering Related" Award

Sponsor: KGS Group
Award: $200 Cash Award
Criteria: Projects of engineering or geoscience merit are selected.
Levels: Intermediate, Junior and Senior