

Manitoba Schools Science Symposium

Grade 7 to 12 Judges Marking Sheet

PART A: SCIENTIFIC THOUGHT – 45% (Award <u>one mark</u>, to a maximum of 45)			Mark
<p style="text-align: center;">Experiment</p> <p>An investigation undertaken to test a scientific hypothesis experimentally. The variables, if identified, are controlled to some extent.</p>	<p style="text-align: center;">Innovation</p> <p>The development and evaluation of innovative devices, models or techniques or approaches in technology, engineering or computers (hardware or software).</p>	<p style="text-align: center;">Research / Study</p> <p>A collection and analysis of data to reveal evidence of a fact or a situation of scientific interest. It could include a study of cause and effect or theoretical investigations of scientific data.</p>	
Fair: Range = 25 – 30 Marks			
<p><i>Duplicate a known experiment</i> to confirm the hypothesis. The hypothesis is totally predictable.</p>	<p>Build models (devices) to <i>duplicate existing technology</i>.</p>	<p>Study existing printed material related to the basic issue.</p>	
Good: Range = 31 – 35 Marks			
<p><i>Extend a known experiment</i> through modification of procedures, data gathering, and application.</p>	<p>Make <i>improvements to</i> or demonstrate new applications for <i>existing technological systems or equipment</i> and justify them.</p>	<p>Study material collected through a compilation of existing data and through personal observations. Display attempts to address a specific issue.</p>	
Very Good: Range = 36 – 40 Marks			
<p>Devise and carry out an <i>original experiment</i>. Identify and control most of the significant variables. Carry out significant analysis using graphs or simple statistics.</p>	<p>Design and built innovative technology or provide <i>adaptations to existing technology</i> that will have human benefit and/or economic applications.</p>	<p>Carry out a study based on observations and literary research illustrating various options for dealing with a relevant issue. Include appropriate analysis (arithmetic, statistical, or graphical) of some significant variable(s).</p>	
Excellent: Range = 41 – 45 Marks			
<p>Devise and carry out <i>original experimental research</i>, which attempts to control or investigate most significant variables. Include more in-depth analysis of results. <i>May</i> include advanced statistical treatments of data.</p>	<p><i>Integrate several technologies, inventions or designs</i> and construct an innovative technological system that will have human and/or commercial benefit.</p>	<p><i>Correlate information from a variety of significant sources</i>, which may illustrate cause and effect or original solutions to current problems through synthesis. <i>Identify significant variable(s) with an in-depth analysis of data</i>. Should use <i>appropriate statistical treatments</i>.</p>	

- 1) Examine the descriptors across the top to determine which column the project best fits;
- 2) Follow the descriptions downward to determine which box fits the project, and note the mark range above;
- 3) Assign the project a score within the range, and enter it into the space provided in the right column.

NOTE: A project may cross over and include combinations of the three categories above, in most cases making it a stronger project overall. Additionally, as we move down the levels, *we must also factor in the level of difficulty* of both the content material and the experimental design relative to the age and grade level of the student. The elements above and this last point must be synthesized, and then, the project compared with the others in the category being examined, before a final mark is awarded. This is where the judge's expertise, experience, and discretion become invaluable.

PART B: ORIGINALITY and CREATIVITY – 25% (Award <i>one mark</i> to a maximum of 25)			
Rank 1 (fair) Mark Range 5 to 10	Rank 2 (good) Mark Range 10 to 15	Rank 3 (very good) Mark Range 15 to 20	Rank 4 (excellent) Mark Range 20 to 25
Little imagination shown. Project design is simple with minimal student input. A textbook or magazine type project.	<i>Some creativity shown</i> in a project of fair to good design. Standard approach using common resources or equipment. <i>Topic is a common one.</i>	Imaginative project, good use of available resources. Well thought out, above ordinary approach. Creativity shown in design and/or use of materials.	<i>A highly original project</i> or a novel approach. Shows resourcefulness and creativity in design, use of equipment and/or construction of project. Project represents new research in the field.
Mark			

“Project Identification Information inserted in this box”

PART C: DISPLAY
Maximum 20 Marks

1. Skill (Maximum 10 Marks)	Max	Mark
Necessary scientific skill shown.	3	
Exhibit is well constructed.	3	
Material is prepared independently by the student.	2	
Judge’s discretion.	2	
2. Dramatic Value (Max 10 marks)		
Layout logical and self-explanatory.	3	
Exhibit attractive.	3	
Clear logical enthusiastic presentation.	3	
Judge’s discretion.	1	
Total Display Mark	20	

PART D: PROJECT SUMMARY
Maximum 10 Marks

1. Information	Max	Mark
Is all the required information provided?	3	
Is the information in the specified format?	1	
Is the information presented clearly with continuity?	2	
Does the summary accurately reflect the project?	2	
2. Presentation		
Neatness, grammar, spelling in the report.	2	
Total Project Summary Mark	10	

Total Marks		
Part A: Scientific Thought (from page I)	45	
Part B: Original Creativity	25	
Part C: Display	20	
Part D: Project Summary	10	
Total Mark awarded to this exhibit	100	

NOTE:

Marks in all categories may be “Tempered” by the extent to which student ownership of the research, contribution to the project, and level of knowledge and skills are Evident.