

## Manitoba Schools Science Symposium

### Grade 4 to 6 Judges Marking Sheet

| <b>PART A: SCIENTIFIC THOUGHT – 45% (Award <u>one mark</u>, to a maximum of 45)</b>  |  |  | <b>Mark</b> |
|--|--|--|-------------|
| <p style="text-align: center;"><b>Experiment</b></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;"><b>Innovation</b></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;"><b>Research / Study</b></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> |             |
| <b>Fair: Range = 25 – 30 Marks</b>   |  |  |             |
| <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>. Represents <i>existing technology but does not replicate workings</i>.</p>  | <p>Study existing printed material related to the basic issue. Use a limited number of sources. Results are completely predictable. Topic is common.</p>   |             |
| <b>Good: Range = 31– 35 Marks</b>  |  |  |             |
| <p><i>Use multiple experiments or replications</i> of the same test to strengthen the study. Level of work is very strong or advanced for the age/grade level.</p>   | <p>Design and build a working model of an existing technology, or a model to demonstrate application of an existing technology.</p>  | <p>Use of multiple sources. Some comparison and synthesis of information. Understands some applications of knowledge.</p>  |             |
| <b>Very Good: Range = 36 – 40 Marks</b>  |  |  |             |
| <p>Extend a known experiment through modification of procedures, data gathering, and applications. Use multiple experiments / replications to strengthen inferences.</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>  |             |
| <b>Excellent: Range = 41 – 45 Marks</b>  |  |  |             |
| <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. Strong understanding of the scientific method. High difficulty level for the age/grade level.</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>                             |             |

- 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.

| <b>PART B: ORIGINALITY and CREATIVITY – 25% (Award <i>one mark</i> to a maximum of 25)</b>                          |  |  |  |
|---|--|--|--|
| <b>Rank 1 (fair)</b><br><b>Mark Range 5 to 10</b>   | <b>Rank 2 (good)</b><br><b>Mark Range 10 to 15</b>   | <b>Rank 3 (very good)</b><br><b>Mark Range 15 to 20</b>  | <b>Rank 4 (excellent)</b><br><b>Mark Range 20 to 25</b>  |
| 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. |
| <b>Mark</b>   |  |  |  |

“Project Identification Information inserted in this box”

**PART C: DISPLAY**  
**Maximum 20 Marks**

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

**PART D: PRESENTATION**  
**Maximum 10 Marks**

| <b>1. Information</b>  | <b>Max</b> | <b>Mark</b> |
|--|------------|-------------|
| Student demonstrates excellent knowledge of the project and adequate knowledge of the field. | 5          |             |
|  |            |             |
| The information is presented clearly with continuity.  | 2          |             |
| The oral summary accurately reflects the project.  | 1          |             |
|  |            |             |
| The student is able to answer all questions adequately.                                      | 2          |             |
| <b>Total Oral Presentation Mark</b>  | <b>10</b>  |             |

| <b>Total Marks</b>                        |            |  |
|---|------------|--|
| Part A: Scientific Thought (from page I)  | 45         |  |
| Part B: Original Creativity               | 25         |  |
| Part C: Display                           | 20         |  |
| Part D: Presentation                      | 10         |  |
| <b>Total Mark awarded to this exhibit</b> | <b>100</b> |  |

**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.*