SCIENCE TALENT SEARCH
SCIENCE TEACHERS' ASSOCIATION of VICTORIA
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# JUDGE'S EVALUATION SHEET

## JUNIOR EXPERIMENTAL RESEARCH

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|---|
| FULL NAME OF ENTRANT<br>OR GROUP LEADER |
| ENTRY CODE SCHOOL CODE |
| NAME OF PROJECT |

Reference Copy

(Please complete form online)

| Judging Guideline and Criteria | Very Little or Not Shown | Limited or Satisfactory | Good | Excellent |
|---|---|---|---|---|
| **1. Abstract/Summary** is clear and relevant | **0** | **1** | | **2** |
| **2. Introduction** is relevant to the topic, defines key terms and provides background information | **0** | **1** | **2** | **3** |
| **3. Aim** is clear, and hypothesis is included | **0** | **1** | **2** | **3** |
| **4. Method and Materials –** describes clearly how the experiment was carried out with safety precautions (Risk Assessment included), and a complete list of equipment and materials used is given | **0 – 1** | **2** | **3** | **4** |
| **5. Experimental Design –** is the design logical/innovative, are controls used where appropriate, have sufficient measurements /comparisons been made? | **0** | **1 – 2** | **3 – 4** | **5 – 6** |
| **6. Care & Detail in Obtaining and Recording Results/Data** appropriate observations are made and use of tables, graphs, diagrams is evident, clearly labelled and correct units used | **0** | **1 – 2** | **3** | **4 – 5** |
| **7. Trends in Results/Data** are appropriately presented and clearly shows all trends in the data | **0 – 1** | **2** | **3** | **4** |
| **8. Thoroughness of Discussion including error analysis –** analysis of results and discussion of the implications of the results and observations, problems encountered, possible errors, future investigations and links to the hypothesis and background information | **0** **1** | **2** **3** | **4** **5** | **6** **7** |
| **9. Conclusion** is clear and relates to the aim and/or hypothesis | **0 – 1** | **2** | **3** | **4** |
| **10. Acknowledgements and References** – multiple sources of information and assistance has been acknowledged and referenced | **0** | **1** | **2** | **3** |
| **11. Presentation and Neatness** – overall presentation in terms of use of correct format, neatness etc | **0** | **1 – 2** | **3** | **4 – 5** |
| **12. Originality and Creativity –** is the topic original or simply a tried experiment**.** | **0 – 1** | **2** | **3** | **4** |

**SUITABLE FOR STS PUBLICITY** ☐ YES ☐ NO **TOTAL SCORE** _____ **/50**

**COMMENTS TO CO-ORDINATOR:**

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Name …… Signed ……

**JUNIOR EXPERIMENTAL RESEARCH SECTION *MARKING CRITERIA***

| | | | | |
|---|---|---|---|---|
| *1. Clarity & Relevance of Abstract or Summary* | (1)<br>The abstract is not clearly written and has minimal relevance to the research. | (2)<br>The abstract is clearly written and is a concise summary of the research | . | |
| *2. Completeness & Relevance of Introduction* | (1-2)<br>The introduction has minimal science content relevant to the research and outlines few reasons as to why the research was done. | (3)<br>The introduction outlines the science ideas relevant to the research and clearly states the reasons as to why the research was done. | | |
| *3. Clarity of aim including hypothesis* | (1)<br>The aim of the experiment is not clear and no hypothesis is suggested | (2)<br>Aim of the experiment is stated with a hypothesis but either the aim or the hypothesis is not clear or relevant. | (3)<br>Aim of the experiment is clearly stated with a hypothesis | |
| *4. Presentation of Method & Materials* | (1)<br>Method is confusing and incomplete, with poorly labelled and/or inappropriate diagrams and insufficient information to replicate the experiment by a third party. Poor safety considerations, Risk Assessment not included. | (2)<br>Method is incomplete with poorly labelled and/or inappropriate diagrams. A third party would have difficulty replicating the experiment on the information provided. Limited Risk Assessment included. | (3)<br>Method is clearly written, with appropriate labelled diagrams and information so that the experiment could be replicated by a third person. All materials used are recorded. Adequate Risk Assessment included. | (4)<br>Method is clearly written in point form, third person and past tense, with appropriate labelled diagrams and information so that the experiment could be easily replicated by a third person. All materials used are recorded. Extensive and thorough Risk Assessment included. |
| *5. Experimental Design* | (1-2)<br>Four or more aspects of the experimental design are missing or poorly implemented. | (3-4)<br>Two or more aspects of the experimental design are missing or poorly implemented. | (5-6)<br>The experiment<br>• tests the hypothesis and<br>• includes steps to minimise errors including<br>• repetition to reduce random errors.<br>• Includes experimental controls and<br>• the control or minimisation of variables so that only one variable is examined at a time.<br>• The experiment utilises appropriate means of collecting results. | |
| *6. Care & Detail in obtaining and recording results / data* | (1-2)<br>Results are not presented in an easily understood format and not clearly labeled. Values are recorded with inappropriate significant figures and subjective results have been used. | (3)<br>Results have been presented in an appropriate manner but there is a few significant aspects missing, including: clear headings, using appropriate units, values are recorded with inappropriate significant figures given the measuring devise and/or subjective results have not been used. | (4-5)<br>Data is recorded in table format, where appropriate, in an easy to follow format with clear headings and using appropriate units. Values are recorded with appropriate significant figures given the measuring devise. Subjective results have not been used. | |
| *7. Presentation of results / data* | (1)<br>Poorly drawn graphs that do not show the trends in the data<br>Axes poorly labeled. | (2)<br>The data has been presented with a graph or other appropriate format but does not show clear trends in the data. Axes poorly labeled. | (3)<br>The data has been presented with a labelled graph or other appropriate format that shows trends in the data. | (4)<br>The data has been presented with an appropriately labelled (title axes, units and trendlines) graph or other appropriate format that clearly shows all trends in the data. |
| *8. Thoroughness of Discussion including error analysis* | (1)<br>The discussion includes a statement of the results with minimal analysis of its significance or validity. The examination of errors or how the experiment could be improved is missing. | (2-4)<br>The discussion has a brief analysis of the results including any implications of the results. A statement of whether the hypothesis was supported or not is included. Suggestions have been made on how the experiment could be improved to obtain more meaningful results and/or less error. A brief investigation of the problems encountered and how they were dealt with is included. | (5-7)<br>The discussion includes a detailed analysis of the results including the implications and validity of the results. A statement of whether the hypothesis was supported or not is included. Good suggestions have been made on how the experiment could be improved to obtain more meaningful results and less error. A thorough investigation of the problems encountered and how they were dealt with is included. | |
| *9. Clarity of conclusion* | (1-2)<br>Conclusion is a restatement of the results or that the aim has been met. | (3-4)<br>Conclusion clearly & concisely outlines the significant findings of the research as related to the aim &/or hypothesis. | | |
| *10. Completeness of acknowledgments and references* | (1)<br>References do not follow the guidelines outlined by STS (pg 23 of handbook) | (2)<br>References follow guidelines outlined by STS (pg 23 of handbook) | (3) References from multiple sources: eg. web, books, journals and follow guidelines outlined by STS (pg 23 of Handbook) | |
| *11. Presentation & neatness* | (1-2)<br>Not presented in a manila folder and/or does contain accessories. Not presented in a well laid out format and the report is difficult to follow and read. | (3)<br>Presented stapled together in a manila folder with no accessories. Not presented in a well laid out format or the report is difficult to follow and/or read. | (4-5)<br>Presented stapled together in a manila folder with no accessories. Presented in a well laid out format that is easy to follow and read. | |
| *12. Originally and creativity* | (1)<br>A common experiment obtaining predictable results. | (2)<br>Some attempt has been made to modify a common experiment well. | (3-4)<br>An original experiment or an interesting variation on an experiment and/or a creative method for obtaining data. | |