

**Singapore Science and Engineering Fair  
Pre-Judging Scoring Rubrics**

**FOR SCIENCE PROJECTS**

Criteria	Low	Medium	High
<b>Research Question (Science projects)</b>	<ul style="list-style-type: none"> <li>States the purpose of the research</li> <li>Testable using scientific methods</li> </ul>	<ul style="list-style-type: none"> <li>States a clear and focused purpose of the research</li> <li>Testable using scientific methods</li> </ul>	<ul style="list-style-type: none"> <li>States a clear and focused purpose of the research</li> <li>Testable using scientific methods</li> <li>Identifies contribution to the field of study</li> </ul>
<b>Design and Methodology</b>	<ul style="list-style-type: none"> <li>Proposes valid data collection methods</li> <li>Identifies suitable variables and control parameters</li> </ul>	<ul style="list-style-type: none"> <li>Proposes a well-designed plan and valid data collection methods</li> <li>Identifies and defines some key variables and control parameters</li> </ul>	<ul style="list-style-type: none"> <li>Proposes a well-designed plan and valid data collection methods</li> <li>Identifies and defines all key variables and all appropriate control parameters</li> </ul>
<b>Execution: data collection, analysis and interpretation</b>	<ul style="list-style-type: none"> <li>Identification of data to be collected and analysed</li> <li>Application of mathematical and statistical methods</li> </ul>	<ul style="list-style-type: none"> <li>Systematic identification of data to be collected and analysed</li> <li>Appropriate application of mathematical and statistical methods</li> <li>Sufficient amount of data collected to support interpretation and conclusions</li> </ul>	<ul style="list-style-type: none"> <li>Systematic identification of data to be collected and analysed</li> <li>Results can be reproduced</li> <li>Appropriate application of mathematical and statistical methods</li> <li>Sufficient amount of data collected to support interpretation and conclusions</li> </ul>
<b>Creativity</b>	<ul style="list-style-type: none"> <li>Project demonstrates some creativity in one or more of the above criteria</li> </ul>	<ul style="list-style-type: none"> <li>Project demonstrates significant creativity in some of the above criteria</li> </ul>	<ul style="list-style-type: none"> <li>Project demonstrates significant creativity in all of the above criteria</li> </ul>
<b>Written Report</b>	<ul style="list-style-type: none"> <li>Scientific literature reviewed are relevant to project</li> <li>Displays understanding of basic science relevant to project</li> <li>Logical organization of material</li> <li>Clarity of graphics and legends</li> </ul>	<ul style="list-style-type: none"> <li>Scientific literature reviewed are relevant to project</li> <li>Displays good understanding of basic science relevant to project</li> <li>Displays understanding of interpretation and, limitations of results and conclusions</li> <li>Clear and concise writing</li> <li>Logical organization of material</li> <li>Clarity of graphics and legends</li> </ul>	<ul style="list-style-type: none"> <li>Scientific literature reviewed are relevant to project</li> <li>Displays good understanding of basic science relevant to project</li> <li>Displays keen understanding of interpretation and, limitations of results and conclusions</li> <li>Clear and concise writing</li> <li>Logical organization of material</li> <li>Clarity of graphics and legends</li> <li>Recognition of potential impact in science, society and/or economics</li> <li>Quality of ideas for further research</li> </ul>

**Singapore Science and Engineering Fair  
Pre-Judging Scoring Rubrics**

**FOR ENGINEERING PROJECTS**

Criteria	Low	Average	High
<b>Research Problem (Engineering projects)</b>	<ul style="list-style-type: none"> <li>• Identification of a practical need or problem to be solved</li> <li>• Defines criteria for proposed solution</li> </ul>	<ul style="list-style-type: none"> <li>• Clear description of a practical need or problem to be solved</li> <li>• Defines criteria for proposed solution</li> </ul>	<ul style="list-style-type: none"> <li>• Clear description of a practical need or problem to be solved</li> <li>• Defines criteria for proposed solution</li> <li>• Provides explanation of constraints</li> </ul>
<b>Design and Methodology</b>	<ul style="list-style-type: none"> <li>• Identification of a solution</li> <li>• Development of a prototype/model</li> </ul>	<ul style="list-style-type: none"> <li>• Exploration of alternatives to answer need or problem</li> <li>• Identification of a solution</li> <li>• Development of a viable prototype/model</li> </ul>	<ul style="list-style-type: none"> <li>• Exploration of alternatives to answer need or problem</li> <li>• Identification of a solution</li> <li>• Development of a viable prototype/model that is innovative</li> </ul>
<b>Execution: data collection, analysis and interpretation</b>	<ul style="list-style-type: none"> <li>• Prototype demonstrates intended design</li> </ul>	<ul style="list-style-type: none"> <li>• Prototype demonstrates intended design</li> <li>• Prototype demonstrates engineering skill and completeness</li> </ul>	<ul style="list-style-type: none"> <li>• Prototype demonstrates intended design</li> <li>• Prototype has been tested in multiple conditions/trials</li> <li>• Prototype demonstrates engineering skill and completeness</li> </ul>
<b>Creativity</b>	<ul style="list-style-type: none"> <li>• Project demonstrates some creativity in one or more of the above criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Project demonstrates significant creativity in some of the above criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Project demonstrates significant creativity in all of the above criteria</li> </ul>
<b>Written Report</b>	<ul style="list-style-type: none"> <li>• Scientific literature reviewed are relevant to project</li> <li>• Displays understanding of basic science relevant to project</li> <li>• Logical organization of material</li> <li>• Clarity of graphics and legends</li> </ul>	<ul style="list-style-type: none"> <li>• Scientific literature reviewed are relevant to project</li> <li>• Displays good understanding of basic science relevant to project</li> <li>• Displays understanding of interpretation and, limitations of results and conclusions</li> <li>• Clear and concise writing</li> <li>• Logical organization of material</li> <li>• Clarity of graphics and legends</li> </ul>	<ul style="list-style-type: none"> <li>• Scientific literature reviewed are relevant to project</li> <li>• Displays good understanding of basic science relevant to project</li> <li>• Displays keen understanding of interpretation and, limitations of results and conclusions</li> <li>• Clear and concise writing</li> <li>• Logical organization of material</li> <li>• Clarity of graphics and legends</li> <li>• Recognition of potential impact in science, society and/or economics</li> <li>• Quality of ideas for further research</li> </ul>