

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

FOR SCIENCE PROJECTS

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

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

FOR ENGINEERING PROJECTS

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