



Young Scientist Awards



JUDGING RUBRIC: MANSW Working Mathematically, Years 3-4

Rubric 3-4	1	2	3	4	5
	<i>The student has provided evidence that he/she:</i>	<i>The student has provided evidence that he/she:</i>	<i>The student has provided evidence that he/she incorporated various components of Working Mathematically in their investigation or innovation:</i>	<i>The student has provided evidence that he/she incorporated various components of Working Mathematically in their investigation or innovation:</i>	<i>The student has provided clear and convincing evidence that he/she incorporated the interrelated components of Working Mathematically in their investigation or innovation:</i>
Communicating	- used everyday language and diagrams to describe their investigation or innovation.	- used some mathematical language, symbols and diagrams, along with some everyday language to explain their investigation or innovation.	- used a variety of mathematical language, symbols, diagrams, tables and graphs to accurately communicate their mathematical strategies and results.	- used more sophisticated mathematical language, symbols, diagrams, tables and graphs to enhance how they explain their mathematical strategies and results.	- demonstrated a sophisticated level of communication to clearly explain how they applied mathematics to their project and usually selected the most appropriate graphical display with or without digital technologies.
Problem Solving	- attempted to use mathematical strategies to solve problems within their investigation or innovation.	- used some mathematical strategies to solve problems within their investigation or innovation.	- selected and applied mathematical strategies to formulate and explore problems within their project. - identified a problem or matter of interest, choosing some suitable questions to seek data.	- demonstrated evidence of more sophisticated strategies used to plan and develop their project. - identified a problem or matter of interest, choosing suitable questions for collection of data.	- used sophisticated, efficient strategies to formulate, solve and verify problems within their project. - investigated a problem or matter of interest, posing insightful questions for collection of relevant data.
Reasoning	- provided some reasoning for the procedure selected but offered no explanation for the mathematical concepts used or the data collected.	- attempted to explain the mathematical thinking and the strategies used. - offered some explanation for any conclusions they reached.	- explained their mathematical thinking, justified their choices and the conclusions they reached. - identified some trends and relationships and demonstrated how the data collected supported conclusions.	- explained their mathematical thinking, justified strategies used and conclusions reached within their project. - discussed trends and relationships in data collected.	- effectively explained their mathematical thinking and justified strategies used to compare and contrast related ideas and conclusions reached. - made valid conclusions based on a thorough analysis of data collected.
Understanding	- demonstrated minimal understanding of the mathematical concepts used.	- demonstrated basic understanding of the mathematical concepts applied.	- demonstrated an understanding of the mathematical concepts applied.	- connected related ideas, represented concepts in different ways and accurately interpreted mathematical information.	- adapted and transferred mathematical concepts, made connections between related concepts and accurately interpreted mathematical information.
Fluency	- demonstrated minimal use of mathematical calculations.	- attempted to use some mathematical calculations. - detail missing from diagrams and tables.	- demonstrated competence when performing mathematical calculations. - included some of the elements of tables, graphs and diagrams needed to make sense of the information presented.	- clear evidence of effective mathematical calculations and appropriate procedures. - included most elements of tables, graphs and diagrams needed to make sense of the information presented.	- demonstrated sophisticated, accurate, effective and appropriate mathematical calculations and procedures. - included all necessary elements (conventions) in tables, graphs and diagrams to make sense of the information being presented.