



Young Scientist Awards



JUDGING RUBRIC: IIATE Innovations and Engineering Design, Years 9–10

Level	Description
5	<p>The student has provided clear, consistent and convincing evidence that he/she:</p> <ul style="list-style-type: none">• actively designed and built a prototype of an innovative device over a period of time• identified a need or problem and developed a solution that is a significant improvement over previous alternatives or applications• addressed an issue of social or technological significance• displayed a deep understanding of technological concepts used in the prototype• included a concise and comprehensive summary of relevant prior research in the field, exploring the existence of similar devices• had been creative in the prototype's design, innovative in the development of an original solution and enterprising in commercial awareness and decision making• employed safe and quality construction and design skills• had convincing arguments for the choice of materials and technologies selected• produced a neat and reliable prototype that's easy to use and performs as intended• included a comprehensive portfolio or log book, detailing the stages of the design process from brainstorming, through prototyping, to final product and evaluation• used critical thinking in the evaluation and testing of the prototype, discussing alternatives and modifications• suggested worthwhile directions for future development in a succinct manner• formally acknowledged those who contributed to the project• used clear, concise and meaningful language to communicate the operational details and applications of the prototype to the intended audience
4	<p>The student has provided substantial evidence that he/she:</p> <ul style="list-style-type: none">• designed and built a prototype of an innovative device with considerable planning• developed an innovative device which is a solution to a need or problem, different from previous alternatives or applications• designed the innovative device for the benefit of society• displayed a thorough understanding of technological concepts used in the device• included a summary of current relevant information• designed an innovative prototype and developed an original solution• had shown skill in the design and construction of the prototype and safe procedures were adopted in the prototype's production• included some justification for the selection of materials• had constructed a prototype that is easy to use and performs as intended• included a portfolio or log book detailing the different stages of the design process• exhibited rational thinking in the testing and evaluation of the prototype• put forward directions for future development• acknowledged and provided details of any assistance given• effectively communicated the prototype's operational details and the language and visuals take account of the audience

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3	<p>The student has provided evidence that he/she:</p> <ul style="list-style-type: none"> • designed and built a prototype of an innovative device over a period of time • developed an innovative device which is a solution to a need or problem • had an innovative device which has some innovative or creative features • demonstrated an understanding of technological concepts used in the device • collected background research with some relevance to the need or problem • considered a variety of designs with the selected design being chosen with little justification • displayed good workmanship in the design and construction of the prototype • used materials in the prototype model's construction with little justification • had constructed a prototype that works • had performed preliminary testing of the prototype • provided supporting documentation in the accompanying portfolio or log book • put forward some good and practical ideas for future improvements • acknowledged any assistance given • communicated the prototype's operational details with good use of language visuals and sequencing, appropriate to the intended audience
2	<p>The student has provided evidence that he/she:</p> <ul style="list-style-type: none"> • built a prototype of an innovative device with little planning or design • had an innovative device lacking any innovative or creative features • demonstrated some understanding of technological concepts used in the prototype • performed limited or general background research • considered only one or two designs before commencing constructing • displayed simple workmanship in the design and construction of the prototype • used some materials in the prototype's construction that were not suitable • had tested the prototype with irregular performances • provided limited documentation in the accompanying portfolio or log book • put forward some ideas for future improvements • received some assistance but did not provide details of the assistance given • included an adequate set of operational instructions to assist the audience
1	<p>The student has provided evidence that he/she:</p> <ul style="list-style-type: none"> • entered a prototype of an innovative device that does not fully work • demonstrated little understanding of technological concepts used in the device • performed nominal or irrelevant background research • provided designs and sketches that were haphazard • made a prototype with poor workmanship • poorly selected materials and technologies • had not sufficiently tested the prototype and ideas for future improvements are vague and impractical • provided limited or disorganised documentation • neglected to acknowledge assistance given • provided poorly expressed operational instructions for the innovative device