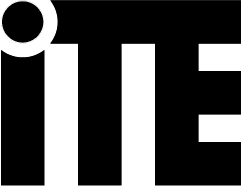
**Young Scientist Awards**

**JUDGING RUBRIC: iTE Innovations and Engineering Design**

**Years 9-10**

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| --- | --- |
| Level | Description |
| 5 | The student has provided clear, consistent and convincing evidence that he/she:   * **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 | The student has provided substantial evidence that he/she:   * 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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**Years 9-10**

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| 3 | The student has provided evidence that he/she:   * 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 * collectedbackground 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 | The student has provided evidence that he/she:   * built a prototype of an innovative device with **little** planning or design * built a 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 | The student has provided evidence that he/she:   * entered a prototype of a 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 |