**Young Scientist Awards**

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

 **Years 9-10**

|  |  |
| --- | --- |
| 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
 |

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

 **Years 9-10**

|  |  |
| --- | --- |
| 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
 |