## JUDGING RUBRIC: iTE Innovations and Engineering Design

### Years 9–10

<table>
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<th>Level</th>
<th>Description</th>
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| 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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| 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  
- 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     | 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 |