**MYP 5 Science - Criterion C: Processing and Evaluating Name: \_\_\_\_\_\_\_\_\_\_\_\_**

Use the following task-specific clarifications to help you with your car safety-feature lab.

\*IDV = Independent variable

\*DV = Dependent variable

\*CV = Controlled variable

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| **Achievement Level** | **Level Descriptor** | **Clarifications** |
| **0** | The student does not reach a standard described by any of the descriptors below. | The student does not reach a standard described by any of the descriptors below. |
| **1–2** | The student is able to;   1. **collect and present** data in numerical and/or visual forms 2. **interpret** data 3. **state** the validity of a hypothesis based on the outcome of a scientific investigation 4. **state** the validity of the method based on the outcome of a scientific investigation 5. **state** improvements or extensions to the method | * I attempted to **collect** and **present** DV’s and IDV’s in a table or graph * I attempted to observe trends in the data * I **stated** how the data supports or rejects the hypothesis validity of a hypothesis based on what happened in the experiment * I **stated** improvements or extensions to the method |
| **3–4** | 1. **correctly collect and present** data in numerical and/or visual forms 2. **accurately interpret** data and **explain** results 3. **outline** the validity of a hypothesis based on the outcome of a scientific investigation 4. **outline** the validity of the method based on the outcome of a scientific investigation 5. **outline** improvements or extensions to the method that would benefit the scientific investigation. | * I correctly **collected** and **presented** the DV/s and IDV/s in a table or graph * I **stated** a trend based on the data * I **outlined** how the data supports or rejects the hypothesis validity of a hypothesis based on what happened in the experiment. * I **outlined** if the method allowed for sufficient collection of data based on the outcome * I outlined improvements to the method that would benefit the scientific investigation |
| **5–6** | 1. **correctly collect, organize and present** data in numerical and/or visual forms 2. **accurately interpret** data and **explain** results **using scientific reasoning** 3. **discuss** the validity of a hypothesis based on the outcome of a scientific investigation 4. **discuss** the validity of the method based on the outcome of a scientific investigation 5. **describe** improvements or extensions to the method that would benefit the scientific investigation. | * I **collected** the DVs, show how the IDV’s were manipulated and **organized** and **presented** the data in a suitable table or graph * I drew a line / curve of best fit (if appropriate) * I **described** most relevant trends in the data and made links to correct scientific reasoning * I **discussed** how the data supports or rejects the hypothesis validity of a hypothesis based on what happened in the experiment * I considered multiple problems of my results with regard to the hypothesis and method * I **discussed** if the method allowed for sufficient collection of data based on the outcome * I **described** clear improvements to the method that would benefit the scientific investigation. |
| **7-8** | 1. **correctly collect, organize, transform and present** data in numerical and/or visual forms 2. **accurately interpret** data and **explain** results **using correct scientific reasoning** 3. **evaluate** the validity of a hypothesis based on the outcome of a scientific investigation 4. **evaluate** the validity of the method based on the outcome of a scientific investigation 5. **explain** improvements or extensions to the method that would benefit the scientific investigation | * I **correctly collected** the DV’s, showed how the IDV’s were manipulated and **organized, transformed** data by including calculations and **presented** the data in a table and graph with clear headings, labels and units. * I drew a line / curve of best fit (if appropriate) * I **described** all relevant trends in the data and **explained** them scientifically * I clearly considered the **strengths and limitations** of my data and if the data supported or rejected the hypothesis based on what happened in the experiment * I considered multiple problems of my results with regard to the hypothesis and method * I clearly considered the **strengths and limitations** of the method to determine if the method allowed for sufficient collection of data based on the outcome. * I made clear and realistic improvements and e**xplained** why they would benefit the scientific investigation |

**Command Terms**

**Describe:** Give a detailed account or picture of a situation, event, pattern or process.

**Discuss:** Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or Conclusions should be presented clearly and supported by appropriate evidence.

**Evaluate:** Make an appraisal by weighing up the strengths and limitations.

**Explain:** Give a detailed account including reasons or causes.

**Interpret:** Use knowledge and understanding to recognize trends and draw conclusions from given information

**Evaluate:** To assess the implications and limitations.

**Outline:** Give a brief account.

**Present:** Offer for display, observation, examination or consideration

**State:** Give a specific name, value or other brief answer without explanation or calculation.

**Transforming data:** Processing raw data into a form suitable for visual representation. May involve combining and manipulating raw data to determine the value of a physical quantity and also taking the average of several measurements. It might be that the data collected are already in a form suitable for visual representation. If the raw data are represented in this way and a best-fit line graph is drawn the raw data have been processed**.**