**STUDENT NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ADVISORY: \_\_\_\_\_\_**

**1. Formulate questions or hypotheses that can be investigated scientifically** [**(ACSIS198)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS198)

- The variables worksheet is accurately completed and a hypothesis that can be tested / investigated is created. All variables of the experiment are identified and explained in the report.

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**2. Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods** [**(ACSIS199)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS199)

- Reliable data is collected and presented accurately in a table (including units). A risk assessment is thoroughly completed and included in the final report.

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**3. Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately** [**(ACSIS200)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS200)

- Method is included in the report and photographs / videos are provided to demonstrate appropriate use. Data is presented using digital technologies (graphs and tables).

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**4. Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies** [**(ACSIS203)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS203)

- Trends and inconsistencies in data (and possible suggestions as to WHY results occurred) are discussed in detail in the report.

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**5. Use knowledge of scientific concepts to draw conclusions that are consistent with evidence** [(ACSIS204)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS204)

- References linking concepts and the data collected are used to support findings (in discussion). The Harvard systems should be used and at least one source should be sited.

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**6. Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data** [(ACSIS205)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS205)

- Detailed improvements to the experiment are suggested in the discussion.

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**7. Critically analyse the validity of information in primary and secondary sources, and evaluate the approaches used to solve problems** [(ACSIS206)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS206)

- Possible sources of random and systematic errors are discussed in the discussion.

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**8. Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations** [**(ACSIS208)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSIS208)

- Scientific language is used accurately within the report and spelling and grammar is correct (minimal errors).

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**9. Energy conservation in a system can be explained by describing energy transfers and transformations** [**(ACSSU190)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSSU190)

- The energy transfers worksheet is accurately completed. The transfers of energy within the vehicle are included in detail in the discussion of the report. The energy test is successfully completed.

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**10. The motion of objects can be described and predicted using the laws of physics** [**(ACSSU229)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACSSU229)

- The motion worksheet is accurately completed. The energy test is successfully completed.

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**11. Use scatter plots to investigate and comment on relationships between two numerical variables** [**(ACMSP251)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACMSP251)

- The scatter plot (graph) worksheet is accurately completed. An accurate scatter plot is included in the practical report (results). The energy test is successfully completed.

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**12. Apply the four operations to simple algebraic fractions with numerical denominators** [**(ACMNA232)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACMNA232)

- The speed worksheet and energy test is completed successfully.

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**13. Substitute values into formulas to determine an unknown** [**(ACMNA234)**](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACMNA234)

- All speed calculations are included in the report (results). The speed worksheet and energy test is completed successfully.

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