Date Distributed: MONDAY 24TH FEBRUARY   **Task Weighting: 10%**

Outcomes

SC5-10PW Applies models, theories and laws to explain situations involving energy, force & motion

SC5-7WS Processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions

SC5-8WS Applies scientific understanding and critical thinking skills to suggest possible solutions to identified problems

SC5-9WS Presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations

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ASSESSMENT OUTLINE

1. WHAT AREAS OF LEARNING DOES THIS ASSESSMENT ADDRESS?

Students need to use identified strategies (outlined in the checklist below) to plan and conduct investigations and draw conclusion from data. Students will need to use their scientific skills studied in the Forces and Motion topic to answer a range of questions and demonstrate their skills in processing data and presenting data in an appropriate format

2. WHY IS THE COMPLETION OF THIS ASSESSMENT IMPORTANT?

The work of scientists involves planning and carrying out investigations, to then communicate findings and ideas. This task will allow students the opportunity to work scientifically – by completing a task that involves processing information from secondary sources and providing answers by applying given formulae to specific topic related questions. It will also include questions related to the design of valid scientific experiments. This task is based around the ability of a student to *apply* given knowledge rather than just recalling it.

3. WHAT STEPS DO I TAKE TO COMPLETE THIS TASK?

Task Outline

This is an in class task that will be conducted under examination conditions. You will be provided with a series of skills-based questions that will assess your ability to:

- Analyse, interpret and evaluate scientific data
- Detect trends and patterns from different types of scientific data
- Develop valid conclusions from different types of scientific data
- Provide scientific solutions to identified problems
- Use appropriate scientific terminology to respond to questions and
- Understand the process of a scientific experiment

In order to prepare for this task, below is a checklist that outlines all the skills that can be assessed. If you have any questions please see your Science teacher.

Checklist

Some suggested scientific skills you should know.

Skills	
Graph statistical data - Label the 'x' and 'y' axis correctly - Plot data sets correctly - Understand the relationship between the 'x' and 'y' axis	☐
Tabulate statistical data	☐
Analyse statistical data	☐
Understand the process of a scientific report - Title, Aim, Hypothesis, Risk Assessment, Variables, Method, Results, Discussion, Conclusion	☐
Understand and identify the difference(s) variables - Control variable: What your keeping constant throughout the experiment? - Dependent variable: What are you measuring? - Independent variable: What are you changing?	☐
Can explain the difference between accuracy, validity and reliability. - Accuracy: Was the equipment calibrated? Were measurements taken rather than estimates? Were correct scientific techniques used to avoid errors in the data collected? - Validity: were all the variables kept constant except for the one independent variable? Did the experiment test the aim? - Reliability: repeating the experiment to increase reliability	☐
Provide solutions to scientific problems	☐
Detect trends and patterns in a graph Trend: The general direction the graph is taking (increasing/decreasing/plateau) Pattern: A set of data that follows a recognised form (a repeated form)	☐
Develop valid conclusions from data	☐
Develop testable scientific questions	☐
Use scientific terminology to respond to questions	☐

Details for Submission

You will require a pen, pencil, ruler and calculator. Be sure you come equipped with everything necessary, as there may not be extra equipment available to issue to you during the examination if you forget.

4. HOW WILL MARKS BE AWARDED TO MEASURE MY LEARNING?

Marks will be indicated on the paper for each question. Worked solutions including feedback will be provided with the marked paper. Your responses will also be graded for literacy skills using the marking rubric provided below:

LITERACY MARKING CRITERIA	Descriptors				
	0	**0.25**	**0.5**	**0.75**	**1**
Vocabulary Uses technical vocabulary to explain concepts and/or range of precise and appropriate words for effect	- Symbols or drawings	- Only simple and nontechnical words are used.	- Some precise and technical words are used.	- Sustained use of precise and technical words.	-Sustained, consistent and fluent use of precise and technical words.
Punctuation Use of correct and appropriate punctuation for effect and to aid in reading of the text	- No or minimal evidence of correct sentence punctuation (less than 25%)	- Limited evidence of correct sentence punctuation (at least 25%)	- Some correct sentence level punctuation (at least 50%).	- Mostly correct sentence level punctuation (80%) and *at least two* examples of other punctuation.	-Writing contains accurate use of all applicable punctuation.
Sentences Intentionally constructs a variety of sentences to match purpose and audience	- No evidence of sentences - Drawings, symbols, a list of words OR text fragments	- At least one sentence is used correctly.	- Some correct formation of sentences. (at least 50%)	- Most sentences (80%) are correct but are largely unsophisticated.	- All sentences are correct including sophisticated sentences.
Paragraphs Paragraphs are used to effectively structure information and partition events and ideas	- No correct use of paragraphing - may be a block of text or random breaks	- Ideas are separated, provides at least ONE correct break between ideas - Paragraphs may contain some unrelated ideas	- At least ONE paragraph is well structured and develops an idea	- All paragraphs are focused on one idea or a set of like ideas but may not be linked effectively.	- Paragraphing creates flow, connectivity and supports argument.
Text Structure Uses features of the appropriate text type	- No evidence of structural components of the appropriate text type	- Minimal evidence of the structural components of the appropriate text type.	- Some evidence of the structural components of the appropriate text type.	- Substantial evidence of the structural components of the appropriate text type.	- Coherent and controlled use of the appropriate structural components of the text type.