

JUNIOR ASSESSMENT TASK – STAGE 5 (Task 1)

Faculty – Science	Stage 5 – Year 10	Topic: Practical Investigation Project
<p>Task Description:</p> <p>This is a practical task that require you to conduct a practical investigation either in class on the topic given to you by your teacher or one of your choosing.</p> <p>Your investigation will be based on one of the four major disciplines of science in the class you are currently in:</p> <ul style="list-style-type: none"> - Physics - Chemistry - Biology - Earth and Space <p>The investigation will be conducted with the assistance of your teacher in class time. This will assist you in learning how to conduct a correct scientific investigation.</p> <p>Presentation of project: (What do you need to hand in?) All students must submit the following:</p> <ul style="list-style-type: none"> - A portfolio of their project. The portfolio can be written into your science book or other material but it must be handed in to you teacher as a hard copy, photocopy or the original. - The investigation must also be handed in using the format discussed in class. Students can either use the format given or create their own using the agreed standard of a scientific investigation discussed in class. 		
<p>Date Given: Week 3 Term 1 10th February</p>		<p>Date of Completion: Week 8 Term 1 Thursday 19th March</p>
<p>Outcomes to be Assessed:</p> <p>WS5.2 Students plan first-hand investigations by:</p> <p>a. planning and selecting appropriate investigation methods, including fieldwork and laboratory experimentation, to collect reliable data</p> <p>d. specifying the dependent and independent variables for controlled experiments</p> <p>WS5.3 Students choose equipment or resources for an investigation by:</p> <p>a. identifying appropriate equipment and materials</p> <p>b. identifying the appropriate units to be used in collecting data</p> <p>WS6 Students conduct investigations by:</p> <p>a. individually and collaboratively using appropriate investigation methods, including fieldwork and laboratory experimentation, to collect reliable data</p> <p>b. safely constructing, assembling and manipulating identified equipment</p> <p>f. evaluating the effectiveness of the planned procedure, considering risk factors and ethical issues, and suggesting improvements as appropriate</p> <p>WS7.2 Students analyse data and information by:</p> <p>a. analysing patterns and trends, including identifying inconsistencies in data and information</p> <p>b. describing relationships between variables</p> <p>c. assessing the validity and reliability of first-hand data</p> <p>d. using knowledge of scientific concepts to draw conclusions that are consistent with evidence</p>		

Task Guidelines:**You will be expected to:**

- **Conduct a proper scientific investigation in class.**
- **Use the information and data collected in class to produce a high quality scientific report**
- **Hand in the scientific report and the portfolio of the work you have completed**

Penalties:

Failure to complete the task with a sustained and diligent effort or because you are absent may lead to:

- **The issuing of a ROSA warning letter explaining that you have not met the course learning outcomes according to the requirements of the NSW Board of Studies**

Please note: that plagiarism, the using of the work of others without acknowledgement, or copying another students work, will incur serious penalties and may result in zero award. This may lead to either having to complete the task again or receiving a ROSA warning letter for non completion of mandatory school activities.

Marking Criteria

Student name _____

		Extensive understanding of	thorough knowledge of	Sound knowledge of	Basic knowledge of	Elementary knowledge of	
		A	B	C	D	E	
Section 1 Planning	Portfolio is comprehensive, detailing stages in project development	folio is present, detailed account of activity, show comprehensive list of stages of development, the stages are cohesive, may include a mind map, a log, a timeline, refined research question	folio is present, thorough account of activity, most stage of development are shown, stages are cohesive, may include in some detail a mind map, a log, a timeline, refined research question	folio is present, brief account of activity, show most stage of development are shown, stages are missing but still able to be understood, may include some details about a timeline, some research, a reference list	folio is present, thorough account of activity, stage of development are shown briefly or summarised or don't make sense, have made a basic summary of their investigation	folio is present, some account of activity, some stages of development are shown, doesn't flow or is hard to understand	
		5	4	3	2	1	0
Section 2 Evidence	Possible aim hypothesis, solutions and a method- the project aim is articulated	the aim of the task is comprehensively described, errors or problems are identified and issues are comprehensively over come, work samples or data is included in the rough	the aim of the task is thoroughly described, errors or problems are identified and most issues are over come, data is included in the rough	the aim of the task is described, errors or problems are identified and some issues are over come, data is included in the rough	the aim of the task is described, errors or problems are identified, some data is included	the aim of the task is poorly described and/or some errors or problems are identified , some data is included	
		5	4	3	2	1	
Section 3 Reflection	Reflection of their investigation is shown to improve the task	show an exceptional understanding of scientific idea and have used evidence to improve their investigation, evidence or examples of errors are highlighted and improved	show an thorough understanding of scientific idea and have used some evidence to improve their investigation, evidence or examples of errors are highlighted	show a sound understanding of scientific idea and have used some evidence to improve their investigation is highlighted but not discussed	show a limited understanding of scientific idea and how to improve their investigation, errors are identified	show a portion of understanding of scientific idea and some undersatnding of errors in their methology	
		5	4	3	2	1	0

Investigation Marks

	Extensive A	thorough B	Sound C	Basic D	Elementary E	
Title				a correct title for an investigation report	a title that somewhat reflects the investigation report	
				2	1	0
The abstract	the abstract extensively shows and understanding of the key questions, a summary of the method used, key results and a conclusion	the abstract is thorough and has all the required elements but depth is lacking in detail	the abstract is sound and has the basis of a general description of the investigation	the abstract is a basic statement of the investigation or is missing parts and is in general terms	the abstract is simplistic, generally describe the investigation, missing many elements	
	6	5	4	2	1	0
Literature review.	the research is extensive with many (5 or more) pieces of research summarised. Some scientific journals/papers mentioned	the research is extensive and the information is brief, scientific journal/paper mentioned	the research is completed but the number is small or the information does not relate to the investigation	the research is attempted and some information is provided	research is attempted but little information relevant to the investigation is included	
	6	5	3	2	1	0
scientific research question	the question specifically identifies the investigation and the measurable variable		they have written a scientific question using scientific language but it is loosely related to the task		the question is in general terms but is not specific to the investigation	
	3		2		1	0
scientific hypothesis	the hypothesis clearly relates the dependent and independent variables in a causal relationship		the hypothesis has the variables but the relationship between them is difficult to determine		there is an attempt to relate 2 factors to each other but is not clear.	
	3		2		1	0
methodology	passive voice, simple past tense and contain enough specific and detailed information so that it can be repeated by another scientist to obtain the same results. Variable measures included	some detail is missing to enable the investigation to be conducted by an independent person. Variable measures included	information is missing and the detail is not included. Variables are mentioned but not shown how to be measured	the method is basic in nature and science language, tense or voice is not used and parts do not make sense	the method is attempted and some can be followed. Scientific language tense or voice is not used	
	6	5	4	3	2	
Results	data collected in class is collated, calculated and the trends identified, graphs, tables or visual devices are complete and information to explain the data is included	data collected in class is mostly collated, calculated, trend are somewhat identified and information relating to explain the data is minimal	data is collected and presented in an effective manner. The relationships between data is somewhat identified	data is collected and collated in a basic manner, graphs and tables are included but not all correct	an attempt has been made to collate and present data sourced from class	
	10	8	6	4	2	

Discussion	an extensive evaluation of the data, limitations of the experiment, an explanation of the results and future directions of the investigation are identified, experiment is shown to be reliable, and accurate	a thorough evaluation, some bit missing is made, some reference to why the experiment went wrong or was good and future directions of the investigation is made, experiment shown to be accurate and reliable	the results are discussed and the errors in the method are identified, little information on the explanation of the results and future direction of the practical is absent. Some language used to show accuracy or reliability	limited discussion of the results and trends and some errors are identified	the results have been discussed with a trend identified	
	10	8	6	4	2	
conclusion	the conclusion shows a clear understanding of the relevance of the investigation completed	the conclusion shows a thorough understanding of the investigation but is missing some information on the relevance of the science	the conclusion is in general terms and the information is a restatement of the discussion	the conclusion is in general terms, it relates to the data and is clear	the conclusion is in general terms and related to the data, not clear	
	5	4	3	2	1	
reference list	an extensive reference list is included and is correct		a reference list is included but the list is not correctly written		an attempt at a reference list has been made	
	3		2		1	
						0
	54	46	34	25	13	0