Gymea Technology High School
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Year 7 Science

Task 3: Student Research Project

Due Date: Week 10, Term 3, Monday 22nd September 2025

Task Distributed: Week 5

Unit: Plants

Task Type: Scientific Investigation

Task Weighting: 20%

Outcomes: SC4-2VA, SC4-4WS, SC4-5WS, SC4-6WS, SC4-7WS, SC4-8WS, SC4-9WS.

Task Description

Whenever someone asks a question like; 'How can this be done?' 'Why does this happen?', "How does this work?", "What would happen if…?" Science is happening. Science also involves finding the answers to these questions – or at least attempting to find the answers. Science therefore involves asking questions, collecting information, designing and doing experiments, making observations, collecting results, analysing data, and making conclusions.

You will be investigating a single ***variable*** that affects plant growth. Your independent variable (variable that you are changing) will need to be **ONE** of the below:

1. Amount of water used to hydrate the plant.
2. Type of fertiliser used to grow the plant.

The assessment will be conducted in two parts. The first part of the assessment will be completed over several Science lessons while the second part will be completed at home. The Science Faculty will provide you with:

- the seedlings which you will use as your experimental plants
- fertiliser, should you require it
- an allocated section of the garden bed to grow your plants AND
- measuring equipment - ruler, measuring tape, measuring cylinders

You will need to work with your group of 3-4 students to collaboratively develop **the aim, hypothesis and a results table** for your assessment. Marks will be allocated on how you work as a team and how you collect your data.

The table below shows you what both parts of the assignment involve.

Section	Description	Due Date
PART 1 **Group Work and Experimentation (IN CLASS)**	In this section, you will be asked to develop a scientific question, grow your group's plants and collect results. 1. Find 3-4 other students in your class to complete this section with. 2. Collaboratively explore a scientific question you and your group would like to investigate. 3. In your group, select ONE of the independent variables you will test. 4. Complete the 'PROPOSAL' attached to the back of this assessment notification and submit it to your Science Teacher. 5. Brainstorm how you will gather results.	This will be conducted in class, and you will be advised by your classroom teacher when you will be working on your assessment. **PROPOSAL DUE by the end of Week 5**

	6. Conduct the experiment during your allocated Science lessons (plant your seedlings, observe changes and record results). This is group work, and you will be awarded marks on your participation. 7. You must also maintain a logbook containing information on your experiment, data and any planning.	
PART 2 **Final Scientific Report - INDIVIDUAL (AT HOME)**	In this section, you are asked to submit an individual scientific report that will include your results from PART 1. This is **INDIVIDUAL.** 1. Using the results, you have gathered in PART 1 with your group, you are to write a scientific report. 2. You are to include the following: - **Aim** (What are you investigating? This is the question you discussed and developed with your group in PART 1.) - **Hypothesis** (educated guess of what you think would have happened in your experiment) - **Risk Assessment** (Table showing the risks involved in your experiment) - **Equipment** (List of equipment and materials used with quantities) **- Variables** (Table showing the independent, dependent and controlled variables) - **Method** (numbered steps of how your group conducted the experiment) - **Results** (graph showing results, results table and any images you have of the group's plants) - **Discussion** (have a look at the scaffold that has been provided to you about what to include in your discussion); research the experiment to compare other methods and findings. - **Conclusion** - Analysis of your results and if your results support your hypothesis and aim of the experiment. Once you have written up your scientific report, you will need to submit it on google classroom.	**Monday- 22nd September 2025 (week 10)**
PART 3 **Logbook To be submitted with PART 2**	Every science fair project must include a logbook, also sometimes called a research notebook, which is a complete, permanent record of how you did your experiment/research project; it shows what you did and thought every step along the way. You will need to complete a logbook as part of this assessment also. You may use the below table to set out your logbook. A logbook is like a journal, and it records what you did on that day.	**Monday- 22nd September 2025 (week 10)**

Example:

	Observation			
Day/Date	Plant 1 height and condition	Plant 2 height and condition	Plant 3 height and condition	Images
Monday 21/01	54 mm Healthy, lots of leaves	34 mm Dry, droopy	Etc.	

NESA Glossary of Key Words

Understand the verb associated with the task. The verb will provide an understanding of the detail needed to successfully answer the question.

- Explain: Relate cause and effect; make the relationships between things evident; provide why and/or how
- Investigate: Plan, inquire into and draw conclusions about

Check the NESA Glossary of Key Words for further guidance https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/hsc/hsc-student-guide/glossary-keywords

Details of Submission

You must submit your **Final Report** by **Week 10 Monday the 22nd of September 2025 by 3pm.** You are to submit your scientific report electronically (submission folder on Google Classroom).

Teacher Feedback and Student Self-Reflection

- The task will typically be returned to students within 14 days of the due date.
- At this time feedback including information on how to improve will be provided through mechanisms such as marking criteria, and/or written comments.
- Students can clarify or seek further feedback by speaking with their teacher or the assessment marker.
- You will also receive feedback on your literacy performance based on the criteria in the school's literacy marking rubric. The marks achieved for literacy will account for between 10% – 20% of the maximum task value.

How does this link to my learning?

This investigation will allow you the opportunity to work scientifically – by completing a task that involves preparation, planning, investigating, collecting, and analysing your results as well as some research on your topic.

Assessment Procedures

All students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available off the school website under the Learning Tab for each year group.

Outcome	How Assessed	Experiencing Difficulty	Developing	Satisfactory	Outstanding	Mark
	PLANNING					
SC4-4WS SC4-5WS SC4-6WS clarifies the purpose of an investigation and, with guidance, produces a plan to investigate a problem.	Planning of experiment with group	Experienced difficulty in developing the plan, much help needed with group members	Able to develop the plan with assistance.	Develops a plan with minimal assistance.	Develops a plan that identifies all steps needed to complete the task independently	
		1	2	3	4	
		Proposal submitted on time				
	PROPOSAL	1				
	LOGBOOK					
	Submits the logbook and raw data	No logbook with raw data handed in with assignment report	Logbook submitted with report			
		0	1			
SC4-9WS Presents Science ideas, findings and information to a given audience using appropriate scientific language, text types and representations	**SCIENTIFIC REPORT**					
	Aim	Writes an appropriate aim that links the dependent and independent variable				
		1				
	Hypothesis	Makes an educated guess of what may happen in the experiment (has to link to the aim) 1				
		1				
	Risk Assessment	Lists some risks without management strategies/ Lists a risk with its prevention strategy	Lists risks with appropriate injuries and prevention strategies	Tabulates (as per scaffold) risks with appropriate injuries and prevention strategies		
		1	2	3		
	Equipment	Lists some equipment that was used during the investigation	Lists ALL equipment that was used during the investigation	Lists ALL equipment that was used during the investigation with correct quantities		
		1	2	3		
	Method	procedure hard to follow, instructions incomplete and not in order	procedure not clear, some instructions or details missing	clear procedure but some instructions or details missing	a clear, concise procedure	
		1	2	3	4	
	Control used	Does not have a 'control' group as part of their investigation	Identifies an inappropriate control	Uses a suitable control		

		0	1	2		
	Variables (independent, dependent and controlled)	Has not included variables within their report	Some variables identified and controlled	Most variables identified and controlled	All variables identified and controlled	
		0	1	2	3	
SC4-2VA SC4-8WS draws conclusions based on information available.	Discussion - Weaknesses	No weaknesses have been discussed within their discussion	Identifies one weakness/difficulty	Identifies more than one weakness/difficulty	Describes the weakness/difficulty	
		0	1	2	3	
	Discussion - Improvements	No improvements have been discussed within their discussion	Identifies one improvement	Description of one improvement		
		0	1	2		
	Discussion - Reliability, Validity and Accuracy	No discussion of how their experiment was reliable, validity and accuracy	Identifies and describes one of the following: reliability, validity and accuracy OR describes all three vaguely	Outlines and explains two out of the three key terms and relates these terms to their experiment	Outlines and explains ALL THREE key terms and relates these terms to their experiment	
		0	1	2	3	
	Conclusion	Has not included a conclusion within their report	Has drawn invalid conclusions	Analysis leading to acceptable conclusions	Analysis of results has led to valid conclusions	
		0	1	2	3	
RESULTS						
SC4-7WS uses given criteria together first-hand data.	Recording rough copy or raw data in logbook	Inaccurate measurements and observations	Some errors in measurements and more careful observations needed	Most measurements and observations performed well	All measurements and observations performed very well	
		1	2	3	4	
	Results displayed using tables	No table used	inappropriate or unclear table	a suitable result table with missing measurements or observations	a suitable result table.	
		0	1	2	3	
	Results displayed using a graph	No graph	inappropriate or unclear graph	A suitable result graph with missing data points or labels	A suitable graph	
		0	1	2	3	
	Group Work	Did not work in a group or did not participate and collaborate with others	Worked in a group but needed assistance in collaboration and how to contribute positively in the group	Demonstrated great collaborative teamwork and contributed positively to the group		
		0	1	2		
BIBLIOGRAPHY		No bibliography provided	Bibliography provided with a few (1-2) sources identified	Bibliography written in HARVARD style and with multiple different text types (book, internet, scientific report) resources used.		
		0	1	2		
TOTAL						

	/48

Literacy Rubric

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.

***Marks will be deducted for late assignments – 10% per day**

Total: / 53

PROPOSAL – PLANNING MY INVESTIGATION

Your plan will need to have:

- Your topic – a few sentences about what you are investigating.
- The aim of your investigation – what you are trying to find out.
- Your investigation plan – this is the experiment you wish to carry out, how it will be done and how you intend to use the results.

Complete your proposal (this is the plan for your experiment).

Show your proposal to your teacher for approval by the end of Week 5 (in class).

Name: _____

Group Members: _____

What is the due date for your completed assignment? ……..……

What are you investigating? What question are you asking?

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What variable are you going to change? (Independent)

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What variable are you going observe/measure? (Dependent)

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You will need to keep all other factors the same.

How are you going to test this question in your experiment (method)?

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What is your experimental control? (A standard to compare the results against)

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What equipment will you need to perform your experiment?

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What do you think will happen? (your hypothesis)

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Checked (Teacher Signature) ……..…… Date ……..……