Gorokan High School

Assessment Task Notification

RESPECT | RESPONSIBILITY | PERSONAL BEST

Faculty: Science	**Course: Science – Stage 5**	**Time allowed: 3 weeks**
Teacher: Mesina		**Email: frank.mesina@det.nsw.edu.au**
Task number: 3	**Title: Research Task**	
Year: 10	**Due date: 8 September 2023**	**Weighting: 25%**

Syllabus outcomes assessed:

SC5-3VA	demonstrates confidence in making reasoned, evidence-based decisions about the current and future use and influence of science and technology, including ethical consideration
SC5-7WS	processes, analyses and evaluates data from first-hand investigations and secondary sources to develop evidence-based arguments and conclusions
SC5-9WS	presents science ideas and evidence for a particular purpose and to a specific audience, using appropriate scientific language, conventions and representations

21st Century and employment related skills:

☒	Communication	☐	Use of technology
☒	Critical Thinking	☒	Self-reflection and refinement
☒	Creativity	☐	Problem Solving
☐	Collaboration	☐	Initiative and Enterprise
☒	Planning and Organising	☐	Cross-Cultural Understanding

Task description:

There are many issues in science that have, over the centuries, generated much debate.
Your task will be to choose ONE of these debates, reflect on the two sides of the debate (there may be more than two sides) and then **arrive at a conclusion based on evidence**. This evidence MUST be scientific in its origin (not from Wikipedia for example).

Assessment Criteria:
You will be assessed on your ability to:

Think critically, process data and communicate understanding

Method of task submission:

You are to write a persuasive text to present your point of view on the work that has been researched (do you agree/not agree with your chosen topic?). You need to follow TXXXC format for your persuasive text.

Marking guidelines:

Grade	Descriptor	Mark
A	See attached Marking Rubric	
B		
C		
D		
E		
N (Stages 5 and 6)		

Research Task:
Year 10 Assessment Task - Great Debates in Science

There are many issues in Science that have, over the centuries, generated much debate. Your task will be to choose ONE of these debates, reflect on the two sides of the debate (there may be more than two sides) and then **arrive at a conclusion based on evidence.** This evidence MUST be scientific in its origin (not from Wikipedia for example).
You will need to do a significant amount of research for this assessment task. You will be required to provide a bibliography of all the material that you have collected and used. This may include journal articles, interviews, specialised books, YouTube videos.
In order to come to a conclusion, a true scientist asks questions, conducts research about what is already known and provides directions for future research.
You will NOT be assessed whether your conclusion is right or not. You WILL be assessed on HOW YOU PRESENT your argument.

-is it logical?
-is it backed up with evidence?
-is the evidence conclusive?
-are there other factors that need to be considered? If so, what?
-what are some of the difficulties that one encounters when trying to come to a conclusion?
-what does the scientific community say about the issue? Who are the scientists?

The following debates are currently taking place in the various spheres of science:

Earth Studies: the climate change debate: is it really a problem?

: is the hole in the ozone layer getting smaller?

Biology: embryonic stem cell research: is it the answer to so many diseases?

: evolution – is this theory set in concrete or is it likely to evolve as more evidence comes to light?

: should IVF technology be used to choose the offspring (for gender or to save another child?)

Food technology/Bio: genetically modified food - can it be trusted?

Physics: the big bang: how did it all begin?

Chemistry/Bio: animal testing - does science have a right to run tests on animals?

Medical Sciences: immunisations - do we or don't we immunise?

: vaccination – should it be compulsory?

Astronomy: what benefits are there really in studying space?

: should space exploration be a priority for our country?

AI: Will it replace humans?

You need to choose **ONE** of these debates or can have one current debate of your own choosing (*MUST* be approved by your teacher *BEFORE* you begin your research).

This assessment requires:

1. A research component: you need to provide evidence that you have carried out research on your topic.
You will need to collate your research material (you could keep it in a display folder or a scrap book).
You will need to document your research and analyse it.
For each piece of evidence:

- Was the article useful? Why or why not?
- Was the information current? (When was the evidence written?)
- Was it biased? Why or why not?
- What should have the authors considered?
- What questions would you ask of the author/s? (What do you still need to/want to know?)

You must provide the details of the origin of the sources that you are using.
The research must cover all points of view about your debate (for and against) so that it will allow you to make an informed decision about your opinion on your chosen topic.

2. A written component: you need to consider the research that you have done, then write a persuasive text to present your point of view (do you agree/not agree with your chosen topic?).
You need to follow TXXXL format for your persuasive text.

This task requires submission of:

- A folder containing research made about your topic, with each article evaluated using the questions above.
- A persuasive text outlining your own personal opinion, that you have formed by researching the chosen topic. It needs to follow the TXXXL format.

Journals tend to be a good source of information and they are written by scientists. You can find articles at the following websites:

https://www.sciencejournalforkids.org/

https://scholar.google.com.au/

https://www.elsevier.com/books-and-journals/elsevier

If you are having any difficulty with finding resources or understanding what is required, please make sure to ask your teacher.

DUE DATE:...8 September, 2023 .....

This task is worth 25% of your total mark for Year 10 assessments.

Year 10 Research Task Marking Rubric — Total marks: 65 marks

Table description: shaded rows are band descriptors from NESA and non-shaded rows are the task descriptors

Outcomes and content	Grade A	Grade B	Grade C	Grade D	Grade E
Critical thinking skills (30 marks) 3VA – research component	Uses critical thinking skills to evaluate trends, patterns and relationships to draw evidence-based scientific conclusions	Uses critical thinking skills to evaluate trends, patterns and relationships to draw scientific conclusions	Explains trends, patterns and relationships to draw scientific conclusions	Describes trends, patterns and draws some conclusions	Recounts conclusions
	Extensive evaluation of: - many sides of the argument based around the chosen debate topic - each piece of evidence collected to research chosen debate topic - provides at least 2 possible directions for future research on the chosen debate topic	Thorough evaluation of: - 2 sides of the argument based around the chosen debate topic - each piece of evidence collected to research chosen debate topic - suggests at least 1 possible direction for future research on the chosen debate topic	Sound evaluation of: - 1 side of the argument based around the chosen debate topic - each piece of evidence collected to research chosen debate topic - suggests 1 possible direction for future research on the chosen debate topic	Limited evaluation of: - an attempt to discuss the chosen debate topic - each piece of evidence collected to research chosen debate topic - suggests 1 possible direction for future research on the chosen debate topic, with teacher assistance	Basic evaluation of: - an attempt to discuss the chosen debate topic, with teacher assistance - each piece of evidence collected to research chosen debate topic - no suggestions made for future research on the chosen debate topic
Processing data (15 marks) 7WS	effectively gathers, selects, organises and processes first-hand and secondary sourced data and information to evaluate issues and inform creative solutions using appropriate digital technologies	systematically gathers, selects, organises and processes first-hand and secondary sourced data and information to explain issues and inform problem-solving using appropriate digital technologies	gathers and selects first-hand and secondary sourced data and information to identify issues and participate in problem-solving using appropriate digital technologies	uses first-hand and secondary sourced data and information, and appropriate digital technologies, to assist in the problem-solving process	uses information provided and, with assistance, participates in problem-solving activities

	Demonstrates an extensive understanding and analysis of: - relevant secondary sources (at least 5) from a variety of different sources - makes a number of valid judgement statements based upon the analysis of collected evidence - presents a relevant evidence-based conclusion about the chosen debate topic	Demonstrates a thorough understanding and analysis of: - relevant secondary sources (at least 4) from a variety of different sources - makes an attempt at valid judgement statements based upon the analysis of collected evidence - presents some relevant conclusions about the chosen debate topic	Demonstrates sound understanding and analysis of: - relevant secondary sources (at least 3) from a variety of different sources - makes a judgement statements based upon the analysis of collected evidence - presents a conclusion about the chosen debate topic	Demonstrates a basic understanding and analysis of: - relevant secondary sources (at least 2) from a variety of different sources - makes an attempt at analysis of the collected evidence - attempts to present a conclusion about the chosen debate topic	Demonstrates a limited understanding and analysis of: - uses some secondary sources from a variety of different sources, provided by the teacher - makes an attempt at analysis of collected evidence, with teacher assistance - presents a conclusion about the chosen debate topic, with teacher assistance
Communication (20 marks) 9WS	communicates comprehensive understanding of scientific ideas, and related evidence for a particular purpose and audience using scientific units, language conventions and text types	communicates well-developed understanding of scientific ideas to an audience using scientific units and language conventions	communicates sound understanding of scientific ideas to an audience	communicates basic scientific understanding to an audience	with guidance, communicates elementary scientific information to an audience
Overall presentation	- presents argument with a clear structure (introduction, body of evidence with analysis, conclusion) TXXXL format followed - logical and succinct argument made,	- presents argument with a clear structure (introduction, body of evidence with an attempt at analysis, conclusion) TXXXL format followed - logical argument made, definite	- presents argument (introduction, some evidence, some analysis) TXXXL format followed - argument outlined, but not clear or logical, definite	- presents argument (introduction, some evidence), attempt at TXXXL format - evidence presented, but only outlines issue with no	- presents some information, TXXXL format not followed - evidence presented with teacher assistance, no personal point of view included

	backed up with valid evidence, definite conclusion made about personal point of view - extensive use of scientific language throughout report - bibliography included (5 or more sources)	conclusion about personal point of view - thorough use of scientific language throughout report - bibliography included (4 sources)	conclusion made about personal point of view - sound use of scientific language throughout report - bibliography included (3 sources)	personal point of view included - basic use of scientific language throughout report - bibliography included (1-2 sources)	- limited use of scientific language throughout report - no bibliography included

Critical thinking skills = /30 Processing data = /15 Communication = /20 Total = /65

Teacher comment:

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Year 10 Assessment Schedule 2023

Science

Task number	Task 1	Task 2	Task 3	Task 4	
Name of Task	Student Research Project	Half Yearly Examination	Research Task	Yearly Examination	
Task Due	Term 1, Week 9	Term 2, Week 8	Term 3, Week 8	Term 4, Examination Period	
Outcomes assessed	SC5- 5WS, 7WS, 9WS	SC5-5WS, 6WS, 11PW, 17CW	SC5-7WS, 9WS, 3VA	SC5-4WS, 7WS, 8WS, 10-11PW, 14-15LW, 16-17CW.	
Components					**Task Weighting %**
Knowledge and Understanding	10	10	10	20	**50**
Skills – Working Scientifically	15	15	15	5	**50**
Total %	**25**	**25**	**25**	**25**	**100**