



## Science Extension- HSC COURSE

### **Assessment Task: Research Proposal & Progress Report**

**Date to be completed:** Week 6 Term 1 2023 (Day to be advised)

**Worth: 20%** (5% Communicating Scientifically 10% Gathering, recording, analysing and evaluating data, 5% application of scientific research)

### **Outcomes to be assessed from the Syllabus:**

HSC outcomes	A student:
	<ul style="list-style-type: none"><li>• SE-1 refines and applies the Working Scientifically processes in relation to scientific research</li><li>• SE-3 interrogates relevant and valid peer-reviewed scientific research to develop a scientific research question, hypothesis, proposal and plan</li><li>• SE-5 analyses and applies the processes used in reliable and valid scientific research to solve complex scientific problems and inform further research</li><li>• SE-6 analyses and reports on a contemporary issue or an application of science informed by primary or secondary-sourced data, or both, in relation to relevant publicly available data sets</li><li>• SE-7 communicates analysis of an argument or conclusion incorporating appropriate scientific language and referencing techniques in a scientific report</li></ul>

### **Content**

#### **(Section 1 of the Scientific Research Portfolio pg 18-19 of NESASyllabus)**

- an action plan with milestones and a timeframe for each stage of the Scientific Research Project
- summaries and annotated extracts of peer-reviewed scientific research and statements of applicability to the Scientific Research Project
- a developing reference list using correct formatting from the chosen format
- a concept map or alternative strategy for generating ideas for the scientific research, including references to literature and justification for their selection
- a refined and justified scientific research question
- a refined and justified scientific hypothesis.

# Task 1: Presentation of Research Proposal

DUE: Term 1 Week 6 2022

## Outcomes

You will be assessed on:

### Outcomes

- **SE-1** refines and applies the Working Scientifically processes in relation to scientific research
- **SE-3** interrogates relevant and valid peer-reviewed scientific research to develop a scientific research question, hypothesis, proposal and plan
- **SE-5** analyses and applies the processes used in reliable and valid scientific research to solve complex scientific problems and inform further research
- **SE-6** analyses and reports on a contemporary issue or an application of science informed by primary or secondary-sourced data, or both, in relation to relevant publicly available data sets
- **SE-7** communicates analysis of an argument or conclusion incorporating appropriate scientific language and referencing techniques in a scientific report

### Content (Section 1 of the Scientific Research Portfolio pg 18-19 of NESA Syllabus)

- an action plan with milestones and a timeframe for each stage of the Scientific Research Project
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# Task

This task requires students to present their research proposal for 5-15 minutes in a similar manner to a scientific conference and submit a written version of their proposal.

The presentation and written submission should include:

- an introduction to your research proposal
- research aims and questions
- review of literature
- proposed methodology and analysis
- timeline
- a question and answer session.

## Submission:

- Students will be required to submit a research question to your teacher by week 6.
- Students who have their research question not approved in the first round will have to resubmit their question week 9 in the second round.
- Students will be required to present your proposal to the class. You will be given written feedback by your peers.
- Students will be required to submit a written version of their proposal. This is not marked.

## Helpful Websites:

1. <https://www.monash.edu/rlg/graduate-research-writing/write-the-thesis/writing-a-research-proposal>
2. <https://www.westernsydney.edu.au/future/study/how-to-apply/higher-degree-research-candidates/how-to-write-a-research-proposal.html>
3. <https://www.uts.edu.au/research-and-teaching/research-degrees/applying-uts/prepare-your-documents/writing-research>
4. <https://sydney.edu.au/campus-life/student-news/2017/05/30/how-to-write-a-research-proposal-for-a-strong-phd-application.html>
5. <https://international.curtin.edu.au/research-students/writing-research-proposal/>

# Submission of Research Question

Due Week 2 Term 1 2019

Name: \_\_\_\_\_ Roll Call: \_\_\_\_\_

Round Research Question:

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Approved

Rejected

Comments:

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# Marking guidelines

Criteria	E(1)	D(2)	C(3)	B(4)	A(5)
<i>Introduction</i>	<ul style="list-style-type: none"> <li>Introduces the problem or area of interest.</li> </ul>	<ul style="list-style-type: none"> <li>Introduces the problem or area of interest.</li> <li>Describes the relevance of the topic to the researcher and field of knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>Introduces the problem or area of interest.</li> <li>Describes the relevance of the topic to the researcher and field of knowledge.</li> <li>Convinces the reader of the importance of the research.</li> </ul>	<ul style="list-style-type: none"> <li>Introduces the problem or area of interest.</li> <li>Explains the relevance of the topic to the researcher and field of knowledge.</li> <li>Convinces the reader of the importance of the research. Identifies the theoretical and practical significance of the research.</li> </ul>	<ul style="list-style-type: none"> <li>Introduces the problem or area of interest.</li> <li>Explains the relevance of the topic to the researcher and field of knowledge.</li> <li>Convinces the reader of the importance of the research. Identifies the theoretical and practical significance of the research.</li> <li>Speculates on implications of anticipated findings.</li> </ul>
<i>Research aims and questions</i>	<ul style="list-style-type: none"> <li>Inadequate, with lack of clarity and concision.</li> </ul>	<ul style="list-style-type: none"> <li>Rudimentary formulation of research aim; attempt at formulation of question/s; may lack clarity and/or concision.</li> </ul>	<ul style="list-style-type: none"> <li>Generally appropriate, clear and concise framing of the research aim and questions. Hypothesis is stated.</li> </ul>	<ul style="list-style-type: none"> <li>Highly appropriate, clear and concise framing of the research aim and questions. Hypothesis is stated and can be tested.</li> </ul>	<ul style="list-style-type: none"> <li>Exceptionally appropriate, clear and concise framing of the research aim and questions. Hypothesis is clearly stated and can be adequately tested.</li> </ul>
<i>Review of Literature</i>	<ul style="list-style-type: none"> <li>The literature review lacks comprehensive coverage of relevant material</li> <li>The purpose of the study is not clearly described</li> <li>There is no connection between the material reviewed and the purpose of the study</li> </ul>	<ul style="list-style-type: none"> <li>The literature review is relatively comprehensive and describes some relevant material</li> <li>The purpose of the study is described, but not as clearly as it might be</li> <li>There is some attempt to connect the material reviewed with the purpose of the study</li> <li>Summarises concisely 3-5 literature items (what, when, where, how).</li> </ul>	<ul style="list-style-type: none"> <li>The literature review is relatively comprehensive and describes some relevant material</li> <li>The purpose of the study is described.</li> <li>There is a good attempt to connect the material reviewed with the purpose of the study</li> <li>Summarises concisely 5-10 literature items (what, when, where, how).</li> </ul>	<ul style="list-style-type: none"> <li>The literature review is comprehensive and describes most relevant material</li> <li>The purpose of the study is adequately described</li> <li>There is a good attempt to connect the material reviewed with the purpose of the study</li> <li>Summarises concisely 5-10 literature items (what, when, where, how).</li> <li>Identifies the gaps, problems and issues unresolved by the literature.</li> </ul>	<ul style="list-style-type: none"> <li>The literature review is very comprehensive and describes relevant material</li> <li>The purpose of the study is clearly described</li> <li>There is an excellent connection between the material reviewed and the purpose of the study</li> <li>Summarises concisely 5-10 literature items (what, when, where, how).</li> <li>Identifies the gaps, problems and issues unresolved by the literature.</li> </ul>

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Criteria	E(1)	D(2)	C(3)	B(4)	A(5)
<p><i>Methodology and Analysis</i></p>	<ul style="list-style-type: none"> <li>Selected methodology does not satisfactorily address the identified research problem</li> <li>Inadequate and/or illogical proposal of analysis with little or no demonstration of critical thinking and/or engagement with sources</li> </ul>	<ul style="list-style-type: none"> <li>Methodology goes some way towards addressing the identified research problem</li> <li>Rudimentary proposal of analysis with some deficiencies of logic; passable demonstration of critical thinking; some engagement with sources</li> </ul>	<ul style="list-style-type: none"> <li>Sound methodology for addressing the identified research problem</li> <li>Justifies the methodology in relation to the research topic or problem.</li> <li>Proposal of analysis demonstrated sound logic and some degree of critical thinking and engagement with sources</li> </ul>	<ul style="list-style-type: none"> <li>Very good methodology for addressing the identified research problem</li> <li>Justifies the methodology in relation to the research topic or problem.</li> <li>Highly effective proposal of analysis demonstrating a strong grasp of logical, critical thinking and engagement with sources</li> </ul>	<ul style="list-style-type: none"> <li>Excellent methodology for addressing the identified research problem</li> <li>Justifies the methodology in relation to the research topic or problem.</li> <li>Exceptional proposal of analysis demonstrating an excellent grasp of logic, critical thinking and engagement with sources</li> </ul>
<p><i>Timeline</i></p>	<ul style="list-style-type: none"> <li>Inadequately developed timeline that does not reflect the necessary tasks or timelines for their completion</li> </ul>	<ul style="list-style-type: none"> <li>Rudimentary timeline</li> <li>Incorporates some necessary tasks for project completion but with less detail and/or unrealistic timeframes</li> </ul>	<ul style="list-style-type: none"> <li>Thoughtful and realistic timeline</li> <li>Incorporates most necessary tasks for project completion</li> </ul>	<ul style="list-style-type: none"> <li>Highly thoughtful and realistic timeline</li> <li>Incorporates almost all necessary tasks for project completion</li> </ul>	<ul style="list-style-type: none"> <li>Exceptionally thoughtful and realistic timeline</li> <li>Incorporates all necessary tasks for project completion</li> </ul>
<p><i>Communication</i></p>	<ul style="list-style-type: none"> <li>The student shows no use of presentation skills, such as eye contact, voice and palm cards.</li> <li>No engagement.</li> </ul>	<ul style="list-style-type: none"> <li>The student demonstrates limited use of presentation skills, such as eye contact, voice and palm cards.</li> <li>Little engagement.</li> </ul>	<ul style="list-style-type: none"> <li>The student demonstrates some use of presentation skills, such as eye contact, voice and palm cards.</li> <li>Some engagement.</li> </ul>	<ul style="list-style-type: none"> <li>The student demonstrates effective use of presentation skills, such as eye contact, voice and palm cards leading to an engaging presentation.</li> </ul>	<ul style="list-style-type: none"> <li>The student demonstrates a highly confident use of presentation skills, such as eye contact, voice and palm cards leading a to a highly engaging presentation.</li> </ul>
<p><b>TOTAL</b></p>					<p><b>/30</b></p>
<p><b>Comments</b></p>					