

Assessment Guidelines – 91583 – Conducting an Experiment

	Achieved (all compulsory)	Merit... Achieved PLUS	Excellence... Merit PLUS
Problem	<p>What is going to be investigated is clearly stated.</p> <p>A causal relationship question is posed that can be investigated by conducting an experiment.</p>	A prediction is made for the experiment with justification using research findings. (Compulsory)	Contextual and statistical knowledge is informed by research to develop the investigative question. (Compulsory)
Plan	<p>The following are identified.</p> <ul style="list-style-type: none"> - The type of experiment. - The experimental units. - Treatment variable and how it will be manipulated. - Response variable and how it will be measured. - How treatments will be allocated to the experimental units. - Other sources of variation that could affect the results of the experiment. 	<p>The allocation of the treatment to the experimental units is justified.</p> <p>Explanation given as to how other sources of variation could affect the findings.</p>	<p>How the treatment variable (including levels and groups) and response variable were defined for the experiment is justified.</p> <p>Contextual knowledge is used to identify relevant variables that could affect the response variable.</p> <p>Statistical knowledge is used to describe how these sources of variation could be controlled or balanced.</p>
Experiment	<p>Data from the experiment is collected and recorded.</p> <p>Any issues that occurred during the experiment were recorded.</p>	<p>Any issues that arise during the experiment are identified.</p> <p>Discussion is given about how issues might affect the findings.</p>	<p>A reflection is given on how the experiment was conducted.</p> <p>Explanations given as to how issues might be addressed.</p>
Data	<p>Appropriate displays and summary statistics are produced.</p> <p>This includes dot plots, box and whisker, summary statistics and randomisation distribution.</p>	Displays must have a good title and axis labelled correctly with units.	
Analysis	<p>Key features of the displays and statistics are described.</p> <p>An appropriate statistical method is selected to answer the investigative question.</p> <p>The selected statistical method is used to make a correct inference about the causal relationship investigated.</p>	<p>The choice of statistical method in relation to causal relationship is justified.</p> <p>The strength of the evidence for the causal relationship is interpreted.</p>	<p>A feature of the data is used to explore further factors and effects.</p> <p>Statistical insight is used to justify the method in relation to the causal relationship.</p>
Conclusion	Each component of the investigative process is clearly communicated.	The design of the experiment is linked to the results and research findings. (Compulsory)	<p>A discussion is given how findings relate to research findings. (Compulsory)</p> <p>Contextual knowledge is used to generalise to the wider experimental situation in their discussion of their findings.</p>
Appendix	Data and any other resources included as an appendix.		

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the Achievement Standard.