

## Assessment Guidelines – 91582 – Use statistical methods to make a formal inference

Text in **bold** indicated a change from the previous level of achievement.

	Achieved	Merit	Excellence
<b>Problem</b>	The question is a comparison investigative question that clearly identifies the comparison and the population(s).	A comparison investigative question has been posed and <b>includes an explanation for the choice of variables for the investigation.</b>	<b>The research is used to develop the purpose</b> for their investigation and <b>the contextual knowledge is used to pose a comparison investigative question.</b>
<b>Data</b>	Dot plots and box and whisker plots are produced and summary statistics, including the difference between the sample medians, have been calculated.  A bootstrap interval must be constructed and displayed	Dot plots and box and whisker plots are produced and summary statistics, including the difference between the sample medians, have been calculated.  A bootstrap interval must be constructed and displayed	Dot plots and box and whisker plots are produced and summary statistics, including the difference between the sample medians, have been calculated.  A bootstrap interval must be constructed and displayed
<b>Analysis</b>	The sample distributions are discussed and compared in context. This could involve comparing the shift/centre, spread, shape, and unusual features – using features of the displays and the summary statistics.  A formal statistical inference is made by using resampling (bootstrapping) to construct a confidence interval.	The sample distributions are discussed and compared in context. This <b>will</b> involve comparing the shift/centre, spread, shape, and unusual features, <b>with reference to features of the displays and the summary statistics and links to the population or investigative question.</b>  A formal statistical inference is made by using resampling (bootstrapping) to construct a confidence interval.	The sample distributions are discussed and compared in context. This <b>includes seeking explanations</b> for features of the data, which have been identified <b>including justifying the choice of using median</b> and <b>considering the impact</b> of these on the context or investigative question. <b>Reference to knowledge from the research needs to be included in the discussion.</b>  A formal statistical inference is made by using resampling (bootstrapping) to construct a confidence interval.
<b>Conclusion</b>	The formal inference is used to answer the investigative question.  An understanding of sampling variability is evident.	The formal inference is used to answer the investigative question, <b>justifying the call and making links to the context. The conclusion includes an interpretation of the confidence interval.</b>  An understanding of sampling variability is evident.	The formal inference is used to answer the investigative question, justifying the call and <b>linking back to the purpose of the investigation.</b>  The conclusion includes an interpretation of the confidence interval <b>and a discussion of sampling variability. Findings are clearly communicated and linked to the context and populations. There is a reflection on the process or other explanations for the findings have been considered which may involve re-examining the data from a different perspective.</b>

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