

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 |
|-------------------|---|---|--|
| Problem | The question is a comparison investigative question that clearly identifies the comparison and the population(s). | A comparison investigative question has been posed and includes an explanation for the choice of variables for the investigation. | The research is used to develop the purpose for their investigation and the contextual knowledge is used to pose a comparison investigative question. |
| Data | 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 |
| Analysis | 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 will involve comparing the shift/centre, spread, shape, and unusual features, with reference to features of the displays and the summary statistics and links to the population or investigative question. 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 includes seeking explanations for features of the data, which have been identified including justifying the choice of using median and considering the impact of these on the context or investigative question. Reference to knowledge from the research needs to be included in the discussion. A formal statistical inference is made by using resampling (bootstrapping) to construct a confidence interval. |
| Conclusion | 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, justifying the call and making links to the context. The conclusion includes an interpretation of the confidence interval. An understanding of sampling variability is evident. | The formal inference is used to answer the investigative question, justifying the call and linking back to the purpose of the investigation. The conclusion includes an interpretation of the confidence interval 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. |

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