**Using the PPDAC cycle – providing a structure to the investigation.**

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| Problem | posing an appropriate comparison, investigative question from a given set of population data |  |
| Plan | For existing data set state location of data and how it was collected. Students should select their own sample size and method and provide justification for the random sampling method chosen, that is a simple random sample will be representative of the population.  State the question used to obtain the data. |  |
| Data | For existing data sets the raw data may be presented as a dot plot. State variables and units of measurement. For data selected by hand present table of data. |  |
| Analysis | Selecting and using appropriate displays and measures   * Plot(s) of the sample data * 5 point summary statistics calculated * State sample median and IQR * Calculate *informal* confidenceintervals calculated and plotted. * Make estimate of population parameters   Comment on the **shape of the plotted data** using appropriate statistical language such as spread, skew, variability, mean, mode. |  |
| Conclusion  (Communicate findings) | Make a claim about whether one group has larger values than another group using informal confidence intervals for the population medians. |  |
| Comment on the sampling method, including the size. |  |
| Discussing sampling variability, including the variability of estimates Explains the connections among sample, population, [sampling variability](http://seniorsecondary.tki.org.nz/Mathematics-and-statistics/Glossary/Glossary-page-S#samplingVariation), [sample size effect](http://seniorsecondary.tki.org.nz/Mathematics-and-statistics/Glossary/Glossary-page-S#sampleSize), informal confidence interval, and degree of confidence. |  |
| Discussing sample distributions  Consider possible causes of variation using knowledge of the context. |  |
| Discuss possible sources of bias. |  |