WHANGAPARAOA COLLEGE

10Maths Statistical Investigation

Name: _____ **Teacher:** _____ **Group:** _____

Context

In this assessment activity, you will conduct a statistical investigation comparing data from learners in 2 different year levels, following the PPDAC cycle.

You will pose an investigative question, plan the investigation, collect and analyse the data from 2 different year levels and write your conclusion.

The Problem, Plan and Data stages of the PPDAC cycle can be worked on collaboratively in groups but you each need to write up them up individually on your own refill.

The Analysis and Conclusion will also be written on refill paper but individually under test conditions.

Problem (in groups)

As a group, decide what you want to investigate.
Think about:

- what your 2 variables will be
- what your comparative investigative question will be

Categorical variable: _____

Numerical variable (continuous/ discrete): _____

_____

Comparative Question	Teacher's signature

Justified Prediction: _____

_____

_____

Plan (in groups)

Describe how you will conduct your statistical investigation. You need to explain:

- in detail how you will collect the data from the learners
- any issues you might have in collecting the data and how you can address them
- how you will record the data from both classes.

Data (in groups)

As a group collect your data from both classes of learners.
You must be ready to collect your data from your own class on _____.
You must be ready to collect your data from _____ on _____.
Each learner will need a copy of the data written on their own piece of refill paper.

Analysis (individually under test conditions)

You will complete an analysis of your 2 sets of data. This will include:

- drawing 2 dot plots and 2 box-and-whisker graphs, correctly labelled
- describing the features of the graphs in context using **DISCUSS**
- using evidence to support your comments
- linking your results to the context
- writing whether your results make sense, are they what you expected and why?

Conclusion (individually under test conditions)

Answer your original comparative question comparing the 2 groups of learners.

Make an inference about the populations of Year 8 and Year 10 learners at Whangaparaoa College.

Reflect on the investigation process. Could you have improved how you conducted your investigation? Is there something else that would be interesting to further investigate?

The quality of your discussion and reasoning about the investigation process and how well you link your findings to the context will determine your overall grade.

10Maths Statistical Investigation Success Criteria

	Achieved	Merit	Excellence
	Conduct a statistical investigation using statistical methods	Conduct a statistical investigation using statistical methods, with justification.	Conduct a statistical investigation using statistical methods, with statistical insight
	Learners will show evidence of using **each** component of the PPDAC cycle in **context**.	Learners will show evidence of using **each** component of the PPDAC cycle in **context**, **explaining** what they are doing and supporting their findings with **evidence**.	Learners will show evidence of using **each** component of the PPDAC cycle in **context**, reflecting on their process, justifying their decisions and **showing evidence of statistical insight** and commenting on whether their results make sense to them, based on their understanding of the situation.
	The learner:	***In addition to the requirement for Achieved, the learner:***	***In addition to the requirement for Merit, the learner:***
Problem	• poses an appropriate comparative question.	• states what the categorical variable is and what the numerical variables is	• writes a justified prediction
Plan	• plans the statistical investigation and clearly identifies how the data will be collected and recorded	• states what the independent and dependent variables are	• identifies anything that might affect the accuracy of the data they collect • justifies decisions they make in planning their investigation
Data	• collects and records the data using appropriate units		
Analysis	• draws **TWO box plots** and **TWO dot plots** • discusses features of the graphs using **DISCUSS**	• discusses features of the displays and measures in **context** **AND** • uses evidence to support their comments	• discusses the displays and measures, integrating statistical and contextual knowledge *"Do my results make sense?"* *"Is this what I expected to happen based on my understanding of this context and based on what the research showed?"*
Conclusion	• clearly answers their initial question comparing the 2 groups	• makes an inference about the populations of Year 8 and Year 10 learners at Whangaparaoa College • communicates their findings clearly	• considers whether their sample reflects the population • reflects on the investigation process and considers: o has anything affected how accurate their results are o other areas for further investigation