**Background Information**

This assessment activity requires you to produce a report describing an investigation that uses statistical methods to make a formal inference related to a driver’s ability to ‘react’ to a variety of situations whilst driving.

You will work independently over a period of 3 hours to pose a comparison investigative question, complete an analysis, make conclusions, and write your report.

The quality of thinking demonstrated in your report and your ability to link the context and populations to the different components of the statistical enquiry cycle will determine your overall grade.

Inference 3.10 : Distracted Driving

You have been provided with a data set, summarising the reaction test results of 63 Year 13 students simulating a range of ‘Distracted Driving’ scenarios.

Use the statistical enquiry cycle to conduct your investigation and write a report describing the investigation.

1. Familiarise yourself with the data set provided. This will include doing research to help you understand the variables and develop a purpose for the investigation.
2. Identify the variables you wish to investigate, and establish a related investigative comparison question.
3. Conduct your investigation and write a report containing:

* your comparison investigative question
* appropriate displays and summary statistics
* a discussion of the sample distributions
* an appropriate formal statistical inference
* a conclusion communicating your findings, which may include discussing sampling variability, including the variability of estimates and reflecting on the process that has been used to make the formal inference.

As you write your report, take care to link your discussion to the context and to support your statements by referring to statistical evidence.

Information about the Variables

* **Baseline:** control reaction time (seconds); normal reaction time with no distractions
* **Talking on cellphone:** reaction time (seconds); reaction time whilst talking and listening on a cellphone.
* **Reading a text message:** reaction time (seconds); reaction time whilst reading a text message on a cellphone.
* **Sending a text message:** reaction time (seconds); reaction time whilst sending a text message on a cellphone.
* **Listening to music:** reaction time (seconds); reaction time whilst wearing headphones, listening to music.
* **‘Kids fighting’:** reaction time (seconds); reaction time whilst two ‘children’ are fighting / arguing in the back seat of the vehicle.
* **‘Kids nagging’:** reaction time (seconds); reaction time whilst two ‘children’ are nagging / complaining / whining in the back seat of the vehicle.
* **‘Kids crying’:** reaction time (seconds); reaction time whilst a ‘child’ is in the back seat of the vehicle.
* **Gender :** gender of driver – Male or Female.

FURTHER INFORMATION: Data sets

A “Master” dataset is provided. Subsets of this ‘Master’ have also been provided; use them if you wish.