

Achievement Standard 91265 (Mathematics and Statistics 2.10)

Conduct an experiment to investigate a situation using statistical methods

Practice assessment

Running economy is a measure of how efficiently a person uses oxygen while running at a given pace. Running economy has been found to be a good predictor of race performance.



A number of variables that may affect running economy. These include biomechanical factors, technique, fitness, age, and environmental conditions. (Source: Wikipedia)

Your task is to plan, carry out and report on a statistical experiment to investigate an aspect affecting running economy.

Your report should contain the following:

- **Introduction** – the investigative question and the purpose of the investigation
- **Method** – describe the experimental method, including a plan of the experiment and the process used to collect the data; include the variables and measures you have chosen and give the reasons that you have chosen them, linked to any relevant knowledge about the context. Consider any related variables and how these may affect the experiment.
- **Analysis** – select and discuss appropriate displays and measures
- **Discussion** – discuss your findings and reflect on the process, describing any limitations or possible improvements to the experiment process that you have identified.
