**Strand:** Exploring, analyzing and modelling data  
**Band:** Middle Years  
**Standard:** 4  
**Year Level:** 7

**Key Idea**
Students engage with data by formulating and answering questions, collecting, organising and representing data in order to investigate and understand the world around them. [In] [T] [C] [KC2] [KC6]

Students use statistical methods to reduce, analyse and interpret data, while critically evaluating the cultural and social inclusivity of the samples used. [In] [T] [KC1]

Students engage with data to understand, analyse and apply notions of chance and probability in the social and natural worlds. [F] [In] [T] [KC1]

**Outcome**
4.1 Poses questions, appropriately designs a survey, collects data and classifies sequence, collapses, tabulates and represents the data with and without ICT’s. [In] [T] [C] [[KC1] [KC2] [KC7]

4.2 Reads and describes information in given tables, diagrams, line and bar graphs. Makes predictions based on the information, understanding the limitations of data interpretation and possible social consequences of these limitations. [In] [T] [KC2] [KC6]

4.3 Interprets data and makes numerical statements about probability, models situations, using data to validate their theories about the fairness of everyday situations including hypothetical situations. [F] [In] [T] [KC1]

**Task/Activities**
Design a report substantiated by data containing recommendations to the school council about improvements and/or changes that could be made around the school community.

This is a long-term task with multiple links to other mathematical strands and learning areas eg English: Report writing
Examples of evidence towards achievement of outcomes

Students:
Collect and represent data for task
  Construct survey
  Tabulate data using ICT
  Produce graphs using ICT

Critically analyse data
  Note differences eg between gender and year levels
  Recognise limitations of graph/data
  Make predictions for possible inclusions in report.

Write report, making recommendations
  Use data to validate recommendations
  Use data to ensure fairness and practicality of recommendations

Description of long-term task

A. Working in pairs
  1. Choose a particular aspect of the school as overseen by subcommittees of the school council. Each pair of students investigating a different topic.
  2. Compose five questions which could lead to recommendations for change. Ensure that questions have only two alternative answers.
  3. Design a data collection sheet including relevant personal information eg M/F & year level. Personal information is not included in the five questions.
  4. Sort data and tabulate.
  5. Design table using ICT spreadsheet.
  6. Enter data.

B. Working individually
  1. Create graphs using ICT program
  2. Critically analyse graphs noting differences between different sections of the school population.
  3. Choose appropriate graphs for report and justify choice.
  4. Write report including recommendations to benefit whole school community and validate recommendations with data.

C. Assessment
  A rubric could be used to assess outcomes.