

**Please note that this is a sample unit of learning designed for the purpose of teacher professional development. This unit can be used for individual consideration and/or departmental discussion.**

**Concept/Theme:** Data Generation and Analysis

Using authentic data, explore possible sources and applications of data, sampling, representation and statistical summaries to describe, compare and interrelate data, where applicable. The statistical enquiry cycle will be referenced throughout the unit

**Student Context:** This unit is designed for a first year group with little or no previous engagement with the learning outcomes from the statistics and probability strand of the Mathematics Specification. However, students would have some prior learning in the area of data generation and analysis from the primary school curriculum.

**Learning Outcomes (L3):** SP3 (a-h), GT1, N1(e), U2, U6, U13

**Learning Outcomes (L2):**

Numeracy

- 2.39 - Identify basic approaches to data collection, e.g. record sheets, tally system
- 2.40 – Collect a range of data using one of the following: a survey, record sheet, tally system or audio-visual records
- 2.41 – Interpret basic data of two criteria (e.g. more/less or one class than another, bigger/smaller)

Communication and Literacy

- 1.21 – Use a range of different forms of writing to suit purpose and audience

**Key Learning:**

- Students should be able to measure accurately and understand the need for approximation and rounding in the context of real-life problems
- Students should learn about the stages of a statistical investigation (Designing the investigation, identifying the variable of interest, organising and managing the data, and analysing and interpreting data summaries)
  - Students should understand that the decisions they make in the planning stage of the statistical enquiry cycle (e.g. what variables to measure and/or how many) will impact on the other stages of the cycle (e.g. limitations and misuses)
- Students should understand that representing data in graphical form is a mode of communication in statistics
- Students should be able to justify their choice of variables and graphical representations
- Students should begin to develop their skills in statistical design with a particular focus on question generation
- Students should understand the purpose of the measures of central tendency and range

### Ongoing Assessment

- Can students select and justify their choice of approximation and decimal rounding in a variety of contexts?
- Can students identify variables in statistical questions?
  - Can students determine which variables are dependent and independent, and identify measuring strategies?
- Can students calculate the measures of central tendency and range accurately and appropriately?

### L2LP Evidence of Learning

- Class discussion about data collection methods will occur intermittently during the unit. Questioning (written/oral) must be used and recorded in the student's portfolio as evidence of learning for 2.39
  - Evidence for this learning outcome can be gathered during multiple lessons.
- A record of the data gathered must be kept in some format for inclusion in students' portfolios as evidence of learning for 2.40
  - There will be an opportunity to record the hand sizes of students during the Investigating Hand Size task.
  - There will be an opportunity to record the reaction times during the reaction times task.
- There will be opportunities during the unit to discuss categorical and numerical data during multiple lessons.
  - Worksheet (Investigating Hand Size task) may be kept in the student's portfolio as evidence of learning for 2.40.
  - Students can compare reaction times during the reaction times task. A record of the comparison may be kept in the student's portfolio as evidence of learning for 2.40.
- Students should use a diagram or table to communicate their thinking.
  - Students are asked to draw a bar chart of gathered data during the Investigating Hand Size task. This bar chart must be kept in the student's portfolio as evidence of learning for 1.21.

Note: More evidence of different forms of writing may be needed for other Level 3 subjects or Level 2 specific lessons to meet the requirements of 1.21

### Tasks/Resources/Strategies

- Investigating Hand Size task
- [www.cso.ie](http://www.cso.ie) & <https://censusatschool.ie/about/>
- Reaction timer ([http://www.ict.ie/maths/cpd\\_workshops\\_2019\\_2020](http://www.ict.ie/maths/cpd_workshops_2019_2020))