Unit 4 Civic Numeracy, AOS 6 Data Reaction Times & Road Safety

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| **Excelling** | Independently selects the most appropriate data collection tools, processes and production to collect, collate and organise data. | Independently selects the most appropriate tables and graphs, including axes and scales, to display collected data. | Independently determines the most appropriate measures o centre and spread to be calculated.Considers different measures of centre, spread and any outliers when making conclusions from data | Can read and interpret results from data, using patterns, variations, trends and summary statistics to draw conclusions. | Detailed identification and interpretation of key mathematical information in the context of the task and the mathematical processes needed to solve the problemDevelops a detailed and explicit plan to independently complete the task | Independently selects and flexibly uses a variety of mathematical actions, processes and appropriate tools and technology to complete the task. | Thoroughly checks and critically reflects on all results to see if they are as expected.Independently evaluates the appropriateness & reasonableness of answers and adjusts where necessary. | Uses formal written mathematical representations and general language to document, interpret and communicate results of the task.  | Careful consideration and selection of the different tools and technology available for collecting, organising, displaying and analysing data. |
| **Achieving** | Understands data collection tools, categorisation, processes and productionCan collect, collate and organise data into meaningful data sets. | Displays collected data in the most appropriate tables and graphs.Includes all relevant features e.g. title, axes and scales etc. | Can select and calculate the most appropriate measures of centre and spread of data and describe how they influence conclusions made.Can identify outliers and the impact they have. | Can read and interpret data presented in tables, graphs and summary statistics, including to describe patterns, variations and trends.Can draw conclusions from the data analysis. | Can identify and interpret the relevant mathematical information in the context of the task and the mathematical processes needed to solve the problemDevelops a clear, detailed plan to complete the task. | Selects and flexibly uses a variety of mathematical actions, processes and appropriate tools and technology to complete the task. | Can check and critically reflect on results to see if they are as expectedIndependently makes decisions about the appropriateness & reasonableness of answers and adjusts where necessary. | Uses informal and formal mathematical representation and general language to present and discuss the results of the task. | Appropriate selection and use of tools and technology for collecting, organising, displaying and analysing data. |
| **Satisfactory** | Can collect a range of data and organise into suggested graphs and tables | Can display data in commonly used tables and graphs.  | Can perform basic calculations of mean, median, mode and range of simple dataCan identify outliers in data sets. | Can read results from data presented in tables and graphs and begin to identify patterns, variations and trends in the data. | With prompting can identify the purpose of the task and make a simple short plan to complete the task. | Undertakes the given mathematical actions, and processes and uses suggested tools and technology to complete the task. | Can respond to prompting or questioning to check the appropriateness and reasonableness of results answers. | Uses mostly informal language and some written mathematical representations to present and discuss the results of the task. | Appropriate use of suggested tools and technology for collecting, organising, displaying and analysing data. |
| **Not yet satisfactory** | Can collect simple data and record data in suggested tables.  | Can display data in basic tables and/or graphs. | Can identify and describe the different measures of centre and spread. | Can identify simple information from tables and graphs. | Understands the purpose of the tasks and can follow a given plan to complete the tasks. | With support undertakes the given mathematical actions, and processes to complete the task. | Requires support to review the appropriateness and reasonableness of results and answers. | Uses limited informal language to present and discuss the results of the task. | Appropriate use of tools and technology for collecting, organising, displaying and analysing data, when supported and scaffolded by the teacher. |
| Not Shown | Not Shown | Not Shown | Not Shown | Not Shown | Not Shown | Not Shown | Not Shown | Not Shown |
| **Criteria** | **Data Collection** | **Data Displays** | **Data Calculations** | **Data Analysis** | **Identify the mathematics** | **Act on and use mathematics** | **Evaluate and Reflect** | **Communicate and report** | **Tools and technology** |
| **Outcome 1****Civic Numeracy & AOS 6 - Data** | **Outcome 2****Problem-Solving Cycle** | **Outcome 3****Mathematical toolkit** |
| Students collect, represent and undertake different analyses of data to discover patterns in data, undertake summary statistics, and derive meaning from data located within relevant but possibly unfamiliar or non-routine contexts. Data should be examined for comparison and analysis. Students should draw conclusions from the data and their analysis and be confident to represent, describe and reflect on any patterns, outcomes and trends. | Students should be able to use the Problem-Solving Cycle (identify the mathematics, act on and use mathematics, evaluate and reflect, and communicate and report) in an applied learning context, relevant to the key skills and knowledge reflected in the focus areas and the numeracy context. | Students should be able to use a variety of tools and appropriate technologies to solve mathematical problems. Students should become familiar with analogue and digital tools and be confident in knowing the purpose of everyday tools. |