Unit 3 Personal Numeracy, AOS 3: Quantity & Measures Tiny House

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| **Excelling** | Can apply prior knowledge and experience to estimate measurements for unfamiliar items. Can independently select the appropriate tool for measuring a range of objects and distances with appropriate accuracy and tolerance. | Selects and applies both formal and informal strategies for converting between metric and non-metric units of measurement. | Selects and uses the appropriate formulae to undertake measurement calculations of complex shapes, including unfamiliar compound shapes. | Can read, interpret and calculate with unfamiliar temperature measurementsCan read and interpret 12-hour and 24-hour time across unfamiliar time zonesCan perform calculations using multiple units of time and calculate complex time durations. | 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** | Can estimate and perform a range of routine measurements and reflect on accuracy of the estimates.Can demonstrate understanding of accuracy and understanding in measurements | Can use a variety of strategies to convert between metric units of measurement.Can use informal methods to convert between metric and non-metric units where relevant. | Can use common and routine formulae to undertake calculations of perimeter, area, volume and capacity for routine more complex shapes, including compound shapes and the use of circular measurements | Can read, interpret and calculate with temperature measurementsCan read and interpret analogue and digital time, including 24-hour time.Can perform calculations of time involving different time zones and calculate time durations | 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 first estimate then perform metric measurements of common and familiar items. | Can identify and understand the use of common and familiar units of measurements.Can recognise the use of relevant non-metric units of measurement. | Can undertake basic calculations of distance, permitter, area, volume and capacity of simple shapes, when provided with the appropriate formulae. | Can read and interpret familiar temperature measurementsCan recognise 12-hour digital time, including minutes and hours on digital clocks, and hours, quarter- and half-hours on analogue clocksCan recognise day and month dates | 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 perform basic measurements of common, familiar items | Can recognise familiar and common units of measurementCan recognise basic units of time and temperature. | Can undertake basic calculations of distance, perimeter and area of simple two-dimensional shapes, when provided with the appropriate formulae. | Can read basic o’clock and half hour time on digital and analogue clocks.Can name the days of the week and months of the year. | 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** | **Measuring** | **Units** | **Calculations** | **Time & Temperature** | **Identify the mathematics** | **Act on and use mathematics** | **Evaluate and Reflect** | **Communicate and report** | **Tools and technology** |
| **Outcome 1 – Area of Study 3 Quantity and Measures & Personal Numeracy Context** | **Outcome 2 Problem-Solving Cycle** | **Outcome 3 Mathematical toolkit** |
| Students develop an understanding of metric measurements and their units of measurement applied to multi-step measurement tasks including working with commonly used non-metric measurements and their units of measure. Students will conduct estimations of measurements, perform a range of measurement calculations, and undertake conversions with the embedded use of different technologies. | 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. |