**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 4 | STRAND:Measurement and Geometry | **SUB-STRAND:**  Mass 2 | **WORKING MATHEMATICALLY:**  MA1-1WM MA1-4WM MA1-3WM |
| OUTCOMES: **MA1-12MG** | | **Measures, records, compares and estimates the masses of objects using uniform informal units** | | |
| **CONTENT:** | | **Compare the masses of objects using balance scales**   * Explain the relationship between the mass of a unit and the number of units needed, eg more toothpicks than pop sticks will be needed to balance the object (Communicating, Reasoning) * Estimate masses by referring to the number and type of uniform informal unit used. * Record mass by referring to the number and type of informal unit used. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Ask students to balance different objects. Listen for statements.   ‘ The scissors are lighter than the book’ ‘ The rock is heavier than the stapler’ | | |
| WARM UP / DRILL | | * Students take 20 multi link cubes and make two different shapes using ten in each shape. Students weigh the shapes to see if they balance. Students keep on changing and weighing. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | |  | | |
| QUALITY TEACHING ELEMENTS | | **INTELLECTUAL QUALITY** | **QUALITY LEARNING ENVIRONMENT** | **SIGNIFICANCE** |
| * Deep knowledge * Deep understanding * Problematic knowledge * Higher-order thinking * Metalanguage * Substantive communication | * Explicit quality criteria * Engagement * High expectations * Social support * Students’ self-regulation * Student direction | * Background knowledge * Cultural knowledge * Knowledge integration * Inclusivity * Connectedness * Narrative |
| RESOURCES | |  | | |

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| Revise how to use an equal arm balance.  * Introduce activities and explain what to do and how to record. * Students will work in groups with an equal arm balance to complete assigned tasks. * Students will record and discuss findings. * Students discuss difficulties using equal arm balance, material or items. * Whole class discussion on the conservation of mass. * Students will find out how many identical units will balance a given mass. * Students suggest appropriate units to measure and explain why some unit are better than others. * Students have a recording book to record findings and activities. * Opportunities should be provided for free play using balance beams. | LEARNING SEQUENCERemediationES1 | * Given a number of identical bags or containers filled with different materials such as pasta, marbles, crumpled paper, nails, screws or beads. Students put them in order from lightest to heaviest. Given another bag they can decide where it should fit in the sequence. |
| LEARNING SEQUENCES1 | * Heaviest pencil case.   Work in groups of three or four to estimate, then measure whose pencil case is heaviest by measuring the mass of each pencil case with blocks (teddies, marbles etc.). Ensure that the same units are selected for measuring. Record in order of mass.   * Guess and Check Record.   Teacher provides a selection of objects that can be weighed. Students estimate how many pencils, counters, blocks etc would be needed to balance the same object. Student record to work sheet   |  |  |  | | --- | --- | --- | | * OBJECT | * ESTIMATE | * ACTUAL | | * Toy Car | * \_\_\_\_\_\_\_\_\_ pencils | * \_\_\_\_\_\_\_\_\_\_ pencils |  * Assessment: Estimate how many units to measure an object. Are estimations reasonable? |
| LEARNING SEQUENCEExtensionEarly S2 | * Identifying the need for a standard unit. * Students find objects that weigh 1kg * More or less than a Kg |
| **EVALUATION & REFLECTION** | * Student Engagement: Achievement of Outcomes: * Resources: Follow Up: |