**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 3 | STRAND: Measurement and Geometry | **SUB-STRAND: Volume and Capacity 1** | **WORKING MATHEMATICALLY:** **MA1-1WM, MA1-3WM** |
| OUTCOMES: MA1-11MG | **Measures, records, compares and estimates volumes and capacities using uniform informal units.**  |
| **CONTENT:**  | **Measure and compare the capacities of pairs of objects using informal units (ACMMG019)*** Record capacities by referring to the number and type of uniform informal unit used
* Compare the capacities of two or more containers using appropriate uniform informal units
* Recognise that cubes pack better than other objects in rectangular containers (Reasoning)
* Pack cubic units (e.g. blocks) into rectangular containers so that there are no gaps
* Estimate capacities by referring to the number and type of uniform informal units used and check by measuring
 |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) |  Worksheet: Circling objects that will stack (blocks, bricks, parcels etc) as opposed to objects that will not stack ( marbles, eggs, cone shaped party hats). |
| WARM UP / DRILL | Counting by twos, threes, fives and tens. |
| 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 | Variety of rectangular containers e.g. boxes, cartons, grocery packets, lunch boxes, ice cream containers, drink bottles, blocks, pencils and paper,**Teaching Measurement Early Stage 1/ Stage 1** Volume and Capacity pg 100-101 |

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Activity* Step 1

•Introduce the activity as measuring and comparing the capacity of containers using blocks.•Discuss the structure of packing. Teacher model the use of “rows”, “columns” and “layers”. Remind students that layer patterns will look like area grids.•Whole class discuss and count the blocks in one layer. Discuss how to find the total number of blocks.* Step 2

Students work with a partner or small group to pack blocks into a carton, a packet and a lunch box.* The number of blocks required to fill each container is counted and recorded.
* A diagram in the form of an array is drawn for each container.
* The containers may be placed in order and labelled.
* Calculate the differences in the capacities of the containers.
 | LEARNING SEQUENCERemediationES1  | * Questioning

What does estimation mean? How can we check our estimates? |
| LEARNING SEQUENCES1 | * **Compare by Packing – Pack and Order**

Order rectangular containers by estimating, then packing with blocks. Record the number of blocks used and a diagram of the packing. Students should draw the array as accurately as possible.1. Compare capacities by filling or packing with identical units.2. Know that the greater capacity has more units.3. Estimate the number of units and explain the estimation strategy.* Investigation: How much more?

Students investigate the capacities of an ice cream container, plastic drink bottle and soap powder box by pouring sand from one container to another. Check results by filling the containers with water using a jug. Count and record the number of cups used to fill each container. Discuss which method was more accurate.* Assessment: Students arrange a number of containers in order according to the amount of material each holds.
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| LEARNING SEQUENCEExtension Early S2 | * Provide students with objects that hold mL and ones that hold L, have the students determine which measurement to measure the liquid in eg mL or L. Then have students sort objects (in both mL and L) by which holds the least to which holds the most
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| **EVALUATION & REFLECTION** | Student engagement: Achievement of outcomes:Resources: Follow up: |

**TEACHING AND LEARNING EXPERIENCES**

All assessment tasks should be written in **red** and planning should be based around developing the skills to complete that task.