**MATHEMATICS EARLY STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 1 | STRAND: Measurement and Geometry | **SUB-STRAND: Volume and capacity** | **WORKING MATHEMATICALLY:****MAe-1WM** |
| OUTCOMES: MAe-11G | **Describes and compares the capacities of containers and the volumes of objects or substances using everyday language.** |
| **CONTENT:**  | **Use direct and indirect comparisons to decide which holds more and explain their reasoning using everyday** **language (ACMMG006)*** Use the terms ‘full’, ‘empty’ and ‘about half full’.
* Recognise when a container, such as a watering can, is nearly full, about half-full or empty (Reasoning)
* Identify the attribute of ‘volume’ as the amount of space an object or substance occupies.
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * The students’ knowledge of full, half full and empty will provide insight into to the depth of prior knowledge in the class discussion.
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| WARM UP / DRILL  | * ‘Buzz off Hairy Legs’ – Students will stand in a circle. The teacher will give the students a range of numbers e.g. 10- 30 students take turns saying one number. If the student is incorrect or doesn’t know where they are up to then they sit down. If the target number is reached then the next player says “buzz” the next “off” the next “hairy” the next says “legs” the next player automatically has to sit down.
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| TENS ACTIVITY**NEWMAN’S PROBLEM INVESTIGATION** |  |
| QUALITY TEACHING ELEMENTS | **INTELLECTUALQUALITY** | **QUALITY LEARNINGENVIRONMENT** | **SIGNIFICANCE** |
| * Deepknowledge
* Deepunderstanding
* Problematicknowledge
* Higher-orderthinking
* Metalanguage
* Substantivecommunication
 | * Explicit quality criteria
* Engagement
* High expectations
* Social support
* Students’ self-regulation
* Student direction
 | * Background knowledge
* Cultural knowledge
* Knowledge integration
* Inclusivity
* Connectedness
* Narrative
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| RESOURCES | A glass water At least 30 plastic cups Labels |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED &INDEPENDENT ACTIVITIES |
| Model full, half or an empty. Have a big glass of water in your hand and ask your students if it is full, half full or empty. Then drink half of it, and then repeat the question. Drink the remainder of the water and repeat the question. Ask the students what it means to be full, half full and empty. Identify that the water in the full glass has a larger volume than the water in the half glass.Instruct students to fill their cup to show you empty, half full and full. Observe by walking around the room that all students understand the concepts of empty, half full and full. | LEARNING SEQUENCEPre Foundation Skills | * They know the difference between big and small.
* An idea of full and empty.
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| LEARNING SEQUENCE ES1 | **Investigation:*** Have three teddy bears or toys and put them behind a glass that is either full, half full or empty. Ask specific students to come and tap the teddy behind one of the glasses to identify full, half full or empty.

**Investigation:*** Students will be given a plastic cup either full of water half full or empty. They will have to choose which sign to place their cup in front of ‘full’, ‘half full’ or empty’. Have students check where the cups are and ask if they think any should be moved and why.
* Assessment: Observe and record anecdotal notes on the students’ ability to clearly identify when a cup is full, half full and empty.
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| LEARNING SEQUENCE Extension S1 | * Have students take turns of having to place multiple cups of varying levels of water into their categories.
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|  **EVALUATION &REFLECTION** | Where the students engaged? Were the resources appropriate? Did the students achieve the outcomes? What follow up is recommended?  |