**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: 1 | WEEK: 8 | STRAND:Number and Algebra | **SUB-STRAND:**  Whole Numbers 2 | **WORKING MATHEMATICALLY:**  MA1-3WM & MA12WM |
| OUTCOMES: | | * MA1-1WM describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols * MA1-2WM uses objects, diagrams and technology to explore mathematical problems * MA1-3WM supports conclusions by explaining or demonstrating how answers were obtained * MA1-4NA applies place value, informally, to count, order, read and represent two- and three-digit numbers | | |
| **CONTENT:** | | **Develop confidence with number sequences from 100 by ones from any starting point (ACMNA012)**  • count forwards or backwards by ones, from a given three-digit number  • identify the numbers before and after a given three-digit number  • describe the number before as 'one less than' and the number after as 'one more than' a given number (Communicating) | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | *Provide students with three-digit numeral cards eg 143, 144, 145, 146, 147). Ask students to sequence the cards in ascending order.* | | |
| WARM UP / DRILL | | **Buzz**  Students stand in a circle. Select a number to count forwards or backwards by. When a designated number is reached (forwards) or zero (backwards) is said the next child is “buzz” and has to sit down. Last child standing is the winner. This game can be played with skip counting as well. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | If Sam has 16 biscuits and she eats 5 of them, how many biscuits does she have left? | | |
| 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 | | Two large dice, numeral cards, hundreds chart, hundreds chart with missing values, before and after chart, three digit numeral cards. | | |

**TEACHING AND LEARNING EXPERIENCE**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| **Explicit Teaching**  Discuss strategies for finding ‘before’ and ‘after’ numbers and numbers missing in a sequence. Have students share ideas about the resources in the classroom that can be used, such as charts, rulers and numeral cards.  **One More/One Less**  Roll both dice and ask what is one less than? How do you know? Have the children sit in a circle and pass the dice around to familiarize themselves with the numbers shown. One child should roll both dice and say the number on Dice A. The next child should say the number that is one less or more as indicated by Dice B. Encourage children to respond quickly.  *Questioning*  What patterns do you use to find the numbers before or after?  What is the next number?  Which number is smallest/largest?  What number is worth more?  What number would come between these two numbers?  If I put 36 here on the number line where would I put 24?  What number is one more than?  What number is one less than? | LEARNING SEQUENCERemediationES1LEARNING SEQUENCES1 | **Beat the Clock**  Children practise filling in missing numbers on a hundreds square. When they have had enough practise they write the numbers one to one hundred in blank hundreds squares while you time them.  **Empty Number Lines**  Students are given an empty number line that only shows the numbers at the start and at the end of the number line. On the reverse side all numbers are shown. A friend pegs on a peg on a particular number. The student then guesses the number. Their friend can say if the number is higher or lower. Continue until they have guessed the number. Change rolls.  **King of the Circle – Number After**  Ask the student to sit in a circle. Select one student to stand behind a second student in the circle. Roll two large dice in the middle of the circle. Ask the two students to call out the number that comes after the number rolled. The first student to call out the number successfully moves on to stand behind the next student in the circle.  Repeat the activity for all students.  **Fan Numbers**  Direct the children with the following commands:  Show me 4  Show me 24, 48, 134, 589 etc  *Variation:*  Show me the number that comes after/before 6, 17, 42 etc  **Before and After**  Prepare “before and after” charts for each pair of students as shown in the diagram. Numerals are written down the centre column of the chart. These numerals should be within an appropriate range for the students. Students are given numeral cards to sort and place on the chart in either the “number-before” or “number-after” spaces to form number sequences.  (Use two and three digit numbers). |
| LEARNING SEQUENCEExtensionEarly S2 | **Mystery Arrow Number** (students will need to be able to count off the decade to complete this activity)  Students are given an almost blank 100s chart with three or four numbers left on the chart. The teacher tells students the number to play first eg, 35. The teacher then holds up an arrow. Students write the number that corresponds with the arrows direction where it belongs eg, 35 **↑** =25, 35 ←=24, 35 ↓=45 35 →=35 . When the teacher has shown a number and an arrow they ask a student for the answer. Then the process begins again at another number that was written on the chart. |
| EVALUATION & REFLECTION | Student engagement: Achievement of outcomes:  Resources: Follow up: |
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