**MATHEMATICS EARLY STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: 1 | WEEK: 8 | STRAND: NUMBER AND ALGEBRA | **SUB-STRAND:** **ADDITION AND SUBTRACTION** | **WORKING MATHEMATICALLY:** **MAe-1WM; MAe-2WM; MAe-3WM** |
| OUTCOMES: MAe-5NA | * MAe-1WM describes mathematical situations using everyday language, actions, materials and informal recordings
* MAe-2WM uses objects, actions, technology and/or trial and error to explore mathematical problems
* MAe-3WM uses concrete materials and/or pictorial representations to support conclusions
* MAe-5NA combines, separates and compares collections of objects, describes using everyday language, and records using informal methods
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| **CONTENT:**  | **Represent practical situations to model addition and sharing (ACMNA004)*** combine two or more groups of objects to model addition
* model subtraction by separating and taking away part of a group of objects
* use concrete materials or fingers to model and solve simple addition and subtraction problems
* compare two groups of objects to determine 'how many more'
* use visual representations of numbers to assist with addition and subtraction, eg ten frames
* create and recognise combinations for numbers to at least 10, eg 'How many more make 10?' CCT
* describe the action of combining, separating and comparing using everyday language, eg makes, joins, combines with, and, get, take away, how many more, all together LCCT
* explain or demonstrate how an answer was obtained (Communicating, Reasoning)
* apply strategies that have been demonstrated by other students (Problem Solving)
* investigate different methods of adding and subtracting used in various cultures, eg Aboriginal and Torres Strait Islander methods involving spatial patterns and reasoning, Asian counting tools such as the abacus (Communicating, Problem Solving) IUAHCA
* count forwards by ones to add and backwards by ones to subtract
* record addition and subtraction informally using drawings, words and [numerals](http://syllabus.bos.nsw.edu.au/glossary/mat/numeral/?ajax)L
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Students sit in a circle. Roll two large dice and ask: How many dots can you see altogether? Have students share the different ways they counted to find a total.
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| WARM UP / DRILL | * Students choose the number of times, from 1 to 5, they will clap their hands. The student then performs the activity. Encourage the class to listen carefully and count the number of claps. The class then repeats the same number of claps. Ask: How many times did the student clap? How many claps did the class do? How many claps were there altogether?
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | TENS activity covered as part of guided and independent activities as EAS is being addressed in this strand. |
| 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
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| RESOURCES |  Labelled containers, blocks, dice,  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Modelled:Hold up dotted tens frames and ask students to count what they can see. Model counting the top row and then the bottom. Students will be given real life opportunities to add two numbers together to make the whole.* Similarly real life subtraction opportunities will also be part of class routines.
* “Friends of ten” concept is explicitly taught and modelled using playing cards. Students each get a card and have to search through the others in the class to find a “friend of ten”
 | LEARNING SEQUENCEPre Foundation Skills | * **Emergent: Posting blocks**

Label containers with numerals 1 to 5, one numeral for each container. Instruct students to drop the correct number of blocks into each container as indicated by the label on the outside. As the students become proficient in the range 1-5, extend the activity to numerals 1-10. |
| LEARNING SEQUENCEES1 | * **Perceptual:** **Addition and Subtraction with Blocks**

One student stands out the front holding ten fingers in the air. Roll a die and place the corresponding number of blocks on the fingers of the student. As the addition process takes place model counting forward to get the total. Encourage students to keep the first number in their head when adding the second number thrown on the dice. Complete the same activity but with a student starting with ten blocks and doing subtraction. Model the process of taking from the group. Students record addition and subtraction informally using drawings, words and numerals.  |
| LEARNING SEQUENCEExtension S1 | * **Figurative: Addition Posting Box**

Students silently count while the teacher drops a collection of blocks into a box one at a time. Students record the total number of blocks, compare and discuss their totals with others. The teacher adds more blocks slowly (2 or 3). The students count silently and record the new total. Possible questions include: How did you find the total number of blocks? What number comes next? Did someone else use a different way? Students should be encouraged to hold the starting number in their head and count forwards from that number to determine the total. Students record addition and subtraction informally using drawings, words and numerals.  |
| **EVALUATION & REFLECTION** | Student engagement: Achievement of outcomes:Resources: Follow up: |

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