**MATHEMATICS EARLY STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: 1 | WEEK: 10 | 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) | * Ask students to use unifix blocks to build two towers, with a different number of blocks in each tower. Invite students to show/tell what is different about their two towers.
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| WARM UP / DRILL | * Using counters, have children investigate the numbers from 1-10 which can be put into pairs, e.g. four counters, two pairs; five counters, two pairs and one left over. Invite children to record their findings by drawing dots.
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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 | Sets of fence base boards, popsticks displaying numerals 1-10, unifix blocks, dice, counters, small objects for counting. |

**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: Fences**

Construct sets of fence base boards using the picture below and popsticks displaying numerals in the range 1 to 10 for each student or pair of students. Students match the numerals on the popsticks with the numerals written on the base boards. Extend this activity by constructing base boardsdisplaying blank fences. The students sequence the numbered paddle popsticks along the fence. |
| LEARNING SEQUENCEES1 | * **Perceptual:** **Diffy Towers**

Provide each pair of students with a die and a supply of Unifix blocks. Taking turns, students roll the die and make a tower with Unifix blocks. The towers are compared to determine the difference. The student with the larger number keeps the difference. The first to accumulate 10 blocks is the winner. Students describe a problem that they can do in their heads. Students draw a picture and describe how they worked out their problem. Students record addition and subtraction informally using drawings, words and numerals.  |
| LEARNING SEQUENCEExtension S1 | * **Figurative: Combinations of Ten #2**

Provide pairs of students with a number of counters/objects, e.g. 10 and two plates. Students work out and record the number of different ways they can each have some counters. Discuss how many more each student has. 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.