**MATHEMATICS EARLY STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 1 and 2 | STRAND: NUMBER AND ALGEBRA | **SUB-STRAND:** **ADDITION AND SUBTRACTION** | **WORKING MATHEMATICALLY:** **MAe-1WM; MAe-2WM; MAe-3WM** |
| OUTCOMES: MAe-5NA | **Combines, separates and compares collections of objects, describes using everyday language, and records using informal methods**  |
| **CONTENT:**  | Students: * Use concrete materials or fingers to model and solve simple addition and subtraction problems
* Use visual representations of numbers to assist with addition and subtraction, eg ten frames
* Model subtraction by separating and taking away part of a group of objects
* Count forwards by ones to add, and backwards by ones to subtract
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Circle Dice games: Children throw first one and then two dice and are observed to see if one-to-one matching is taking place when counting the dots. Where one-to-one matching is not yet taking place students will begin this lesson sequence at the Pre-Foundation level to reinforce this counting skill.
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| WARM UP / DRILL | * Counting games to reinforce one-to-one matching when counting forwards and backwards
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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 | Dominos, white boards and markers, IWB, dot dice, numeral dice, counters |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Students will be given real life opportunities to add two numbers together to make the whole.Egs * Our class has 12 girls today. Our class has 9 boys today. Today our class has 21 students
* Four children had apples for recess, and 6 children had bananas. Ten children had fruit for recess.
* **Similarly real life subtraction opportunities will also be part of class routines.**
* **Addition and subtraction activities using other concrete materials such as dot dice, dominos will be modelled on the IWB and in small group activities.**
* **Students are shown how to represent these examples on the IWB using pictures, words and numbers.**
 | LEARNING SEQUENCEPre Foundation Skills | * **Emergent:**

Students count dots on each side of a domino; they then attempt to recreate the dot patterns on a whiteboard that has been divided in two. Emphasis is on one to one matching when counting dots, and self-monitoring to ensure that the domino and the whiteboard dot patterns match. |
| LEARNING SEQUENCEES1 | * **Perceptual:**
* Students count each side of a domino and start to subitise rather than touching to count. Students then count the total number of dots on the domino recognising that the two smaller numbers add up to the whole.
* **Investigation**:
* Students use drawings, words and/or numbers to represent their investigation
* Students will investigate ways in which to represent the blank sides of some dominos. How will zero be represented in their drawings? What numeral is used to represent zero?
* Using white board representations of the dominos students reverse the process to model subtraction. Eg there are seven dots on my domino. If I rub out the three dots on one side I have four dots left.
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| LEARNING SEQUENCEExtension S1 | * **Figurative:**
* Students who can subitise domino dot patterns practise counting on from the higher of the two numbers rather than starting at one when totalling the dots on the domino.
* Students practice starting at the total number of dots on the domino and counting back to predict how many dots are on one side. Eg if my domino has seven dots altogether I count back, (Seven, six, five) and I have four dots on one side
* Further extension could include using nine dot dominoes, giving students practice at adding and subtracting across the decade.
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| **EVALUATION & REFLECTION** |  |