Primary Years  
Doonside PS  
Dharug Cluster

Introduction:

Lesson plan is attached which demonstrates the use of a ‘Thinking mat’ to deconstruct a word problem. The appropriate use of Metalanguage in Numeracy is not a stand-alone, it used throughout the lesson, modelled by the teacher as part of the expectation that the students will use the language to describe how they are solving a word problem.

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| **Stage 1 Multiplication and Division** | |
| **OUTCOME:**  Uses a range of mental strategies and concrete material for multiplication and division. | **KEY IDEAS:**  Rhythmic and skip counting, Model and use strategies for multiplication including equal groups and repeated addition, Record using drawings, numerals symbols and words. |
| **Knowledge and skills: Students learn about:**  -counting by ones, twos, fives and tens  -describing collections of objects as ‘rows of’ and ‘groups of’  -modelling multiplication as equal groups, equal rows or arrays | **Working mathematically: Students learn how to:**  Communicating WM1.3, applying strategies WM1.2, reasoning WM1.4, reflecting WM1.5  **Word Problem:** Riley has 2 trucks. He loads 5 boxes in each truck. How many boxes did he load? |
| **Activity:**  -Solving word problem using ‘Thinking mat’ incorporating Newman’s prompts and Super 6 Comprehension as tool  **-**applying strategies using groups and arrays  **Equipment:** ‘Thinking mat’, counters, problem sheets, pencils and markers, paper | **Metalanguage:** Refer to Metalanguage Posters  Teacher Models use of Metalanguage  Students use Metalanguage when describing ‘groups of’, ‘rows of’, ‘collection of’ |
| **Warm Up Activity:**  Students practise skip and rhythmic counting, counting by 2’s, 5’s, 10’s look at metalanguage, | **Modelled activity:**  Discuss word problem, teacher models the use of the “Thinking mat” to deconstruct word problem - |

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| **Tasks for each Level** | | | | | | | | | | | |
| **Skill Level** | Level 0  No use or understanding of how to form groups and or manipulate objects. | Level 1: NES1.3  Forming Equal Groups  -Uses perceptual counting and sharing to form groups of specified size  -Does not see the groups as composite units and counts each individual item. | | Level 2: NES1.3  Perceptual Multiples  -Uses groups or multiples in perceptual counting and sharing e.g. rhythmic or skip counting.  -Cannot deal with concealed items. | | Level 3: NS1.3  Figurative Units  -Uses equal grouping and counting without individual items visible  -Relies on perceptual markers to represent each group.  -Needs to represent the groups before determining total. | | Level 4: NS1.3  Repeated Abstract Units  -Uses composite units in repeated addition and subtraction using the unit a specified number of times.  -May use skip counting or a double count.  -May use fingers to keep track of the number of groups but as counting occurs.  - Is not dependent upon perceptual markers to represent groups. | | Level 5: NS2.3  Multiplication and Division as Operations  -coordinates two composite units as an operation, e.g. 6 times 3 is 18; 18÷6=3  -Uses multiplication and division as inverse operations flexibly in problem solving tasks. | |
| **Activity** |  | * Students **form equal groups** using counters and coloured sheets of paper. * Students use 1 to 1 count to find total. * Students complete sentence   e.g. 2 **groups of** 5 = 10. | | * Students use drawings to show **‘groups of’** and count using 1 to1 to count total. * Students complete sentence;   e.g. 2 **groups o**f 5 = 10. | | * Students use counters in array and coordinates count using rhythmic count. * Students use multiplication sign in a number sentence to represent an **array**. e.g. 2X5= 10 | | * Students use markers/fingers to coordinate count ;   3,6,9,12,.....   * Students check answer using repeated addition and write multiplication sentence found.   e.g 2X5 = 5+5=10 | | * Students use known number facts and number sentence to answer. Check answer using another method. | |
| **Reflection** | Students demonstrate;   * **appropriate use of Metalanguage** during Yarn Up when describing what they have learnt in the lesson; * **ability to show an example of equal groups** using concrete materials; * **complete an array** which shows 2 x 5 =10= 5 x 2 | | | | | | | | | | |
| **Teacher Observations of Student Peformance** | Level 0  Working Towards  Working At  Working Beyond | | Level 1:  Working Towards  Working At  Working Beyond | | Level 2  Working Towards  Working At  Working Beyond | | Level 3  Working Towards  Working At  Working Beyond | | Level 4  Working Towards  Working At  Working Beyond | | Level 5  Working Towards  Working At  Working Beyond |