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 0No use or understanding of how to form groups and or manipulate objects. | Level 1: NES1.3Forming 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: NES1.3Perceptual Multiples-Uses groups or multiples in perceptual counting and sharing e.g. rhythmic or skip counting.-Cannot deal with concealed items. | Level 3: NS1.3Figurative 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: NS1.3Repeated 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: NS2.3Multiplication 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.
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| **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
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| **Teacher Observations of Student Peformance** | Level 0Working TowardsWorking AtWorking Beyond | Level 1:Working TowardsWorking AtWorking Beyond | Level 2Working TowardsWorking AtWorking Beyond | Level 3Working TowardsWorking AtWorking Beyond | Level 4Working TowardsWorking AtWorking Beyond | Level 5Working TowardsWorking AtWorking Beyond |