**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK 3 | STRAND: Number and Algebra | **SUB-STRAND:** Multiplication and Division 1 | **WORKING MATHEMATICALLY:** WA2-1WM MA2-2WM MA2-3WM |
| OUTCOMES: | **Selects and uses appropriate mental or written strategies, or technology, to solve problems****Checks the accuracy of a statement and explains the reasoning used** |
| **CONTENT:**  | \* Use mental strategies to recall multiplication facts for multiples of 2,3,5 and 10\* Relate doubling to multiplication facts for multiples of 2, eg “double three is six” (reasoning) |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | WORKSHEET - Mathletics YR3, page 2, page 29 of Multiplication and Division student book.  |
| WARM UP / DRILL | * Skip counting by 2s, 3s, 5s and 10s
* I’ll give you a fact, you give me a fact: students stand at desks, teacher give a multiplication or division fact of 2,5 or 10. One by one, students give an associated fact – if they get it wrong they sit down. Last left standing wins.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | The farmer is taking ducks and sheep to the market. Altogether there are 15 heads and 52 legs in the truck. How many ducks and how many sheep are going to market? |
| 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
 |
| RESOURCES | IWB materials on doubling, hundreds chart to show 2’s, 5’s, 10’s and 3’s, worksheets on doubling, dice, concrete materials such as counters, Mathletics, Studyladder |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicit TeachingPractise reading multiplication tables aloud, eg one three is three, two threes are six…Rote learning of tables.* Model multiplication facts using rectangular arrays.
* Explicitly show how to use known facts to solve unknown facts, eg if they know 5x5=25, then by adding one more lot of 5 they can solve 6x5.

**Define and Reinforce*** Discuss and define the metalanguage used in the unit: double, two lots of, twice, half

**IWB*** Using IWB resources, introduce and demonstrate activities on the board that relate to and involve doubling. These include matching games and memory games.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Revise skip counting aloud 2’s, 5’s and 10’s
* Repeated addition, arrays, using concrete materials
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| LEARNING SEQUENCES2 | * Have students make models of multiplication facts using rectangular arrays.
* Times tables speed tests, games such as Round The World
* Roll 2 dice, try to get pairs. Add pairs, and describe as 2 x 3=6 double 3 =6

**Investigation*** Students work in small groups. A student chooses a small whole number and the next student doubles it. They take turns to keep doubling the number. A student checks the results with a calculator. In the next round they start with a different number. Ask: what did you notice? Did the pattern help with your calculations?
* Make models of doubling, eg 2,4,8,16,32… Discuss patterns, link to times tables.
* ASSESSMENT - Observation of students using making arrays, observation of how students complete worksheets and games. Assessment worksheet p. 37 teachers’ book, Mathletics.
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| LEARNING SEQUENCEExtension Late S2 or Early S3 | EXT – Double higher numbers, discuss mental strategies used to solve more complex tasks.  |
| **EVALUATION & REFLECTION** | **Student Engagement Achievement of Outcomes****Resources Follow up** |