**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 5 | STRAND: Number and Algebra | **SUB-STRAND:** Multiplication and Division 1 | **WORKING MATHEMATICALLY:** WA2-1WM MA2-2WM MA2-3WM |
| OUTCOMES: | **\* Uses mental and informal written strategies for multiplication and division****\* Selects and uses appropriate mental or written strategies or technology to solve problems** |
| **CONTENT:**  | \* Link multiplication and division facts using groups and arrays\* Pose multiplication problems and apply appropriate strategies to solve them |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | WORKSHEET - Mathletics YR3, page 30 of Multiplication and Division student book.  |
| WARM UP / DRILL | * Drill times tables that students are becoming familiar with
* Show an array and ask students to give you a fact, eg 3 x 2 = 6, 6 ÷ 2 = 3
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Each month Thomas collects 5 new football cards. How many does he collect in a year? |
| 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 inverse relationships and arrays, counters, Mathletics, Studyladder |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicit Teaching* Model multiplication facts using rectangular arrays. Demonstrate inverse relationships.
* Explicitly show how to use known multiplication facts to solve unknown division facts, eg if 4 x 2 = 8, then 8 ÷ 2 = 4

**Define and Reinforce*** Discuss and define the metalanguage used in the unit: rows, columns, shared, equals, array

**IWB*** Using IWB resources, introduce and demonstrate activities on the board that relate to and involve inverse relationships.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Make arrays to show repeated additions
* Match labels to arrays
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| LEARNING SEQUENCES2 | * Have students make models of multiplication facts using interlocking cubes. Build a staircase, eg with 2 blocks in the first step, 4 in the second, etc, to represent the multiplication facts for 2. Students use a 10 x 10 grid to record their answers.
* Students model the multiplication facts using rectangular arrays and record the associated inverse relationships

eg ★ ★ 3 x 2 = 6, 2 x 3 = 6, 6 ÷ 3 = 2, 6 ÷ 2 = 3 ★ ★ ★ ★ * Game on page 31 of Students’ Book, Mathletics, Multiplication and Division: Linking multiplication and division – matching game using cards.

**Investigation*** Give students a division sentence, ask them to make a model to match it.

ASSESSMENT – Observation, Assessment worksheet p. 44 teachers’ book, Mathletics. |
| LEARNING SEQUENCEExtension Late S2 or Early S3 | * EXT – Missing numerals in middle of number sentences, eg 18 ÷ \_\_\_\_ = 3
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| **EVALUATION & REFLECTION** | **Student engagement Achievement of outcomes****Resources Follow up** |