**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 15 | STRAND: Number and Algebra | **SUB-STRAND:** Multiplication and Division 2 | **WORKING MATHEMATICALLY:** MA2-1WM, MA2-2WM & MA2-3WM |
| OUTCOMES: MA2-6NA | Uses mental and informal written strategies for multiplication and division |
| **CONTENT:**  | **Recall**[**multiplication**](http://syllabus.bos.nsw.edu.au/glossary/mat/multiplication/?ajax) **facts up to 10 × 10 and related division facts (ACMNA075)**◾ Use the term 'product' to describe the result of multiplying two or more numbers, e.g. 'The product of 5 and 6 is 30'◾ Use mental strategies to build multiplication facts to at least 10 × 10, including: using the [commutative](http://syllabus.bos.nsw.edu.au/glossary/mat/commutative/?ajax) property of  multiplication, e.g. 7 × 9 = 9 × 7 ◾ Using known facts to work out unknown facts, e.g. 5 × 7 is 35, so 6 × 7 is 7 more, which is 42 |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | Worksheet or Tables test for the tables studied:<http://www.helpingwithmath.com/by_subject/multiplication/mul_tables_charts.htm> or from other sources such as:*Learning Times Tables* by Greg Porich, Burrabooks, 2007  |
| WARM UP / DRILL | * Times tables drill CD or chanting.
* IWB game or ‘Buzz’ for 4x, 6x, 7x, 8x, 9x where the product of the x tables is not spoken.
* Hundred chart for highlighting current table pattern on IWB or large chart
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | My four dogs were given three dog biscuits each. How many dog biscuits were given altogether?* The three hens at home laid five eggs each this week. How many eggs were laid altogether?
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| 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 | Numeral and symbol cards, 100 charts, array cards, dice, counters, clear counters, cotton balls, straws, grid paper, multiplication grids, Base 10 materials, Excel or Numbers for making times table grids on computer, boundary cards, and calculators. coolmath.com free online cool math lessonsmathisfun.com |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * **Explicitly communicate lesson outcomes and work quality.**
* **Teach and review**

Count by fours, sixes, sevens, eights and nines using skip counting* List what tables we know already and keep this as a display to add tales as we learn them
* 100 chart and counters to cover four times table or colour product
* **Define and Reinforce metalanguage used in the unit:**

 Multiply, multiplied by product, multiplication, multiplication facts, tens, ones, double, multiple, (factor, shared between, divide, divided by, division, halve, remainder, equals, is the same as, strategy, digit). | LEARNING SEQUENCERemediationS1 or Early S2 | * Count by twos, fives and tens using rhythmic counting and skip counting from zero
* Model and use equal groups of objects as a strategy for [multiplication](http://syllabus.bos.nsw.edu.au/glossary/mat/multiplication/?ajax)
* Use mental strategies to recall multiplication facts for multiples of two, three, five and ten
* Numeral cards, cotton wool and straws for “Hands off Math” where child is given two numbers and has to blow cotton ball to the correct product card
* Use mental strategies to multiply a one-digit number by a [multiple](http://syllabus.bos.nsw.edu.au/glossary/mat/multiple/?ajax) of 10
* Link multiplication and division facts using groups or [arrays](http://syllabus.bos.nsw.edu.au/glossary/mat/array/?ajax)
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| LEARNING SEQUENCES2 | **Whole Class Instruction and Modelled Activities** □ 100 chart and counters to cover six times table or colour product.  □ Repeat using nine times and show relationship with six times and three times □ Repeat with seven times and eight times* **Investigation**: Simple word problems using the times tables. Children can solve; and also make up problems for others to solve. Boundary cards can also be used: working in pairs one student makes some equal groups on a boundary card and the other student labels the groups in the vertical form using symbol and numeral cards.

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| 4 groups of |
| ⦁⦁ ⦁⦁⦁⦁ ⦁⦁ |

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[**http://www.mathplayground.com/puzzle\_pics\_multiplication.html**](http://www.mathplayground.com/puzzle_pics_multiplication.html)**Assessment –** Using a spreadsheet or grid paper, students independently complete a times table chart |
| LEARNING SEQUENCEExtension Late S2 or Early S3 | * Use mental and written strategies to multiply three- and four-digit numbers by one-digit numbers
* Apply appropriate mental and written strategies, and digital technologies, to solve multiplication word problems
* Record the strategy used to solve multiplication word problems
* Use selected words to describe each step of the solution process (Communicating, Problem Solving)
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| **EVALUATION & REFLECTION** | **Student engagement:** **Achievement of Outcomes:****Resources:** **Follow up:** |