**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TERM: | WEEK: 13 | STRAND: Number and Algebra | **SUB-STRAND:**  Multiplication and Division 2 | **WORKING MATHEMATICALLY:**  MA1-1WM, MA1-2WM, MA1-3WM |
| OUTCOMES: | | A student:   * MA1-6NA - uses a range of mental strategies and concrete materials for multiplication and division | | |
| **CONTENT:** | | **Represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032)**   * model division by sharing a collection of objects equally into a given number of groups, and by sharing equally into a given number of rows or columns in an array, eg determine the number each person receives when 10 objects are shared between two people * describe the part left over when a collection cannot be shared equally into a given number of groups/rows/columns (Communicating, Problem Solving, Reasoning) * model division by sharing a collection of objects into groups of a given size, and by arranging it into rows or columns of a given size in an array, eg determine the number of columns in an array when 20 objects are arranged into rows of four * describe the part left over when a collection cannot be distributed equally using the given group/row/column size, eg when 14 objects are arranged into rows of five, there are two rows of five and four objects left over (Communicating, Problem Solving, Reasoning) | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Anecdotal notes following counting games, and group work to identify those who can describe collections of objects as 'groups of', 'rows of' and 'columns of' (Communicating) | | |
| WARM UP / DRILL | | * Call out a number and have the students stand in rows of that number. Any students left standing nominate the next number. * Skip count daily using IWB hundreds chart. * Count out objects being handed out by twos. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | What is the quickest way to count a handful of counters? Is there more than one method? | | |
| 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 | | Individual hundreds charts, IWB hundreds chart, collections of a variety of objects such as counters, MTSonline Powerpoints for multiplication and division, flipcharts and IWB activities ([www.schoolcentre.com.au](https://staffowa.det.nsw.edu.au/owa/redir.aspx?C=Oiv59ICpmEeSCKQy9BQA3nLSw8mjgtFITM36YJxh3m-0Bt6_HAODC5PMMakSH27Nr3fdL95aNkY.&URL=http%3a%2f%2fwww.schoolcentre.com.au) - subscription $11 per teacher), Maths-in-a-Box 1 (Cambridge University Press 2007) Cards 56-68. | | |

**TEACHING AND LEARNING EXPERIENCES**

|  |  |  |
| --- | --- | --- |
| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * **Reasoning and communicating -** Present 12 objects. Discuss the easiest way to display the objects so that they can be counted easily, ie repeated addition, skip counting * **Define and reinforce metalanguage used in the unit,** ie row, column,sharing, collection, fair share | LEARNING SEQUENCERemediationES1 | * **Rows and columns-** Use egg cartons and counters to show 2 rows of 6 and 6 rows of 2, discuss number of rows and columns and the number, using MTSonline Powerpoint for counting by 2s, 5s, 10s. |
| LEARNING SEQUENCES1 | **Problem Solving and communicating-**   * Place students into 5 groups; distribute cards (select from Maths-in-a-Box 1 cards 56-68) and resources to groups; rotate through activities, discussing practical representations of arrays, why the objects are grouped this way, how it makes counting easier; representing information in an array and equation to describe * **Investigate**   Discuss practical representations where there are parts left over when equally sharing. Represent as remainders in division and multiplication number sentences    **Assessmen**t Children can effectively count a pile of counters by twos ,fives and tens.  **Investigation**: What is the quickest method of counting a large group of counters? |
| LEARNING SEQUENCEExtensionLate stage 1 | **Extension**   * Arrays in the environment- students explore the environment, photographing objects found to be in an array and write equations to describe, including the part leftover. |
| **EVALUATION & REFLECTION** | Observe student communication in discussion of card activities and student record of learning  **Student engagement Achievement of outcomes**  **Resources Follow up** |