**36MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 5 | STRAND:NUMBER and ALGEBRA | **SUB-STRAND:**  FRACTIONS AND DECIMALS 1 | **WORKING MATHEMATICALLY:**  MA2-1WM MA2-3WM |
| OUTCOMES: MA2-7NA | | Represents, models and compares commonly used fractions and decimals | | |
| **CONTENT:** | | **Count by quarters, halves and thirds, including with mixed [numerals](http://syllabus.bos.nsw.edu.au/glossary/mat/numeral/?ajax" \t "_blank" \o "Click for more information about 'numerals'); locate and represent these fractions on a [number line](http://syllabus.bos.nsw.edu.au/glossary/mat/number-line/?ajax" \t "_blank" \o "Click for more information about 'number line') (ACMNA078)**   * compare unit fractions using diagrams and number lines and by referring to the denominator, eg one eighth is less than a half | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * **Number Between:**  Fraction In- Between is a good game for individuals and pairs.   The teacher writes a pair of numbers far apart on the board (smallest on the left) and calls on a student to write a fraction in between the pair. If a correct answer is given (it does not have to be the midpoint), another student is called on to write another fraction between the new number and one of the earlier endpoints | | |
| WARM UP / DRILL | | * **Counting**   Skip counting by ¼ ½ 1/3 using a number line ensuring it extends beyond one.   * **Sharing**   Students form groups of 8 and share a slice of ‘bread’ (picture) so that each person gets the same amount and there is none left over. | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Mehar needed help painting a huge mural on the school brick walls. Omar said he would paint ¾ of a wall. Martha could only paint 2/4 of one and Sonia painted ½ . How many walls would they have painted in total? | | |
| 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 | | Number line showing fractions less than one whole picture of slice of bread  Fractions board die  collection of objects eg counters, blocks, pegs. fractions written on card 1/8 to 8/8  IWB clothes line | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * **Explicitly communicate lesson outcome** * *compare unit fractions using diagrams and number lines and by referring to the denominator, e.g one eighth is less than a half* * Revise terms numerator and denominator. * Place 9 apple halves on the mat. Ask students to write the number of whole apples that can be made and record it as a mixed numeral. * Repeat with 7 apple quarters. * Play class activity: IWB   Fractions on a Number Line – [www.studyladder.com.au](http://www.studyladder.com.au)   * Have students correctly label numerator and denominator. * Explain role of each. * Divide class into groups to complete activities, then report back to whole class. | LEARNING SEQUENCERemediationS1 or Early S2 | * **Colour the Fraction (halves, quarters, fifths ,eighths and tenths)**   Each student takes it in turns to roll the die and colour in the equivalent fraction on the gameboard.  Record each roll of the die throughout the game.  • Each row in the game board is equal to one whole.  • The first student to colour the entire game board is the winner.  • At the completion of the game, add the fractions are recorded, to ensure they equal to at least five. |
| LEARNING SEQUENCES2 | * **Clothes Line**   The teacher provides cards each naming a different fraction with the same denominator. Students choose a card and peg it on a string number line in the appropriate place.  Students should also explain the relationship between the value of a unit fraction and its denominator.   * **Cover Up**   Students use a collection of objects eg counters, blocks, pegs. One student selects a number of objects and covers up half/quarter/eighth of the objects with their hand or piece of cardboard. Their partner is then asked:  *How many counters are under my hand?*  *How many counters are there altogether?* |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * Converting Improper Fractions to Mixed Numbers –   [www.studyladder.com.au](http://www.studyladder.com.au)  http://www.studyladder.com.au/learn/mathematics/activity/ 4512?retUrl=%2Flearn%2Fmathematics%2Ftopic%2Ffractions-and-decimals-444 |
| **EVALUATION & REFLECTION** | **Student Engagement: Resources:**  **Achievement of Outcomes: Follow-up:** |

* All assessment tasks should be written in **red** and planning should be based around developing the skills to complete that task.
* Assessment rubrics or marking scale should be considered.