**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | STRAND: Number and Algebra | **SUB-STRAND:** **Fractions and Decimals 1** | **WORKING MATHEMATICALLY:** **MA3-1WM, MA3-2WM, MA3-3WM** |
| OUTCOMES: MA3-7NA | **Compares, orders and calculates with fractions, decimals and percentages.** |
| **CONTENT:**  | **Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator*** Identify and describe 'proper fractions' as fractions in which the numerator is less than the denominator
* Identify and describe 'improper fractions' as fractions in which the numerator is greater than the denominator
* Model and represent strategies, including using diagrams, to add proper fractions with the same denominator, where the result may be a mixed numeral
* Subtract a proper fraction from another proper fraction with the same denominator
* Model and represent strategies, including using diagrams, to add mixed numerals with the same denominator
* Solve word problems that involve addition and subtraction of fractions with the same denominator
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Worksheet- Students identify what fractions are proper and improper, then add and subtract fractions
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| WARM UP / DRILL | * Ipad app- “Quick Fractions”
* Fraction flash cards- students have to say which fraction is >, < or =
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | * *Oliver and his brother Angus both love pizza.  They order a large one to share.  Oliver ate 3/6 of the pizza and Angus ate 2/6 of it.  What fraction of the pizza is left?*
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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 | Ipad’s, flash cards, playing cards, bingo cards, m&m’s/counters/beads  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| FRACTION TYPESThere are 3 different types of fractions:1. Proper Fractions Numerator < Denominator2. Improper Fractions Numerator > Denominator or Numerator = Denominator3. Mixed fractions have a whole number plus a fractionWhat is a Fraction?<http://www.jamit.com.au/htmlFolder/FRAC1001.html> • Identify fraction Parts: Numerator and DenominatorModel and represent strategies to add proper fractions with the same denominatorModel and represent a whole number added to a proper fractioneg. 4 + ⅔ =4 ⅔Model and represent adding mixed numerals with the same denominatoreg. 2 ⅛ + 1 ⅞ = 4Maths fraction Word Problems– Scroll down to ‘Fraction Challenge Problems’<http://www.mathplayground.com/wpdatabase/wpindex.html>  | LEARNING SEQUENCERemediationS2 or Early S3 | * Students sort flash cards into categories of “proper fractions’ and “improper fractions”
* Students group together cards with the same denominator
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| LEARNING SEQUENCES3 | * Playing card game: players draw two cards (a numerator and denominator) and place the fraction on a number line. If players draw out two cards with the same dominator they can add them together, who ever adds the most cards together wins. **Observation**
* Fraction Bingo: players receive a bingo card with a variety of fractions written on it. The teacher calls out random fractions and if that fraction has the same dominator as one on the student’s card they add the fractions then place a counter over the fraction.
* Group students and provide each group with a groups of small coloured beads etc./a packet of Smarties/M&M’s etc.  Ask the students to count the number of items in their group/pack and write each colour as a decimal. See if you can add group colours together using decimal notation.
* Investigation: Here is a picnic that Petros and Michael are going to share equally. (use photo in resources)
* Macintosh HD:Users:jakeross:Desktop:picnic.jpg
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| LEARNING SEQUENCEExtension Early S4 | * **Converting Improper Fractions to Mixed Numbers**

– StudyLadder<http://www.studyladder.com.au/learn/mathematics/activity/4512?retUrl=%2Flearn%2Fmathematics%2Ftopic%2Ffractions-and-decimals-444> |
| **EVALUATION & REFLECTION** |  |

* 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.