**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 6 | STRAND:NUMBER and ALGEBRA | **SUB-STRAND:**  FRACTIONS AND DECIMALS 2 | **WORKING MATHEMATICALLY:**  MA2-1WM MA2-3WM |
| OUTCOMES: MA2-7NA | | **Represents, models and compares commonly used fractions and decimals** | | |
| **CONTENT:** | | **Investigate [equivalent fractions](http://syllabus.bos.nsw.edu.au/glossary/mat/equivalent-fractions/?ajax" \t "_blank" \o "Click for more information about 'equivalent fractions') used in contexts (ACMNA077)**   * model, compare and represent [fractions](http://syllabus.bos.nsw.edu.au/glossary/mat/fraction/?ajax" \t "_blank" \o "Click for more information about 'fractions') with [denominators](http://syllabus.bos.nsw.edu.au/glossary/mat/denominator/?ajax" \t "_blank" \o "Click for more information about 'denominators') of 2, 4 and 8; 3 and 6; and 5, 10 and 100 | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Have students order fractions with the same denominator. Students match names of fractions to a drawn diagram. * **Pre Assessment**   Using 8 connected unifix cubes can you split it into halves, quarters and eighths. How many different ways can you show the fraction xx ?  This assessment allows the students to show their understanding of fractions in a variety of ways. | | |
| WARM UP / DRILL | | * **IWB activity** [www.studyladder.com.au](http://www.studyladder.com.au) * **Modelling equivalent fractions** * **Make 10** Provide students with scoring sheets and the teacher require one die, 1-6 or 0-9.   1. The aim is to score ten or as close to it as possible without “busting” (going past ten).  2. The teacher rolls the die and announces the number. The students may choose to divide   |  | | --- | |  | | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | When cooking a dumpling for Chinese New Year, Kim needed to add 6/8 cup of milk. The measuring cup he was using only showed quarters.How many quarters of a cup of milk should he add? | | |
| 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 a paper streamer approximately 90 cm long  stapler for each group 4 strips of different coloured paper for each student, all equal in length  Question written on board 8 unifix cubes each  16 counters each Dice | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * Explicitly communicate lesson outcome * *To investigate [equivalent fractions](http://syllabus.bos.nsw.edu.au/glossary/mat/equivalent-fractions/?ajax" \t "_blank" \o "Click for more information about 'equivalent fractions')* * Teach and review concept of equivalence equal fractions * Check understanding of terms equal and equivalent. * IWB use the fraction mat to show how many ¼ = ½ * How many fifths =1/10 etc * Whole class activity   Equivalent fractions activity  <http://www.mathplayground.com/visual_fractions.html>   * Check understanding of metalanguage: whole part equal part half quarter eighth third fifth one-third one-fifth fraction denominator numerator mixed numeral whole number fractional part number line | LEARNING SEQUENCERemediationS1 or Early S2 | * Play the game **Fraction pie**   A die marked with ½ ¼ 1/8 2/4 4/8 1 or 1/5 2/10 2/5 4/10 5/10 ½ 1  Students roll the die in order to complete a circular pie shape.  They can use equivalent fractions to complete the shape.   * **Counters**   As a whole class demonstrate equivalent fractions using 16 counters, Pose the questions  Can I find ½ of  of 16 (8/16) of 8 (4/8) of 4 (2/4)  Repeat this for ¼ |
| LEARNING SEQUENCES2 | Streamer Fractions Write the fractions one-half ( ), one-quarter ( ) and one-eighth ( ) on the board. Hold up a paper streamer approximately 90 cm long. Using this paper streamer, how could you make one of these fractions? Allow the students some time to think about the question. Which of these fractions will be the easiest to make? Why? Focus the questions on: How do you know that you have one-half (or one-quarter or one-eighth)?   * **Fractions Flip chart**   Each student has 4 strips of different coloured paper, all equal in length. Each sheet is folded into 2 or 4 or 8  Cut along the fold lines, but stop 1cm before the edge. Staple one uncut sheet on top with each sheet below.  Lift one-quarter to see how many eigths are underneath.   * **Pikelet sharing problem**   How would we share 5 pikelets between 4 people? Can you draw your answer? |
| LEARNING SEQUENCEExtensionLate S2 or Early S3 | * **Equivalent fractions activity**   <http://www.mathplayground.com/visual_fractions.html>   * **Investigations**   The answer is ½. What might the question be? Give at least 10 examples.  Is one eighth smaller or larger than one quarter? Explain your answer with examples. |
| **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.