**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 6 | STRAND: Number and Algebra | **SUB-STRAND:** Fractions and Decimals | **WORKING MATHEMATICALLY:** MA3-1WM, MA3-2WM & MA3-3WM |
| OUTCOMES: MA3-7NA | | * **Compares, orders and calculates with fractions, decimals and percentages.** | | |
| **CONTENT:** | | **Compare fractions with related denominators and locate and represent them on a number line.**   * Model, compare and represent fractions with denominator of 2,3,4,5,6,8,10,12 and 100 of a whole object, a whole shape and a collection of shapes. * Compare and order simple fractions with related denominators using strategies such as denominators, the number line, or equivalent fractions. * Compare the relative size of fractions drawn on the same diagram. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * [*www.primaryresources.co.uk/maths/.../****fraction****\_****wall****\_and\_questions.doc*](http://www.primaryresources.co.uk/maths/.../fraction_wall_and_questions.doc) * Have student complete the questions attached to the wall. * **Alternatively give students a blank wall to label.** [www.leicestershire.gov.uk/**fraction**\_**wall**\_blank.doc](http://www.leicestershire.gov.uk/fraction_wall_blank.doc) | | |
| WARM UP / DRILL | | * Play an interactive game as a class on the board <http://www.fractionmonkeys.co.uk/activity/> * Play an interactive game as a class on the board <http://pbskids.org/cyberchase/math-games/melvins-make-match/> | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | If John ate 3/12 of the pizza, Peter ate 2/12 and Michelle ate 4/12, how much of the pizza did they eat altogether?If Sam ate 1/3 of the cake, Jan ate 2/12 and Jenny ate ¼, how much of the cake did they eat? How much of the cake is still left? | | |
| 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 | |  | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * **Work through the short video –**  <https://learnzillion.com/lessons/1727-plot-a-unit-fraction-on-a-number-line>  * **Establish definition of a fraction – dividing into equal parts.** * Provide 2 circles to each child. Fold the first into 1/2 and 1/4 ( and 1/8). * With 2nd circle try folding into 1/3 and 1/6. Discuss findings. * Use terms Numerator and Denominator * **Language** * Students should be able to communicate using the following language: whole, equal parts, half, quarter, eighth, third, sixth, **twelfth**, fifth, tenth, hundredth, **thousandth**, **one-thousandth**, fraction, numerator, denominator, mixed numeral, whole number, number line, **proper fraction**, **improper fraction**. * To look at how different fractions with different denominators can be the same look at this number line * [**http://www.mathsisfun.com/numbers/fraction-number-line.html**](http://www.mathsisfun.com/numbers/fraction-number-line.html) * Discuss the idea of sharing and what happens when there are more people to share with? * Work through the beginning of the following page <http://www.mathgoodies.com/lessons/fractions/compare.html> | LEARNING SEQUENCELate Stage 2 Early Stage 3 | * In pairs play the following game. Each stage of the game gets a little harder.   [www.numeracyhelper.com/**fractionwalls**](http://www.numeracyhelper.com/fractionwalls)   * Play on online game where students have to place the arrow in the correct place on a labelled number line. <https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-fractions-topic/cc-3rd-fractions-meaning/e/fractions_on_the_number_line_1> * <http://www.kidsolr.com/math/fractions.html> * Studyladder – Green level – Modelling equivalent fractions * Card Game   Each player turns over 2 cards. The smaller number is the numerator and the larger number is the denominator. Children must name the fraction and draw a picture to represent it.   * Visualising fractions   <http://www.mathwarehouse.com/fractions/manipulatives/visual-fractions.php> |
| LEARNING SEQUENCES3 | * Students work in a small group and use the metre ruler to draw a number line. The number line needs to show each fraction. Challenge the students to add fractions to the top of the number line, for instance ½, ¼, etc. * Students can work in pairs to play the following game   <http://www.k-5mathteachingresources.com/support-files/fractionwallgame.pdf>   * Online game where students have to place the fraction on a blank number line <http://www.sheppardsoftware.com/mathgames/fractions/AnimalRescueAdvancedFractionsNumberLineGame.htm> * Fun game where the fraction has to be placed in the correct bucket <http://www.mathwarehouse.com/games/our-games/fraction-games/fraction-balls-1/play-fraction-balls-1/> * Comparing fractions <http://www.amblesideprimary.com/ambleweb/mentalmaths/fractotron.html> * Equivalent fractions   <http://pbskids.org/cyberchase/math-games/melvins-make-match/>  <http://www.mathplayground.com/Triplets/Triplets.html>   * Investigation - Students respond to a scenario and record a variety of responses. 1. The teacher poses the question: ‘The answer to a problem is one and a half, what might the question be?’ 2. Students record a variety of questions, including word problems, number sentences and questions that involve more than one operation. 3. They include the four operations in their questions. * ASSESSMENT – collect the investigation activity and assess the student’s answers and understanding of fractions. |

* 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.

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * As a class watch the you-tube video that explains how to compare fractions <https://www.khanacademy.org/math/cc-third-grade-math/cc-3rd-fractions-topic/cc-3rd-comparing-fractions/v/comparing-fractions-of-different-wholes> | LEARNING SEQUENCELate Stage 3Early Stage 4 | * Students have to be able to drag and drop fractions onto a blank number line. This activity has equivalent fractions. <http://www.bgfl.org/custom/resources_ftp/client_ftp/ks2/maths/fractions/level4.htm> * Students have to be able to visualise the fraction as Granny hides in the bush. Fun activity <http://www.visualfractions.com/FindGrammy/findgrammy.html>   <http://www.visualfractions.com/FindGrampy/findgrampy.html>   * Equivalent fractions   <http://mathematics.hellam.net/maths2000/fraction1.html>  <http://www.mathplayground.com/FractionGame/FractionGame.html>   * This is a challenging activity where the fractions have to be placed in order from smallest to largest with different denominators   <http://downloads.bbc.co.uk/bitesize/ks2/maths/flash/fractions.swf> |
| EVALUATION & REFLECTION | **Student Engagement: Resources:**  **Achievement of Outcomes: Follow-up:** |