**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 1  | 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 and order common [unit fractions](http://syllabus.bos.nsw.edu.au/glossary/mat/unit-fraction/?ajax" \t "_blank" \o "Click for more information about 'unit fractions') and locate and represent them 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') (ACMNA102)**\* Place fractions with denominators of 2, 3, 4, 5, 6, 8,10 and 12 on a number line between 0 and 1.\* compare and order unit with denominators of 2, 3, 4, 5, 6, 8, 10, 12 and 100\* Compare the relative value of unit fractions by placing them on a number line between 0 and 1\* Investigate and explain the relationship between the value of a unit fraction and its denominator |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Give students a number line 0-1 and ask them to place the fractions all with a numerator of 1 and the denominator that need to be covered.
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| WARM UP / DRILL | * Skip counting by 2,3,4,5,6,7,8,9,10,11,12. Make it into a game eg Buzz off
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Lauren is working at Eagle Boys Pizza and the customer has asked for the pizza to have 12 equal slices. How can Lauren cut the pizza into 12 equal slices.  |
| 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 | Streamers, Number Cards, Number Cards Advanced, IWB Cutting, IWB Number line, Circles, String |

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Related Fractions: Hold up a piece of paper and a streamer, ask students to come out and make certain fractions relating to all denominators being covered. Pose the question to students which is the easiest fraction to make.* Explain to students using the IWB titled (Cutting fractions) how the lower the denominator the more less parts there are to a fraction so the bigger the part will be.
* Demonstrate to students how to place fractions on a number line use the IWB file titled (number line). Students will need to come out and place the fractions in order from 0-1.
 | LEARNING SEQUENCERemediationS2 or Early S3 |  |
| LEARNING SEQUENCES3 | * Streamers: Give students 1m streamers and ask them to divide them into 1/12,1/ 10,1/ 8,1/ 6, 1/5,1/4,1/ 3 and 1/2 with these numbers being the denominator. Ask students to explain the relationship with what happens to the streamer as the number gets smaller. Students glue 1 part of each into their book or onto paper.
* Clothes Line: Students are given a set of number cards; in pairs they need to place these on a clothes line in the order decided 0-1. (See file titled clothes line). This is an activity that allows students to place fractions in order and gain an understanding of ordering fractions.
* Pizza: Students divide circles into different fractions that is given by the teacher to gain a better understand that the larger the denominator the more parts there are in the fraction. They can glue these into their books or onto a sheet of paper.
* Worksheet: Students complete worksheet on fractions that is designed to reinforce learning.
* Assessment Task: Present individual students with a set of number cards (the ones used in the clothes line activity will be fine) and ask them to place them in order from 0-1.
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| LEARNING SEQUENCEExtension Early S4 | * Clothes Line: Students are given a set of number cards, in pairs they need to place these on a clothes line in the order decided 0-2. These contain equivalent fractions and mixed numerals. (See file titled clothes line high).
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| **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.