**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 15 | STRAND: Number and Algebra | **SUB-STRAND:** Fractions and Decimals | **WORKING MATHEMATICALLY:** MA2-1WM, MA2-3WM |
| OUTCOMES: MA2-7NA | **\* Represents, models and compares commonly used fractions and decimals**  |
| **CONTENT:**  | **Recognise that the [place value](http://syllabus.bos.nsw.edu.au/glossary/mat/place-value/?ajax" \t "_blank" \o "Click for more information about 'place value') system can be extended to tenths and hundredths, and make connections between fractions and [decimal](http://syllabus.bos.nsw.edu.au/glossary/mat/decimal/?ajax" \t "_blank" \o "Click for more information about 'decimal') notation** \* place decimals of up to two decimal places on a number line, eg place 0.5, 0.25, 0.75 on a number line.\* round a number with one or two decimal places. |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Place the following decimals on the board 0.95, 0.2, 0.66, 0.8 1.00 and ask students to round from highest to lowest.
* Ask students to round these to one decimal place 0.59, 0.22, 0.56, 0.89, 0.51.
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| WARM UP / DRILL | * Buzz off skip counting by 2,3,4,5,6,10,11
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Kate is working at Woolworths and her register has stopped working. She needs to work out if she should round up or down with when giving her customer change. The change the customer is meant to get is $0.48. Should she round up or down?* Lauren is at home and has been asked to place her mum’s dockets in order from highest to lowest. The dockets read 0.55, 0.98, 0.22, 0.64, 0.87. What is the correct order?
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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 | IWB (Ordering), IWB (Rounding), Clothes line Low, Clothes line, Clothes line high, Decimal Sorting, Decimal Sorting Low, Decimal Sorting High, Worksheet (Rounding). Assessment Cards, String, Pegs, Round Up and Down |

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Place a 1 metre strip of cardboard to a wall. Inform students that it is one metre long . Ask selected students to mark where they think 0.5 would be. Place initials near where they mark. Ask other students to place a line where they believe 0.25 would be and initial. Ask students how you know where to place theses lines. Develop discussion around the topic. * Explain to students that decimals are place in order according the first number on the left of the page the higher that number the large the closer the decimal is to a who number. Use the IWB file called Ordering to help model this.
* Model to students how to round a decimal, explain the concept of one and two decimal places. Students need to be explained if the number is 5 or above the number on the left goes up if it is 4 or below it the number on the left stays the same. Use the IWB file titled Rounding to model this. Demonstrate how to round up and down to a whole number.
 | LEARNING SEQUENCERemediationS1 or Early S2 | * Clothes Line: Students have a set of decimal cards and need to place the decimals in the correct order highest to lowest with one place cards starting with zero in the whole number space.
* Decimal Ordering: Students order decimals from highest to lowest as a cut and paste activity with one decimal place cards starting with zero in the whole number space.
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| LEARNING SEQUENCES2 | * Investigation - Clothes Line: Students have a set of decimal cards and need to place the decimals in the correct order highest to lowest with one and two decimal place cards starting with zero in the whole number space on a piece of string using pegs.
* Decimal Sorting: Prepare one set of cards and in pairs students sort numbers that would round down/up to a whole number. This can be glued onto paper or into books. Students will need to write the title on the page Round down or Round Up
* Decimal Ordering: Students order decimals from highest to lowest as a cut and paste activity with one and two decimal place cards starting with zero in the whole number space.
* Work Sheet: Rounding Students complete worksheet that requires them to round decimals to whole numbers.
* Biggest and Smallest: Students come out and select 3 number cards out of a mystery bag. They need to make the largest decimal possible, the smallest decimal possible and round both these decimals to the nearest whole number.
* Ask Students:

What is a decimal?How does the position of the numbers change the value of a decimal? |
| LEARNING SEQUENCEExtension Late S2 or Early S3 | * Clothes Line: Students have a set of decimal cards and need to place the decimals in the correct order highest to lowest with one and two decimal place cards starting with a mixture of zero and whole numbers.
* Decimal Ordering: Students order decimals from highest to lowest as a cut and paste activity with one and two decimal place cards starting with zero and whole numbers in the whole number space.
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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.