**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 12 | STRAND: Number and Algebra | **SUB-STRAND:** Fraction 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 systems can be extended to tenths and hundredths, and make connections between fractions and decimal notation.*** Identify and interpret the everyday use of fractions and decimals, such as those in advertisements (Communicating, Problem Solving)
* Apply knowledge of hundredths to represent amounts of money in decimal form, eg five dollars and 35 cents is 5 and 35 hundredths (Communicating)
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Ask students where decimal are seen in “real life” situations. Have students record a decimal number they might see everyday and state the place value of the ones, tenths and hundredths.
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| WARM UP / DRILL | * **Two decimal places game:** Teacher makes a die writing a decimal (between 0 to 1) to two decimal places on each face. Students use a 10x10 grid as a score sheet. Students take turns to throw the die and colour the appropriate section on their grid. The winner is the first player to colour their 10X10 grid completely.
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Newman’s Problem Investigation: Ellen wanted to buy the following items: A DVD player for $49.95, a DVD holder for $19.95 and a personal stereo for $21.95. Does Ellen have enough money to buy all three items if she has $90? |
| 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 |  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * **Decimals in real life**

Provide examples and pictures of decimals in everyday situations such as supermarket catalogues, receipts and petrol prices. Model and practise reading and writing decimals from everyday situations.* **Money**

Display and discuss that the currency system in Australia is based on tenths and hundredths. Introduce a one cent coin as being equal to a hundredth and a 10 cent coin being equal to a tenth. Model making amounts of money using one cent coins and ten cent coins (instead of using longs and ones). \*You may need to create one cent coins for students to use.* **Ordering Everyday Decimals**

Provide the price of three items from a supermarket catalogue. Have students use their knowledge of place value to order from smallest to greatest. | LEARNING SEQUENCERemediationS1 or Early S2 | * **Numeral Expanders and Base 10 Blocks:** Practice writing numbers to 2 decimal places seen in catalogues on a numeral expander. Ask students questions such as: How many tenths?” “How many hundredths?” Ask students to use base 10 blocks to represent the decimal numbers.
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| LEARNING SEQUENCES2 |  |
| LEARNING SEQUENCES2 | * **Investigation: Exploring Everyday Decimals:** In pairs provide students with a supermarket catalogue to explore. Ask students to locate prices that meet a certain criteria. eg, they have 5 tenths of a dollar, have more than 76 hundredths of a dollar, are more than $5.00 etc. Have students select some items they would like to buy and order from smallest to largest and reverse.
* **Worksheet:** [**Decimal Shopping Trolley**](DecimalsShoppingwithdecimalsactivity.pdf)
* **Tenths of a dollar:** Students are asked to count various groups of one cent coins. Students state how many hundredths of a dollar in each group. Ask students if they can make the same number of hundredths using fewer coins. Encourage students to swap groups of ten one cents coins for ten cent coins. Ask the students how many ‘tenths’ of a dollar they have in each group.
* **Money**: Students structure various amounts of money with one cent coins and then show the same amount with ten cent and one cent coins – eg 30 hundredths of a dollar = 3 tenths of a dollar. Students can record their results pictorially and write a caption for their drawing.
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| LEARNING SEQUENCEExtension Late S2 or Early S3 | * **Adding money:** Using supermarket catalogues, students choose three items and add the amount of the items together. Have them work out the change from a rounded amount such as $20. Have students select items they could buy if they had $10 to spend. Students can cut out and paste their catalogue items.
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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.