**MATHEMATICS ES1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 2 | STRAND: Number and Algebra | **SUB-STRAND:** Fractions and Decimals | **WORKING MATHEMATICALLY:** MAE-7NA MAE-1WM  |
| OUTCOMES: Mae-3WM | Uses concrete materials and/or pictorial representations to support conclusions |
| **CONTENT:**  | **Establish the concept of one –half*** Recognise that halves are two equal parts
* Explain the reason for dividing an object in a particular way (Communicating , Reasoning)
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Practical: Students colour a paper square to resemble a piece of bread spread with jam or peanut butter etc. Students then fold and cut their squares in half, and glue them onto a paper plate. How many ways can you do it? Are the pieces the same size? What shapes do you get? How do you know it is a half? Give an example of when you might need to divide something into a half.
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| WARM UP / DRILL | * Provide students with concrete materials that can be divided equally in order for them to visually see how they can be evenly divided (in half). Items such as: oranges, play dough and simple 2D shapes, unfix cubes, counters, egg cartons etc. Demonstrate to students how to make a half by cutting/dividing these objects.
* IWB: U –Tube: Halves. Rainforest maths. www.cooolmath-games.com
* Read book ‘Give me half’ by Stuart Murphy. (Siblings fight over pizza and eventually decide to split it into half)
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | If there were 2 people and 10 counters, how could you divide the counters so both people could have a fair share? Is there more than one way to do it? How many counters would each person get? Are there any counters 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
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| RESOURCES | Paper plates, scissor, glue, A4 coloured paper/cardboard, IWB, fruit, playdough, 2D shapes (circles, squares), pencils, counter, Book: Give me half (Stuart Murphy), plastic cups / containers, sand or water |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicitly communicate lesson outcomes and work quality.* Teach and review the concept of whole and half.
* Define and reinforce metalanguage used in unit- e.g.: whole, halves are two equal parts.
* The teacher demonstrates cutting a piece of fruit into two equal pieces.
* Provide students with a variety of pictures & shapes to fold in half, students then cut along the fold of symmetry.
* IWB activities
 | LEARNING SEQUENCERemediationES1  | * Review / revise concept of whole and halves.
* Reinforce through **discussion** and drawings those parts of a fraction, ‘halves are the same as each other (equal)’. Emphasise this in terms that the students can understand: “It wouldn’t be fair if one half was bigger than the other half”. Also emphasise that when you split something in half, you make a fraction by taking a **whole and** turning it into two equal parts.
* Students investigate and identify a variety of objects/ concrete materials that are whole and can then be divided into two equal parts.
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| LEARNING SEQUENCES1 | **Modelled and small group activities.*** Take 6 pencils / counters etc. Share them between 2 people. Does each person have the same number of objects? Is it a fair share? How do you know?
* Take a bundle of 10 paddle pop sticks, share with a partner. Is it a fair share? How do you know? Are there any paddle pop sticks left?
* Using clear plastic cups / containers (with half clearly marked) students to use either sand or water or rice to fill to half level and full. Discuss their observations. Links in with volume & capacity.

Investigation and Assessment: Students are given three paper squares and are asked to fold the paper squares into halves in at least two different ways. Students explain and justify how they know it is half. ‘You can compare the pieces by placing on top of the other’. Students cut another shape and explain why it is not a half. Students give an explanation / example of the need for dividing an object in half. |
| LEARNING SEQUENCEExtension Early S2 | **Extension:** If there were 4 people how could you cut a sandwich so everyone would have a fair share? Is there more than one way to do it? Students explain and justify how they know it is a half.Students fold paper shapes into half, then fold again to make four parts, introduce concept of quarters. |
| **EVALUATION & REFLECTION** | Student engagement: Achievement of outcomes:Resources: 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.