**MATHEMATICS ES 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 6 | STRAND: Number and Algebra | **SUB-STRAND:** Patterns and Algebra  | **WORKING MATHEMATICALLY:** MAe-1WM, MAe-2WM, MAe-3WM, MAe-8NA |
| OUTCOMES: MAe-8NA | **Recognises, describes and continues repeating patterns** |
| **CONTENT:**  | **Copy, continue and create patterns with objects and drawing**\* Recognise, copy and continue repeating patterns using shapes, objects or pictures |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | Make two patterns on the table with pattern blocks. Ask children to select the pattern.  Point to the growing pattern. Tell me how does this pattern grow? Anecdotal records. |
| WARM UP / DRILL | * Draw a pan balance on the board with six red counters on the left pan. Show students the green and blue markers. Ask What could I put on the other pan to make it balance? Encourage a variety of responses. Erase all counters and repeat with eight red counters on the left pan. Listen for the rule, ’one more square.’
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Pointers for interview: http://www.curriculumsupport.education.nsw.gov.au/primary/mathematics/assets/pdf/sqone.pdf Can you show the repeating pattern? How can you design a pattern that repeats? |
| 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 | Pattern blocks, counters, drums, triangle, leaf, shell, featherMake a stencil with assessment task of repeated patterns. (Pre-assessment)Talking About Patterns and Algebra, DEC |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicitly communicate lesson outcomes* Teach and review the language for patterns.
* Demonstrate placing items ‘in-a-row’
* Metalanguage of: design, pattern, repeating pattern, missing element, same, different, next, in-a-row, beside, again, copy, ‘read’-the pattern.
 | LEARNING SEQUENCERemediationES1  | * *Participating in building and describing a number pattern*.

1. Sit in a circle and say, ’listen to my pattern.’ Clap and snap with at least four repeats. Get children to predict what comes next. 2. Two children use a triangle and a drum to make the pattern triangle/drum. Children select a short pattern. Other children may change the pattern using the drum and triangle. Sound and Action patterns *p13 Talking About P&A.*3. Lay the pattern feather, leaf, shell, feather, leaf shell, feather, leaf shell. Children predict what comes next. Change the pattern.  |
| LEARNING SEQUENCES1 | * *Beginning repeating patterns*

Students are given a set of counters containing two colours and are asked to put the counters in a row. Some students may create a repeating pattern, while others may not. The intention is to distinguish between those that are repeating and those that are not. Question Where are the patterns? What may come next in the pattern? How do you make this pattern?Sound and action pattern representations. Patterns with objects, shapes and pictures. *Pp15,16 Talking about P&A.** **Investigation**: Give the children six red, six blue, and six green counters and ask the children to put them in a row that shows a pattern. Ask them to describe the pattern.
* Complete a worksheet where a pattern needs to be continued.
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| LEARNING SEQUENCEExtension  S1 | * Play, “Teddy Tummies’ *pp269-270 DENS* 1
* Modelling equal sized groups. BLM 289
* Drawing Patterns
* Naming Patterns pp17-20 *Talking About P&A*.
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| **EVALUATION & REFLECTION** | Sit the children in a circle. Have every child select a leaf, feather and a shell. Say to the children, ‘I am going to start a pattern with my leaf, feather and shell,’ and continue ‘what do you think comes next?’ |

* 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.