**MATHEMATICS ES 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 7 | 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**\* Create or continue a repeating pattern using computer graphics (Problem solving) |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Use Echidnas *pp 131 DENs*

Make patterns with toothpicks placed into echidnas.Draw a toothpick pattern. L..ll..lll…llll…lllll Predict what is next? * Problem Posing *p31 Talking about P&A*.
 |
| WARM UP / DRILL | * Have students watch you as you draw the following pattern.
* \* \* \* \* \* \* \*
* \* \* \* \* Describe the pattern. Read the pattern using numbers3, 1, 3, 1, 3, 1, 3,….Now try with 4 and 2.
* \* \* \* \*
 |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | \* Pointers for interview: http://www.curriculumsupport.education.nsw.gov.au/primary/mathematics/assets/pdf/sqone.pdfWhat pattern is created by these ‘core items?’Can you change the core items and make a new pattern? |
| 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 | Ipads, Targeting Maths-Launch Pad Talking about. P&A <http://www.linkslearning.k12.wa.us/kids/1_math/2_illustrated_lessons/5_Patterns/index.html> <http://resources.hwb.wales.gov.uk/VTC/simple_patterns/eng/Introduction/default.htm>………….http://www.topmarks.co.uk/ordering-and-sequencing/caterpillar-ordering  |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Explicitly communicate lesson outcomesTeach 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.* Also ‘Core of pattern’.
 | LEARNING SEQUENCERemediationES1  | * Play ‘Mad Monkeys’ from *Targeting Maths Launch Pad.*

Discuss patterns.Alternatively use ‘Links Learning’ *Video sessions on Patterns.*1. Examples
2. Patterns
3. ‘Core of pattern’
4. Extending patterns
5. Same patterns different images
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| LEARNING SEQUENCEES1 | * Use *Simple\_Patterns* program

Introduction: Viewing of the making colour, shape or picture patterns. Demonstration of these patterns.Development:1. Recognise and recreate simple patterns
2. Creating patterns using computers
* **Investigation**: Making patterns using colour, shape or picture using ‘*simple\_patterns’*.
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| LEARNING SEQUENCEExtension Early S1 | * Use ‘Top Marks’

<http://www.topmarks.co.uk/ordering-and-sequencing/caterpillar-ordering>Order and sequence numbers. |
| **EVALUATION & REFLECTION** | * Play: ‘The Sequence Game.’ Anecdotal notes

Search:‘Topmarks’http://www.literactive.com/Download/live.asp?swf=story\_files/sequence\_game\_US.swf  |

* 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.