**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 4 | STRAND: Number and Algebra | **SUB-STRAND: Patterns and Algebra 1** | **WORKING MATHEMATICALLY:**  MA1-1WM, MA1-2WM |
| OUTCOMES: MA1-8NA | | **Creates, represents and continues a variety of numbers and objects.** | | |
| **CONTENT:** | | **Investigate and describe patterns formed by skip counting and patterns with objects.(ACMNA018)**   * Recognise, copy and continue patterns with objects or symbols. * Recognise when an error occurs in a pattern and explain what is wrong.(Communicating, Problem Solving) | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | * Can the children describe a sequence of counting, can they continue the sequence? | | |
| WARM UP / DRILL | | * Display 100s chart on board. The children count back and forwards by two’s, fives and tens as a whole class. Can they see a patterning happening with the numbers? | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | |  | | |
| 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 |
| RESOURCES | | Websites: Count Me in Too; http://www.cheekymonkeyresources.co.uk/Sequencenew/SEQUENCE.htm <http://www.topmarks.co.uk/Flash.aspx?f=SnowflakeSequencesv2> [www.harcourtschool.com/activity/paul\_pattern](http://www.harcourtschool.com/activity/paul_pattern); [www.wnet.org.uk/resources/gordan/counting](http://www.wnet.org.uk/resources/gordan/counting); Talking about Patterns and Algebra, Dept of Ed book. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| * Make a stencil of two feet showing ten toes and make ten copies. Display one pair of feet card and ask the students to count how many toes there are altogether and record the number ten. Add another pair of feet and have the students count and record the total number of toes. Continue adding pairs of feet and recording the number of toes to build the count-by-tens sequencing. Display on wall the ten pair of feet cards with the number of pairs of feet recorded above the cards and the number of toes below. Discuss the relationship between the two sequences of numbers. Can be redone with one hand card. * Write number patterns on the board and make some errors in each pattern. Ask the children if the patterns are correct, if not why not? Can they make them correct? Have them explain the reasons behind their choices. | LEARNING SEQUENCERemediationES1 | * ***This activity is modelled.*** *Students are given a set of counters containing two colours and are asked to put the counters in a row.*   *Where do we see patterns?*  *What comes next in this pattern? How do you know?*  *Which part of the pattern is repeated?*  *Tell me how to make this pattern?*  *The teacher models putting a small collection of counters in a row, making sure that*  *they make a repeating pattern*  *Possible questions include:*  *Can you describe your row of counters?*  *Can you describe my row of counters?*  *Can you make a row of counters like mine?*  *Can you make another row of counters that has a pattern?*  *Model informally recording patterns.*   * In pairs, students make new rows of counters, describe them to each other, and record their patterns. At this early stage, it is preferable to use materials that have only one attribute (e.g. colour) before using materials with multiple attributes. |
| LEARNING SEQUENCES1 | * Have the children use pop sticks to make a row of triangles and record the total number of pop sticks used after each triangle has been added to the row. Have the children discuss the counting sequence created. * Have the children make other shapes to create and discuss other counting sequences. |
| LEARNING SEQUENCEExtensionEarly S2 | * To generate the sequence of multiples of four, students make a series of rhombuses from popsticks or matchsticks and keep a record of how many sticks they have used altogether after each rhombus is added. They also record the number of rhombuses. After constructing some rhombuses, students discuss how they could continue the sequence without making the shapes. As they work, ask students to explain how they are generating the number sequence. |
| **EVALUATION & REFLECTION** |  |