**MATHEMATICS EARLY STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: 1 | WEEK: 5 | STRAND: Number & Algebra | **SUB-STRAND:** Patterns & Algebra | **WORKING MATHEMATICALLY:** MAe-1WM  |
| OUTCOMES: MAe-8NA | **Recognises, describes and continues repeating patterns** |
| **CONTENT:**  | **Sort and classify familiar objects and explain the basis for these classifications (ACMNA005)**\* Sort and classify a group of familiar objects into smaller groups L\* Recognise that a group of objects can be sorted and classified in different ways CCT |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Assessment before: **Questioning (Anecdotal Notes):** 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?

 * Assessment after: Record follow a pattern & completed it. (Work Sheet) & take photos of children’s work

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| WARM UP / DRILL | * Introduction - Patterning video

<http://www.brainpopjr.com/math/geometry/patterns/preview.weml>* Moonrock Patterns - Interactive Whiteboard activity http://www.abcya.com/patterns.htm
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| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | * **Counting patterns**

Lead the students in oral counting to ten. Coordinate body actions, such as clapping, clicking or stamping, with each number as it is counted. Alternatively, instruct the students to perform various body actions on alternate numbers, for example touching their shoulders on odd numbers and clapping on even numbers. Vary the activity to using voice patterns, such as counting softly on odd numbers and loudly on even numbers. |
| 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 | * Variety of materials for making patterns: coloured counters, bottle top lids, buttons, paddle pop sticks, animal characters, etc.
* Patterning Work Sheet -camera for taking observations of student work
* IWB & Sites listed,
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**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| * **Lesson 1**

Students follow the teacher doing body percussion tapping body parts in a pattern. For example, a ‘two’ pattern might be to tap your head and then tap your shoulders. Students are invited to make up another ‘two’ pattern for the students to follow as a whole class. * **Lesson 2**

 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. * **Lesson 3**

**Beginning to Make 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. Possible questions include: 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  | LEARNING SEQUENCEPre Foundation Skills | * Beginning to Make 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 of the activity is to distinguish between those arrangements that are repeating patterns and those that are not. |
| LEARNING SEQUENCEES1 | * 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 (eg colour) before using materials with multiple attributes.
* With teacher guidance, students record the pattern using drawings. They are encouraged to use numbers in their recording.
* Create patterns with objects, drawn shapes or pictures.

For example:Have the students describe the pattern.* Follow up work sheet - Students are required to continue a pattern.
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| LEARNING SEQUENCEExtension S1 | * Consider the following pattern:

If a student calls it a one-two pattern, ask if there could be any other name for it. Calling it a three pattern leads to concepts of number combinations.Provide numeral cards with collections of objects or shapes. Students use them as labels for their patterns, as in the following examples.Also provide blank cards for students to create their own labels |
| **EVALUATION & REFLECTION** |  |

* 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.