**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM:  | WEEK: 8 | STRAND: Number and Algebra | **SUB-STRAND:** **Patterns and Algebra 2** | **WORKING MATHEMATICALLY:** MA1-1WM, MA1-2WM, MA1-3WM |
| OUTCOMES: MA1-8NA | **Creates, represents and continues a variety of patterns with number objects** |
| **CONTENT:**  | **Describe patterns with numbers and missing elements (ACMNA035)*** Determine a missing number in a number pattern. E.g. 3, 7, 11, \_\_, 19. 23, 27.
* Describes how the missing number in a number pattern was determined (Communicating, Reasoning).
 |
| ASESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Questioning: What are some different ways we can find missing numbers?
 |
| WARM UP / DRILL | Display 100s chart on the board. Counting forwards and backwards by 2s, 5s and 10s as a whole class.[www.primarygames.co.uk/pg2/splat/splatsq100.html](http://www.primarygames.co.uk/pg2/splat/splatsq100.html) |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | TENS Activity- Using the hundreds chart look at different patterns using multiples and factors (DENS1 Page 273) |
| 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 | Hundreds chart, whiteboard markers, 100 square sheet, dot-to-dot worksheets |

**TEACHING AND LEARNING EXPERIENCES**

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| --- | --- |
| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES |
| Make up numeral cards that have a variety of numbers from 0-100 on them. Hold them up and ask for students to tell you as quickly as possible the number that comes before/after the number of the card you holding up. You can turn this into a competition between two teams to make it more interesting for the students. It is also possible to play the game asking for the number that is two or five numbers before/after the given number.Display on the whiteboard the following problems:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 15 | 16 | 17 |  | 19 |  |  | 22 |

Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 30 | 29 | 28 |  |  | 25 |  | 23 |

Rule; \_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 2 | 4 |  |  | 10 |  | 14 |

Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 15 | 20 | 25 |  | 35 |  |  | 50 |

Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 96 | 94 |  | 90 | 88 |  |  | 82 |

Rule: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Discuss what is happening in each pattern. Is it going forwards or backwards? By how many? Repeat with further examples. | LEARNING SEQUENCERemediationES1  | * Looking for Patterns

Write 1, 2, 3 on the board. Ask children to continue the counting pattern. Write the next few numbers on the board. What is the pattern?Write 10, 12, 14 on the board. Ask children to continue the counting pattern. Write the next few numbers. What is the pattern?Write other examples of counting by 2s, 3s and 5s. Children identify the pattern and continue it for another four turns. |
| LEARNING SEQUENCES1 | * Patterns

Give students photocopies of 100 squares and get them to colour a number from 1-10. Then they decide what pattern they are going to use, e.g. start on 2 and count by 3s. They colour each number that they land on. Look at the patterns. Discuss the patterns.**Investigation:** Adapt dot-to-dots. Change the numbers and the starting number to given children practice counting in 2s, 3s or 5s. Photocopy them for children to solve. |
| LEARNING SEQUENCEExtension Early S2 | * Divide students into pairs. Give each pair a laminated hundreds chart that they can draw on with a whiteboard marker.
* Have students circle the number 5 and then keep circling by 5s. Can students see a pattern? What tells them that a number is going to be circled? Can students predict the numbers? Students then wipe their board’s clean and repeat activity using other numbers. When students have an understanding of the concept get them to count forwards/backwards by 2s from 55.
 |
| **EVALUATION & REFLECTION** | Were students able to identify patterns?Could students provide reasons for their responses and continue the patterns? |

* 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.