**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 3 | STRAND: Statistics and Probability | **SUB-STRAND: Data** | **WORKING MATHEMATICALLY:****MA1-1WM , MA1-3WM** |
| OUTCOMES: MA1-17SP  | gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results |
| **CONTENT:**  | **Choose simple questions and gather responses (ACMSP262)*** Gather data and track what has been counted by using concrete materials, tally marks, words or symbols

**Represent data with objects and drawings where one object or drawing represents one data value and describe the displays (ACMSP263)*** Use concrete materials or pictures of objects as symbols to create data displays where one object or picture represents one data value (one-to-one correspondence), e.g. use different-coloured blocks to represent different-coloured cars
* Describe information presented in simple data displays using comparative language such as 'more than' and 'less than', e.g. 'There were more black cars than red cars' (Communicating, Reasoning)
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| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * Students construct a graph and interpret the information presented.
* Teacher presents the following:

Ken went to the beach with his family last weekend. They walked along the shore and explored the rock pools. They saw many things.Display a set of pictures on IWB to show what Ken and his family saw.* Using this information, students construct a graph using a symbol to represent each animal.
* Students use their graphs to predict what they might see if they were to visit the same beach the following weekend.
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| WARM UP / DRILL | Re. Early Arithmetic Strategies Program• Write numbers on the board and have students read the place value of the digits in the numbers• Finding numbers one and ten before and after a number to 100 (extension to 1000) |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | **Bean Bag Toss – Problem Solving Activities (page 20)*** Dan threw three bean bags. Each went into a bucket. More than one bean bag can go in a bucket.
* What is the highest score Dan can get? What is the lowest score Dan can get? Find three ways to score 9.
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| QUALITY TEACHING ELEMENTS | **INTELLECTUALQUALITY** | **QUALITY LEARNINGENVIRONMENT** | **SIGNIFICANCE** |
| * Deepknowledge
* Deepunderstanding
* Problematicknowledge
* Higher-orderthinking
* Metalanguage
* Substantivecommunication
 | * 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 | Pictures on IWB, cardboard cards, pencils, voting cards, unifix cubes, computers, worksheets |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTIONMODELLED ACTIVITIES | GUIDED &INDEPENDENT ACTIVITIES |
| * **Explicitly communicate lesson outcomes and work quality.**
* **Introduce** the idea of a symbol and a legend to represent a larger number of objects (pictogram)
* **Discuss** why this method of representation may be useful e.g. large amounts of data can be shown.
* Use the term baseline
* Reinforce the need to have equal spacing and same size symbols when representing data
* **Pose questions** about information presented
* Have students interpret and explain information through verbal and written texts.
* Demonstrate how to use simple computer graphics to create picture graphs.
 | LEARNING SEQUENCERemediationES1  | **Kindergarten’s Birthday Display*** Students draw a picture of their face on a small card and write their name. Review the names and order of the months of the year. Arrange labels for the months of the year in order from left to right on the wall or floor.
* Students place their card down, creating a column with one face-card to represent each student born in each month. Repeat for each of the other months.
* Ask students to identify, and check, that the display shows how many of them have a birthday in each month. Jointly devise an appropriate title for the display.
* Students answer questions about the data display, such as:
* How many students celebrate their birthday in March?
* Are there any months in which no students have a birthday? How do you know?
* How many more or fewer students have their birthdays in November than in July?
* How many students are there altogether? Is there more than one way you can work this out?
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| LEARNING SEQUENCES1 | Investigation:* **Year One’s Favourite Pet**

As a class, students need to identify 6 responses to the question “what is your favourite pet?” Students then design a voting card to be completed by all students in Year 1. All voting cards are sorted and counted in the classroom. Students may use tally marks or bundling of concrete objects/ unifix cubes to count each pet. Students decide on a symbol and a legend/key to represent pets.* As a whole class create a pictogram/graph using collated data.
* Demonstrate how to use simple computer graphics to create a picture graph.
* Complete Data worksheet – Interpreting Tally Marks
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| LEARNING SEQUENCEExtension Early S2 | Investigation:* **Whole Class Game: Dicey Differences** (in pairs). Materials: two six sided dice and a plastic cup for each pair of students. The students take turns to roll two regular six sided dice. Irrespective of who rolls the dice, player 1 wins a point or a counter if the difference is 0, 1 or 2; player 2 wins a point if the difference is 3, 4 or 5. Make a tally of the results of the rolls of the dice. Declare a winner after 10 rolls of the two dice.
* Discussion: Is the game fair? Get students to compare their tables and explain their understanding
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| **EVALUATION &REFLECTION** | Student engagement: Achievement of Outcomes:Resources: Follow up: |

* 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