**MATHEMATICS STAGE 1**

**TEACHING AND LEARNING OVERVIEW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TERM: | WEEK: 1 | 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)**   * Investigate a matter of interest by choosing suitable questions to obtain appropriate data   **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) | | |
| ASSESSMENT FOR LEARNING | | * Worksheet - Display Data using objects and pictures 1. * Students interpret data (pictures) on Ted’s Farm using one-to-one correspondence * (understands one object or picture represents one data value) * Pre-assessment can also be derived from class discussions and observations of students work. | | |
| WARM UP / DRILL | | * Collecting Hungry Caterpillar Data * Read the Very Hungry Caterpillar by Eric Carle and review the order of the days of the week and what the caterpillar ate on each day. * Using the IWB, students drag pictures of food in rows above the days of the week to create a simple data display. * Students answer questions about the data display, such as:   + What did the caterpillar eat on Monday, Tuesday, Wednesday, etc.?   + How many cherry pies are shown?   + How much more food did the caterpillar eat on Friday compared to Tuesday?   – How many pieces of food did the caterpillar eat altogether? | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | **Four Pin Bowling – Problem Solving Activities (page 16)**   * Which pins must Joshua knock down to score exactly 5? * Find 2 different ways to score 5, to score 6, to score 7. | | |
| 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 |
| RESOURCES | | IWB slide, Eric Carle’s Hungry Caterpillar, variety of objects for sorting (blocks, unifix cubes, fruit etc.), worksheets (see below) | | |

**TEACHING AND LEARNING EXPERIENCES**

|  |  |  |
| --- | --- | --- |
| WHOLE CLASS INSTRUCTIONMODELLED ACTIVITIES | GUIDED &INDEPENDENT ACTIVITIES | |
| * **Explicitly communicate lesson outcomes and work quality.At this stage, students should understand that each object in a picture graph represents one object (one to one correspondence)** * **Introduce** students to the importance of data organisation and tallying. * **Explain**that Information is sometimes shown in **tables, charts and graphs** to make the information easier to read. It is important to read all the different parts of the table, chart or graph. * **Introduce data display/picture graph.**Discusshow information is organised. * **Introduce floor graph.** Using concrete objects of students’ interests and a strip of masking tape as a base line, create a floor graph as a whole class. * **Discuss**the baseline and the need for equal spacing and same size symbols when representing data and discuss why. * **Organise** data display on the floor and photograph. * **Model language**by referring to one column as having ‘more than’ or ‘less than’ another. * **Discuss** which object is the most popular/least popular? Encourage students to respond using modeled language. | LEARNING SEQUENCERemediationES1 | * **Whole class activity**   Students are provided with a variety of objects that they can sort by colour, e.g. counters, blocks, geometric shapes. Students sort objects by colour into labelled bowls or hoops.   * Discuss reasons for placement. * Count number of objects in each category and compare sizes of groups. * Extension: Students generate categories for the hoop sort e.g... Size, shape, material etc. |
| LEARNING SEQUENCE **S1** | Investigation:   * **Students watch** [Learning Zone Class Clips - Robinson Crusoe animation - tallying](http://www.bbc.co.uk/learningzone/clips/robinson-crusoe-animation-tallying/3141.html) on the importance of organising data. * **Dice Roll and Tally Game**<http://www.brainpopjr.com/math/data/tallychartsandbargraphs/> give each child a die and a recording sheet with columns marked with the number 1 through to 6 on the bottom. Get children to roll the dice 40 times and record tally. * **Create floor graph** using concrete objects (fruit, chocolate bars etc.). Students convert data into their own picture graph and/or table. * **Students watch** [Learning Zone Class Clips - Are dogs the most popular pets?](http://www.bbc.co.uk/learningzone/clips/are-dogs-the-most-popular-pets/3142.html) about the importance of asking the correct questions when gathering information. * **Whole class game** <http://www.bbc.co.uk/schools/teachers/ks2_activities/maths/interpreting_data.shtml> * **Worksheet - Organising Data** <http://downloads.bbc.co.uk/schools/ks1bitesize/worksheets/bbc_bitesize_ks1_maths_worksheet_organising_data.pdf> * Discuss how graphs help us in everyday life. * Make anecdotal records based on students’ responses. |
| LEARNING SEQUENCEExtensionLateS1 | Investigation:   * **Display** a number of sporting activities on the IWB. Students discuss with a partner what they would choose as their favourite sport to watch or play. * **Students report back** to the class which sport they would choose and why. * **Use** tally marks next to the choices chosen by each student. Revise how to show 5 using tally marks. * Whole Class Game   <http://www.bbc.co.uk/learningzone/clips/robinson-crusoe-animation-tallying/3141.html> |
| **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