**MATHEMATICS STAGE 2**

**TEACHING AND LEARNING OVERVIEW**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TERM: | WEEK: 1  | STRAND: Statistics and Probability | **SUB-STRAND: Data 1** | **WORKING MATHEMATICALLY:****MA2-1WM, MA2-2WM, MA2-3WM** |
| **OUTCOMES: MA2-18SP** | **Selects appropriate methods to collect data, and constructs, compares, interprets and evaluates data displays, including tables, picture graphs and column graphs** |
| **CONTENT:**  | **Identify questions or issues for [categorical variables](http://syllabus.bos.nsw.edu.au/glossary/mat/categorical-variable/?ajax" \o "Click for more information about 'categorical variables'" \t "_blank); identify [data](http://syllabus.bos.nsw.edu.au/glossary/mat/data/?ajax" \o "Click for more information about 'data'" \t "_blank) sources and plan methods of data collection and recording (ACMSP068)*** Recognise that data can be collected either by the user or by others
* Identify possible sources of data collected by others, e.g. newspapers, government data-collection agencies, sporting agencies, environmental groups

**Collect data, organise it into categories, and create displays using lists, tables, [picture graphs](http://syllabus.bos.nsw.edu.au/glossary/mat/picture-graphs/?ajax" \o "Click for more information about 'picture graphs'" \t "_blank) and simple [column graphs](http://syllabus.bos.nsw.edu.au/glossary/mat/column-graph/?ajax" \o "Click for more information about 'column graphs'" \t "_blank), with and without the use of digital technologies (ACMSP069)*** Collect data and create a list or a table to organise the data
 |
| ASSESSMENT FOR LEARNING(PRE-ASSESSMENT) | * General questioning – What is a table? Where might you use/see one?

* Assessment activity - Snack time
 |
| WARM UP / DRILL | * Collect information on what students have for recess. Predict what students think will be most popular. Tally and discuss. What was most popular? Do you wish you had someone else’s food? Why?
 |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION  | Show children a picture of a graph or table. Ask them write a problem about it. Ask them to write 3 possible questions a person may ask when trying to solve it. |
| 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 | Recess foods, coins, toothpicks or match sticks |

|  |  |
| --- | --- |
| 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) Each tally mark represents one object**
* Show students table. Discuss the table. *What could it be about?*

|  |  |  |
| --- | --- | --- |
| Students | Football | Netball |
| Boys | 6 | 7 |
| Girls | 5 | 10 |

* Consider students' ideas and see how they differ, e.g. students might:suggest it is about how many girls and boys own a football or netball or tell you that the table does not have a heading.
* *A*sk: Are these the type of numbers you would expect to see in this table? e.g. Would you expect boys to have 10 footballs and 5 netballs? Encourage students to ask questions about the given information, e.g. Why *are there more boys than girls playing netball?*
* After this conversation, ask students questions which require them to make calculations using the information in the table.
* Discuss why we collect information in tables and the elements we need to include in a table eg columns, rows, heading.
 | LEARNING SEQUENCERemediationS1 | * Tell students that 3 students ride a bike, 6 students walk, 11 students come in a car, 4 students catch the bus and 1 student catches the train. Students record this data in a table using tally marks. A table with some of the headings can be provided.
 |
| LEARNING SEQUENCES2 | * Tell students the same information as above. In a small group students record this data in a table using tally marks with teacher guidance.
* Favourites. Each student is given a toothpick. The students place the toothpicks in a row against their favourite thing. The toothpicks are placed in lines and then regrouped to make counting easier.

E.g Favourite VegetableBroccoli IIIIIIIIIIIICarrots IIIIIIZucchini IIIIIIIIIIIIIII* Experiments. Students record the results of simple experiments using tally marks, e.g. recording HEAD or TAIL for twenty tosses of a coin.
* Categories. Students could record the results of traffic surveys by placing strokes or crosses and suggest ways to make them easier to count.

CARS XXXXXXXXXXXXXXXXX TRUCKS XXXXXXXXXXXXXX |
| LEARNING SEQUENCEExtension Late S2 | * Tell students that in pairs they are going to record information into their own table. Ask students to conduct a survey in their small group to collect data on the different ways of travelling to school.
* Making tables- Make tables to show the sets of data. Be sure to include tally and total columns. Make 2 separate column graphs to show this information.
 |
| **EVALUATION &REFLECTION** | **Student engagement: Achievement of Outcomes:****Resources:**  **Follow up:** |

**TEACHING AND LEARNING EXPERIENCES**

* 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.