# Booragul Public School NSW Syllabus for the Australian Curriculum — Statistics and Probability

| Data 1 | | | |
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| **Outcome** | **Teaching and Learning Activities** | **Notes/ Future Directions/Evaluation** | **Language / Date** |
| **A student:**<br><br>› describes mathematical situations and methods using everyday and some mathematical language, actions, materials, diagrams and symbols **MA1-1WM**<br><br>› supports conclusions by explaining or demonstrating how answers were obtained **MA1-3WM**<br><br>› gathers and organises data, displays data in lists, tables and picture graphs, and interprets the results **MA1-17SP**<br><br><br>**Syllabus Content Note:**<br>• Choose simple questions and gather responses<br>• Represent data with objects and drawings where one object or drawing represents one data<br>• value and describe the displays<br>Note: AC syllabus content is very similar across Data 1 and Data 2.<br><br>**Syllabus reference:**<br>Hardcopy page: 118<br>Digital: 123-124 | | **Background information**<br>In Stage 1, students are introduced to the abstract notion of representing an object with a different object, picture or drawing.<br><br>It is important that each object in a three-dimensional graph represents one object, except in the case where items are used in pairs, eg shoes. One object can also represent an idea, such as a person's preference.<br><br>When collecting information to investigate a question, students can develop simple ways of recording. Some methods include placing blocks or counters in a line, colouring squares on grid paper, and using tally marks.<br><br>A single mark in a tally represents one observation. Tally marks are usually drawn in groups of five. The first four marks are vertical, with the fifth mark drawn diagonally through the first four to make counting more efficient, | • information,<br>• **data**,<br>• collect,<br>• **gather**,<br>• display,<br>• objects,<br>• **symbol**,<br>• **tally mark**,<br>• **picture**,<br>• **row**. |

| Activities | | |
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| **Explicit Mathematical Teaching**<br>The notion of representing an object with a different object is abstract and is introduced at this Stage. It is important that each object in a three-dimensional graph represents one object except in the case where things are used in pairs eg shoes. One object can also represent an idea such as one person's preference.<br>By collecting information to investigate a question, students can develop simple ways of recording. Some methods include<br>– placing blocks or counters in a line<br>– colouring squares on grid paper<br>– using tally marks.<br>Display data using picture and column graphs - using one to one correspondence eg 1 block = 1 pet/car etc | | |
| **Ignition Activity**<br>Pets: Predict which animal is most popular.<br>Children discuss what type of animals they have for pets. Count children with a pet dog, cat, fish, rabbit, guinea pig, mice. Show how these numbers can be recorded as tally marks<br>Discuss results and what we do with them - show how to record them on a column graph using a different colour for each pet. | | |
| **Whole Class Teaching Activities**<br>**Analysing picture books**<br>Students work with a partner to analyse information in picture books. Tally marks can be used to compile data on subjects, for example: *Are more characters boys or girls? What type of pets are in picture books?* Data from all groups is combined in a picture or column graph.<br><br><br>**Interpreting data**<br>Students must be presented with opportunities to interpret data in a variety of ways including:<br>• When information is presented in a misleading way, such as inconsistent  spacing<br>• Forming their own questions that can be answered using the data provided<br>• Providing students with an untitled graph – children choose an appropriate title | | |

for the graph and explain why they have chosen that title
As above but with one (or both) axis unlabelled

Interpreting information presented in picture/column graphs
Gathering data examples:
Weather: rainy, sunny, windy, cloudy
Hair colour, number of teeth, number of children in house
**Representing/Recording Data**
When presenting data in a graph the following will need to be stressed:
- Using a consistent size symbol to represent equal amounts
- Starting from the baseline
- Equal spacing between symbols

Students may use a variety of mediums to represent data including:
- Photos and pictures (same size)
- Drawings (same size)
- Coloured paper squares
- Colouring-in squares on grid paper
- Symbols to represent data
- Tally marks
- Computer software

**Four Dice Tally -  DENS 2** pp108-109
Dice
Pencils
paper

Organise the students into groups and provide each group with four
dice and a recording sheet. Instruct each student in the group to take
turns to roll the four dice and to determine the total. The group
records the answer on the recording sheet by marking a tally mark
under the appropriate heading, 4–14 or 15–24. Have the groups
compare their results. Combine the data from all of the groups on a
single chart. Ask the students to indicate whether they believe it is
more likely to score 4 to 14 than 15 to 24, about or less likely. Have
them justify their answers.

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| **Hoops and Hats -  DENS 2** pp112-113<br>Witches hats<br>Hoops<br>Pencils paper<br><br>Draw a starting line on the ground. Place "witch hats" in a row at one metre, two metres and three metres away from the starting line. Have each student in the class attempt to throw a hoop over each of the hats. Repeat several times while using tally marks to record the number of hoops that are successfully thrown onto the hat at each distance. Encourage the students to use counting strategies such as counting in multiples to find the total of each group. | | |
| **Smarties**<br><ul><li>Each child is given a small packet of smarties</li><li>Arrange the smarties in columns according to colour</li><li>Discuss:<ul><li>the frequency of each colour</li><li>how many of each colour if you combine with a partner, group, whole class etc</li></ul></li><li>Colour grid paper to represent the smarties, and create a column or picture graph</li><li>Give graph a heading and label each axis</li></ul> | | |
| ***About Us.***<br> Make cards using statements from students e.g. *I like to swim, I help my dad in the garden, I like chocolate.* Cards are placed around the room and students use tally marks on the statements that relate to them. The tallies are counted and a picture e graph created to represent the data.<br><br> Students work with a partner to analyse information in picture books. Tally marks can be used to compile data on subjects, for example: *Are more characters boys or girls?*<br>*What type of pets are in picture books?* Data from all groups is combined in a picture or column graph. | | |