

# Booragul Public School NSW Syllabus for the Australian Curriculum – Measurement & Geometry

## Sub Strand – Position 1

Outcome	Teaching and Learning Activities	Notes/ Future Directions/Evaluation	Date
<p><b>Stage 2</b> A student:</p> <ul style="list-style-type: none"> <li>› uses appropriate terminology to describe, and symbols to represent, mathematical ideas MA2-1WM</li> <li>› uses simple maps and grids to represent position and follow routes, including using compass directions MA2-17MG</li> </ul>		<p><b>Language</b> Students should be able to communicate using the following language: position, location, map, <b>plan, path, route, grid, grid reference, aerial view</b>, directions.</p>	
<p><b><u>Ignition Activity</u></b></p> <p><b>Treasure Adventure Hunt</b> Introduce a story of long ago when the land on which the school now sits was bush and over ran by Aboriginal People and use an Aboriginal country map. Produce part of an aged map depicting the school from many years ago highlighting one key landmark such as an old tree etc. Continue the narrative of lost treasure and introduce the task of locating all the parts of the treasure map as we work through the unit – each task may even give us a clue to where the next part of the map is. As students continue to work through the unit at various times produce the next part of the treasure map to piece together and locate the treasure.</p>		 <p>Literacy Information and communication technology capability Aboriginal and Torres Strait Islander histories and cultures</p>	
<p><b>Google Maps</b> Students access 'Google maps' via the internet or as a whole class on an interactive whiteboard. Explore the website. <a href="http://maps.google.com.au/maps?hl=en&amp;tab=wl">http://maps.google.com.au/maps?hl=en&amp;tab=wl</a></p>			
<p>Construct a simple map of their own bedroom</p>			
<p><b>Positional Concentration</b> Students shuffle a pack of cards or part of a pack and place the cards face down in rows. In pairs, students take turns in instructing the other student, using the language of position, which cards to turn over eg turn over the fifth card in the second row. The aim of the game is to turn over two cards that match. If the two cards turned over match, then the student who gave the instruction wins the cards and has another turn. If the two cards do not match they are turned back over in the same position and the other player has a turn. The winner is the student who has the most cards when all the cards have been matched.</p>			
<p><b><u>Explicit Mathematical Teaching</u></b> Create and interpret simple grid maps to show position and pathways (ACMMG065) • describe the location of an object using more than one descriptor, eg 'The book is on the third shelf and 1 ~</p>			

<p>second from the left'</p> <ul style="list-style-type: none"> <li>• use given directions to follow routes on simple maps</li> <li>▮ use and follow positional and directional language (Communicating)</li> <li>• use grid references on maps to describe position, eg 'The lion cage is at B3'</li> <li>▮ use grid references in games (Communicating)</li> <li>• identify and mark particular locations on maps and plans, given their grid references</li> <li>• draw and label a grid on a given map</li> <li>▮ discuss the use of grids in real-world contexts, eg zoo map, map of shopping centre (Reasoning)</li> <li>• draw simple maps and plans from an aerial view, with and without labelling a grid, eg create a map of the classroom</li> <li>▮ create simple maps and plans using digital technologies (Communicating)</li> <li>▮ compare different methods of identifying locations in the environment, eg compare the reference system used in Aboriginal Country maps with standard grid-referenced maps (Reasoning)</li> <li>• draw and describe routes or paths on grid-referenced maps and plans</li> <li>▮ use digital technologies involving maps, position and paths (Communicating)</li> <li>• interpret and use simple maps found in factual texts and in the media</li> </ul>		
<h2><u>Whole Class Activities</u></h2> <p><b>Mystery Location</b></p> <p>Students are asked to describe the location of an object in the classroom eg 'My picture is fifth from the left and it's in the second row on the back wall'. Students write a description of the object using positional clues. The teacher collects the clues and reallocates them back to the students. Students read the descriptions and locate the object.</p> <p><i>Extension:</i> In pairs, Student A hides an object in the room while Student B turns away. Student A gives Student B directions to find the hidden object. Student B then has a turn at hiding the object.</p>		
<p><b>A and B</b></p> <p>The teacher provides each student with grid paper marked with coordinates. Students are asked to draw a map of the room or playground using the grid paper. They are asked to include an arrow on their map to indicate North. Students choose two room or playground features and label them A and B. They determine the set of co-ordinates for A and B and use directional language to describe the location of other room/playground features related to A and B. In groups, they brainstorm the positional language required to complete the activity.</p> <p><b>Classroom Grids</b></p> <p><b>Part A</b></p> <p>Students arrange desks in rows and columns. Each line (column) of desks is given a name or colour. Each desk in the line is given a number, starting with 1 at the front, from left to right. Students give a grid position for each class member. This could lead to games in which students are identified by their grid position and where students are assigned to seats according to grid position.</p> <p><b>Part B</b></p>		

<p>In pairs, students are given a 10 × 10 grid. They label the axes then draw pictures on the grid. Students take turns using coordinates to describe the position of each picture.  <i>Variation:</i> Students could play a Battleships game.</p>		
<p><b>Word Problems</b>  Use explicit teaching and Newman's Analysis to read, discuss and solve word problems.  Read this question to me  What is the problem asking me to find?  Why do I want to be able to answer a problem like this?</p> <p>Explain in your own words what the question is asking you to do.  How could I ask/explain this question in some other way to someone else?  Are there any words whose meaning you don't quite understand?  Rewrite the question using only the necessary information  Draw a diagram/make a model.</p> <p>What sort of answer would you expect?  How would you try to solve this problem?  What process would you use to answer this question?  What do I need to know to answer the problem?  Rewrite the question using only the necessary information.  Show me how you would work out your answer?  What information is important?  What information is not needed?</p> <p>Explain your answer  How do you know this is the right answer?  Write your answer in a sentence.</p>		
<p><b><u>Guided Group/Independent Activities</u></b></p> <p><b>Ice-Cube Tray</b>  In pairs, students are given an ice-cube tray. Students describe the position of a bead or counter to be placed in the ice-cube tray eg 'put the bead in the third square from the left in the top row'. Students find that position in their ice-cube tray and a bead or counter there.  Students check and discuss their results. Students repeat the activity in opposing pairs. Student A describes the location of the opposition's bead for student B to place a corresponding bead in the correct position.  <i>Variation:</i> The activity could be played as a barrier game or Battleships.</p>		

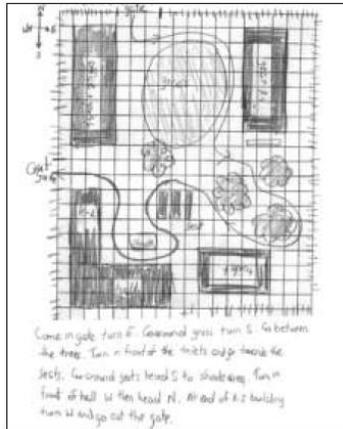


**Bike Track**

In pairs, students are given grid paper to design a bike track within the school grounds or the local park. Students discuss their layout, such as ensuring the route does not cross itself and provides an entry/exit to the school grounds.

Students draw a grid over their map and are asked to describe their bike tracks using positional language, in relation to other structures or pathways.

Students use a compass rose to indicate directions.



**Boxes**

Students play a variation of the game 'Boxes' on a 6 x 6 grid. In small groups, students take turns to roll two dice, one at a time. The first roll represents the number on the horizontal axis, and the second roll represents the number on the vertical axis. The student plots their point on the grid paper and gives the dice to the next player. Students continue to take turns to plot their coordinates, until one person has 4 points to make a

'box', putting their initials inside it. The game continues until all points are plotted or a time limit is up, and the person with the most boxes wins.

**Construct a Simple Map/Plan**

Students construct a simple map/plan of their bedroom, classroom or playground. Students plot coordinates on the map/plan and include a key.

Possible questions include:

- can you construct a simple map or plan using coordinates?
- does your key allow you to locate specific objects?
- can you draw a path from one point to another on your map/plan?
- can you describe how to get from one point to another?
- can you use directions to follow a route on your map?
- can you describe the location of an object in relation to another using more than one descriptor?
- can you describe the position of ..... using coordinates?

*Extension:* Students create a plan of a room of their choice using drawing tools on the computer.

Orienteering activity - follow directions to find hidden treasure

Previous NAPLAN Questions-2008

5 Adam put some stickers on this grid.

4			☀	
3	😊		♥	
2				
1			☆	
	A	B	C	D

Which sticker is at C3?



7 In this photo, Con is in the back row second from the right.

Shade one bubble. 

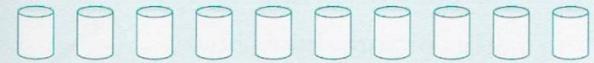


What number is on Con's jumper?

- 2
- 3
- 4
- 5

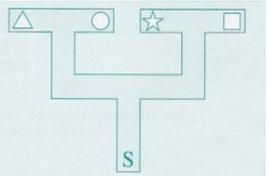
BST 2004-Yr 3

1. Colour the fifth tin from the left.



BST 2004

G. Colour the way from S to the star.

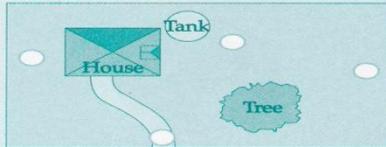


BST 2002

35. Marlena can see this view from where she is standing.



Here is a map of the same area.

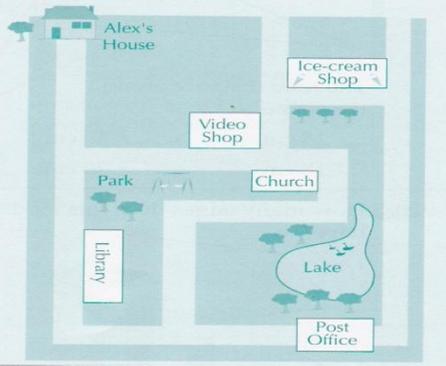


Colour the bubble on the map that shows where Marlena is standing.

### BST 2004-Question 22

22. Alex walked to the Post Office from his house. He walked past the two shops to get to the Post Office.

Colour the way Alex walked to the Post Office.



## Planned Assessment

### Pre Assessment

Using a map of the school, students are to describe locations using more than one descriptor in coordinates or directions. Teacher gives students a route to follow to a position.

Same as pre-assessment but use different map eg map of zoo (attached). Students find the features at

<p>given coordinates and the coordinates of given locations, and pose their own questions based on the map. As an extension, provide students with a map that has no coordinate system and they design a coordinate system that could be used. They give directions using coordinates or compass points</p>		
<p><b>Pre Assessment</b>          Use a compass rose to label as many directions as possible           Use a grid to follow given directions          Write directions to get from A to B to E to C on a map following shortest route          Use a compass rose to label directions          (Working Beyond - label points of North-Northwest etc 8 extra points on compass)</p>		