



Using Maths Aotearoa and Wilkie Way to deliver the refreshed New Zealand Curriculum

Maths Aotearoa Book 2B provides a range of learning opportunities building onto knowledge and concepts developed in year 3. These learning opportunities enable students to achieve the outcomes expected in year 4. The teacher book also provides links to further learning opportunities in the MOE Figure it Out series available in all schools.

Maths Aotearoa teacher books and student books are available from edify.co.nz

Wilkie Way members also have access to Professional Resources on the teaching of geometric ideas and further classroom resources.

Phase 2: Year 4

Understand: (big ideas)	Do (practices)
<p>As students build knowledge through their use of the mathematical and statistical processes, they begin to understand:</p> <ul style="list-style-type: none"> • Patterns and variation • Logic and reasoning • Visualisation and application 	<p>Students will have learning opportunities to:</p> <ul style="list-style-type: none"> • Investigate situations • Represent situations • Connect situations • Generalise findings • Explain and justify findings

Know: Context of Geometry

Shapes	Spatial Reasoning	Pathways
<p>Identify, classify & describe the attributes of polygons (Including triangles & quadrilaterals) using properties of shapes, including lines and rotational symmetry.</p> <p>Compare angles in 2D shapes, classifying them as equal to, smaller than, or larger than a right angle.</p>	<p>Identify the 2D shapes that compose 3D shapes. Visualise, predict, and identify which shape is a reflection, rotation or translation of a given 2D shape</p>	<p>Use grid references to identify regions and plot positions on a grid map. (<i>Grid references in book 3A while compass points in 2B</i>) Interpret and describe pathways, including those involving half and quarter turns and the distance travelled.</p>

Maths Literacy Development

- Assistance with learning to use specialist vocabulary associated with shape, space, position & orientation
- Assistance with reading & understanding math texts involving geometric language and concepts
- See the vocabulary list in the curriculum document

Concepts being developed	Key knowledge being developed
<ul style="list-style-type: none"> • Direction (which way?) ,Distance (how far?) Location (where?) • Angle as a turn around a fixed point • Reflective and Rotational symmetry • Transformations • Classification by more than one attribute • Spatial thinking • Spatial reasoning • Spatial visualisation 	<ul style="list-style-type: none"> • Direction left and right • Rotation, clockwise and anti clockwise • Full, half and quarter turns • Points of the compass • Language of geometry to describe attributes • Identify and name a wider range of shapes

<p style="text-align: center;">Maths Aotearoa Book 2B</p>	<p style="text-align: center;">Support Material available from Wilkie Way website wilkieWAY.co.nz: membership area (subscription)</p>
<p>Unit 6 Geometric Shapes</p> <p>Chapter 18 Lines and Angles <i>This chapter was also included in the measurement plan as foundational to the measurement of angles</i></p> <ul style="list-style-type: none"> • Know the static features of a right angle • Create a right angle measure • Explore the dynamic concept of an angle - it can grow larger or smaller by rotating one or both of its arms • Identify angles as more or less than a right angle • Name 2 dimensional shapes based on the number of sides <p>Chapter 19 Triangles</p> <ul style="list-style-type: none"> • Explore and name different sorts of triangles • Introduce triangular and square based pyramids <p>Chapter 20 Cross Sections <i>(not specifically mentioned in the curriculum document but essential knowledge to describe an attribute of a prism as having a perpendicular cross section equal to the face at either end of the prism - a difference between a prism and a pyramid)</i></p> <ul style="list-style-type: none"> • Explore cross sections • Work with spatial visualisation 	<p>Teacher Professional Resources:</p> <p>Curriculum Knowledge: Geometry Pocket Guide: Geometric Thinking</p> <p>Geometric Progressions</p> <p>Student Resources: Geometric problems</p> <p>Video Lessons Using Grid references Grid References and Compass Points</p>
<p>Unit 7: Transformations</p> <p>Chapter 21 Rotational Symmetry</p> <ul style="list-style-type: none"> • Recognise rotational symmetry in shapes and designs • Use reflective and rotational symmetry in a design • Use flips, slides and turns in a design <p>Chapter 22 Geometric Ideas</p> <ul style="list-style-type: none"> • Explore enlargements, reductions and distortions • Explore simple flight paths 	
<p>Unit 8 Position and Orientation</p> <p>Chapter 23 Giving Directions</p> <ul style="list-style-type: none"> • Give directions using the points of the compass Follow directions using a simple map • Give directions using a simple map 	<p>Points of the compass are specified for Year 5 in book 2B and Grid references for year 4 in book 3A</p> <p style="color: red;">It doesn't actually matter - students learn both in their primary years and the items of knowledge are not dependent on each other.</p>