



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

Maths Aotearoa Book 4B provides a range of learning opportunities building onto knowledge and concepts developed in year 7. These learning opportunities enable students to achieve the outcomes expected during year 8. 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 measurement and word problems using measurement contexts.

Phase 3: Year 8

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 Measurement

Measuring	Perimeter, area & volume
<p>Estimate and then measure length, area, volume, capacity, mass, temperature, data storage, time and angle, using appropriate units</p> <p>Select and use appropriate base measures within the metric system, along with a prefix to show the size of the unit.</p> <p>Convert between metric measurement units, including square units.</p> <p>Find distance, given speed and time or time given distance and speed.</p> <p>Read, interpret and use timetables and charts that present information about duration.</p> <p>Convert times to a common unit such as seconds or minutes and use decimal units of time (milliseconds)</p>	<p>Calculate the volume of triangular prisms and shapes composed of rectangular prisms.</p>

Maths Literacy Development

<ul style="list-style-type: none"> • Confidently use specialist vocabulary associated with measurement see vocabulary list in the curriculum document • Confidently read & understand math texts involving measurement language and concepts • Understand the meaning of prefixes using in measurement units

Concepts being developed	Key knowledge being developed
<ul style="list-style-type: none"> • Understand the relationship between standard units of measure and use to convert fractions to whole numbers and vice versa • Understand time is not based on powers of ten except fractions of seconds • Understand the zero point for measuring time is determined by what needs measuring • Understand the degree of accuracy of measure is dependent on the context in which the measurement is to be used. • Understand any point on a scale can be used as a zero point 	<ul style="list-style-type: none"> • Know the base metric units and the prefixes of other units describe the relationship to the base unit • Know shapes can be decomposed or recomposed to help find perimeters, areas and volumes • Specific vocabulary and ideas related to circles (foundational to Phase 4) • Know relationship between time, distance and speed

<p style="text-align: center;">Maths Aotearoa Book 4B</p>	<p style="text-align: center;">Support Material available from Wilkie Way website wilkieWAY.co.nz: membership area (subscription)</p>
<p>Unit 5: Chapter 12 Investigating with Angles <i>This chapter sits under the unit on Position and Orientation leading into work on bearing. The focus of the chapter is on angles in triangles to define different triangles and angles along straight lines and with intersecting lines leading toward using algebraic reasoning to explain rules for geometric shapes.</i></p> <ul style="list-style-type: none"> • Know the interior angles of a triangle add up to 180° • Know opposite angles of intersecting lines are equal • Know the angles on a straight line add up to 180° • Use knowledge of rotation to calculate unknown angles along a straight line • Use angle properties of triangles to calculate unknown angles 	<p>Teacher Professional Resources: Curriculum Knowledge: Measurement</p> <ul style="list-style-type: none"> • Pocket Guide: Using Standard Units of Measure • Measurement Progressions <p>Student Resources: Measurement problems</p>
<p>Unit 7 Measurement Chapter 17 Area and Perimeter</p> <ul style="list-style-type: none"> • Select appropriate units of measure • Calculate areas of complex shapes by creating simple shapes • calculate perimeters • Derive a formula for calculating the area of a triangle <p>Chapter 18 Working with Circles <i>(Foundational work for Phase 4)</i></p> <ul style="list-style-type: none"> • Know the perimeter of a circle is called a circumference • Know vocabulary associated with circles - diameter, radius • Draw circles using a pair of compasses • Find out about a special number called pi (π) • Find a formula to calculate the circumference of a circle • Find a formula to calculate the area of a circle <p>Chapter 19 Working with Volume and capacity</p> <ul style="list-style-type: none"> • Estimate capacity or volume • Use a formula to calculate the volume of a cuboid • Calculate the volume of other prisms using knowledge of finding the area of a triangle and a circle. <p>Chapter 20 Working with Time</p> <ul style="list-style-type: none"> • Solve problems involving 24 hour clock • read a timetable • Use smaller units of time into fractions of seconds • Investigate timezones 	

Chapter 21 Rates of Measure

- Recognise a relationship between time, distance and speed
- Calculate a measurement over a period of time
- Calculate speed from distance and time measures
- Use ratios and proportional reasoning to solve problems
- Use calculators efficiently to solve problems