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

Maths Aotearoa Book 3A provides a range of learning opportunities building onto knowledge and concepts developed in year 4. These learning opportunities enable students to achieve the outcomes expected during year 5. The teacher book also provides links to further learning opportunites 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 2: Year 5

Understand: (big ideas)	Do (practices)
As students build knowledge through their use of the mathematical and statistical processes, they begin to understand: • Patterns and variation • Logic and reasoning • Visualisation and application	Students will have learning opportunities to: • Investigate situations • Represent situations • Connect situations • Generalise findings • Explain and justify findings

Know: Context of Measurement

Measuring	Perimater, area & volume
Estimate and then accurately measure length, mass, capacity, temperature, and duration, using metric or time based units or a combination of units. Use the appropriate tool for a measurement and the appropriate unit for the attribute being measured. Use the metric measurement system to explore relatiionships between units, including relationships represented by benchmark fractions and decimals. Describe angles using the terms acute, right, obtuse, straight and reflex. comparing them with benchmarks of 90, 180 and 360 degrees Describe the differences in duration between units of time and solve duration of time problems involving am and pm notation.	Visualise, estimate and calculate: • the perimeter of regular polygons (in m, cm and mm) • the area of shapes covered with squares or partial squares • the volume of rectangular prisms filled with centicubes, taking note of layers and stacking.

Maths Literacy Development

• Assistance with learning to use specialist vocabulary associated with measurement.
• Assistance with reading & understanding math texts.
• Explore the meaning of prefixes used in measurement units
• See vocabulary list in curriculum document

Concepts being developed	Key knowledge being developed
• Understand angle as a measure of rotation about a fixed point • Understand the decimal relationship between standard units of measure • Understand area as a multiplicative measure • Understand cyclic nature of time and that any point in time can be considered the zero point.	• Know 0.5kg = half a kilogram = 500g • Know 0.5L = half a litre = 500mL • Know 0.5m = half a metre = 50cm • Know angles are measured in degrees º • Know a full turn is 360º, half turn 180º, quarter turn 90º

Maths Aotearoa Book 3A	Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)
Unit 4: Chapter 9 Measurement and the Decimal Point *This chapter sits under the unit on beginning decimals - it focuses on the relationship between metres and centimetres, centimetres and millimetres, litres and millilitres, grams and kilograms* • Know 10cm as one tenth of a metre • Know 100g as one tenth of a kilogram • Know 100mL as one tenth of a litre • Measure to the closest millimetre • Record centimetres and millimetres in decimal notation • Understand fractions as numbers between whole numbers	**Teacher Professional Resources:** **Curriculum Knowledge: Measurement** • Pocket Guide: Using Standard Units of Measure • Measurement Progressions • Powerpoint: The development of measurement concepts & their alignment with number ideas • Article: Developing a linguistic and conceptual understanding of measurement
Unit 8: Chapter 21 Investigating Angles *This chapter sits under the unit on Position and Orientation for the purposes of the book organisation continuing on from turns in earlier books.* • Use a protractor to measure angles • Know a right angle is 90º • Begin to use language of angles to describe more or less than 90º, (acute or obtuse) more than 180º (reflex)	
Unit 9: Measurement **Chapter 24 Measuring Mass** • Know how many grams in a kilogram • Record grams as a fraction of a kilogram in decimal format • Estimate mass using a benchmark • Read different scales • Weigh accurately to the closest 5g • Solve problems involving conversion between units of mass **Chapter 25 Measuring Lengths** • Record centimetres as a fraction of a metre • Measure accurately to the closest millimetre • Record millimetres as a fraction of a centimetre • Know perimeter as distance around a closed shape **Chapter 26 Measuring Areas** • Know area as the surface of a closed shape • Know standard units for measuring areas, cm² m² km² • Devise the rule for finding the area of a rectangle based on knowledge of arrays • Understand the area of a shape is not dependent on it's perimeter • Solve problems invoving perimeters and areas	**Student Resources:** Measurement problems

Unit 10: Time
Chapter 27 Telling the Time
- Read a digital clock display and know the closest hour of half hour
- Read an analogue clock to the closest 5 minutes
- Use a.m. and p.m. to be more specific in describing points in time

Chapter 28 Measuring Time
- Know larger units of time and meaning of prefixes ((Decade, Century)
- Investigate Maramataka (Maori Lunar calendar, not in Maths Aotearoa but use other resources)
- Solve simple problems involving duration of time (no conversion between units of time)
- Measure time using a stopwatch