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

No progress steps are given for year 5 in measurement so it is essential to look at the progress outcomes for year 6, along with the learning progressions and consider the stepping stones and learning oppprtunities students can build on to achieve the progress outcomes specified for end of the phase. Year 5 learning opportunities come from Book 3A of Maths Aotearoa as part of the structured approach to learning mathematical concepts, skills and knowledge and connect closely with students beginning to make sense of decimal numbers. The metric measurement system is a decimal system and provides a meaningful context to introduce decimal numbers. Some mini projects could be left to year 6 as assessment tasks to demonstrate ahievement of specific progress outcomes.

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 measurement problems

Phase 2: Year 5

Understand: (big ideas)	Do (practices)
• Use maths to seek and understand patterns and relationships • Use maths to work with and make sense of change and variation • Use maths logic & reasoning to explain relationships and justify conclusions • Make use of different cultural views and ideas about mathematics • Embrace the history and evolution of mathematics	Students will have learning opportunities to: • Investigate situations • Represent situations • Connect situations • Generalise findings • Explain and justify findings

Know: Context of Measurement

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

Concepts being developed	Key knowledge being developed
• Understand angle as a measure of rotation about a fixed point • Begin to understand the decimal relationship between standard units of measure • Understand area as a multiplicative measure • Understand perimeter as a linear (additive) measure • Begin to record measurement rules as equations • Understand cyclic nature of time and that any point in time can be considered the zero point.	• Recognise right angles • Knows perimeter as the outside length of a 2D shape • 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 **Student Resources:** Measurement problems
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, cm^2 m^2 km^2 • 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	

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	