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

No progress steps are given for year 4 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 4 learning opportunities come from Book 2B of Maths Aotearoa as part of the structured approach to learning mathematical concepts, skills and knowledge.

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 4

Understand: (big ideas)	Do (practices)
• Maths is about seeking patterns and relationships • Maths is about working with change and variation • Maths involves reasoning - from observations and prior knowledge • Maths develops within different cultures • Maths is created by humans and therefore has a history and continues to evolve.	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
• Begin to develop a concept of angle • Understand measurement units can be partitioned into parts of units and units can be combined, joined and separated • Develop an understanding of the cyclic nature of time - no defined beginning or end point	• Recognise right angles • Knows perimeter as the outside length of a 2D shape • Knows 100cm - 1m. 10mm = 1cm • Know 1000g = 1kg • know 1000mL= 1L • Know 12 months = 1 year • Know 24 hours = 1 day • Know 60 minutes = 1 hour

Maths Aotearoa Book 2B	Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)
Unit 6: Chapter 18 Lines and Angles *This chapter sits under the unit on geometric shapes - it involves using a ruler to draw straight lines (and possibly measure but not necessarily) Angle activities focus on right angles as a property of squares and oblongs - hence the term rectangle.* • 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	**Teacher Professional Resources:** **Curriculum Knowledge: Measurement** • Pocket Guide: Learning to 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 9: Chapter 24 Using a Ruler to Measure Length • Understand a scale and the position of zero and other numbers are recorded at the end of each unit. • Find a benchmark for 1cm (most convenient is a body measurement) • Estimate lengths in centimetres • Position a ruler correctly and accurately to measure a length to nearest whole or half centimetre • Identify and measure the perimeter of shapes • Create a rule for finding the perimeter of a square • Create a rule for finding a perimeter of a rectangle (oblong)	
Unit 10: Chapter 25 Measuring Mass • Understand the difference between scale as on a ruler (or a graph) and scales as a device for measuring mass • Investigate as many different measurement devices for mass as are available • Find a benchmark for 1kg • Estimate mass as more or less than 1kg, 1/2 kg, 1/4kg	
Unit 11: Chapter 26 Exploring Area • Understand area as a measure of the surface enclosed in a plane shape • Know area is measured using a single shape that will tessellate • Know the standard unit for measuring area is the square centimetre (cm^2) • Make connections between using arrays and measuring area.	

Unit 12: Time **Chapter 27 Units of Time** • Understand that time is not based on groups of 10 • The size of the unit can vary - months can have a different number of days • Begin to convert between units of time • Investigate the nature of time in the world around us - timezones, world clock, moon phases, Maramataka (The Maori Lunar Calendar) **Chapter 28 Telling the Time** • Know the function of each hand on an analogue clock • Read an analogue clock to the closest 5 minutes • Know the meaning of the numbers in a digital time display • Switch between analogue and digital time displays BLM 7 Analogue clock faces	