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 in year 5. Book 3A chooses to further explore circles. 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 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 Geometry

Shapes	Spatial Reasoning	Pathways
Identify, classify, and describe the attributes of: • regular and irregular polygons, using edges, vertices and angles • prisms, using cross sections, faces, edges and vertices Identify and describe parallel and perpendicular lines, including those forming sides of polygons.	Visualise 3D shapes and connect the withe nets, 2D diagrams, verbal descriptions, and the same shapes drawn from different perspectives. Resize (enlarge or reduce) a 2 D shape.	Interpret and create grid maps to plot positions and pathways, using grid references and directional language including the four main compass points.

Maths Literacy Development

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

Concepts being developed	Key knowledge being developed
• Direction (which way?), Distance (How far?), Location (Where?) • Angle as a turn around a fixed point • Reflective and rotational symmetry • Transformations • Understand properties of 2D shapes • Spatial thinking • Spatial reasoning • Spatial visualisation • Multiplicative and proportional thinking	• Know about the existence of pi (π) • Know the properties of cubes and cuboids • Know enlargements (and reduction) proportionally alters lengths but not angles • Know 360º in a full turn, 180º in a half turn, 90º in a quarter turn • Know terms acute angle, obtuse angle and reflex angle • Know scale on a map as a multiplier • Know convention for writing co-ordinate pairs

Maths Aotearoa Book 3A	Support Material available from Wilkie Way website wilkieway.co.nz: membership area (subscription)
Unit 6: Geometric Shapes	**Teacher Professional Resources:**
Chapter 16 Exploring Circles • Use a pair of compasses to draw a circle • Introduction to the geometric language specifically associated with circles **Chapter 17 Exploring Cubes and Cuboids** • Describe the properties of cubes and cuboids • Recognise and draw a net for a cube or cuboid • Draw cubes and cuboids using translation • Draw cubes and cuboids using isometric paper	**Curriculum Knowledge:** **Geometry** Pocket Guide: Further Developing Geometric Thinking Geometric Progressions **Student Resources** Geometric Problems **Video Lessons** Lines, angles and triangles Drawing plane shapes
Unit 7: Transformations	
Chapter 18 Reflective Symmetry • Recognise reflective symmetry in shapes • Create shapes with reflective symmetry • Understand how distance from a line of symmetry plays a part in the reflected image **Chapter 19 Tessellations** • Understand and use the features of shapes that make tessellation possible • Draw triangles using a ruler and compass • Translate and reflect shapes to create a tessellating pattern **Chapter 20 Enlargements** • Understand term "scale factor" • Enlarge a 2D shape using grids • Enlarge a simple 3D shape using multi link cubes	

Unit 8: Position and Orientation

Chapter 21 Investigating Angles
This chapter was also included in the measurement plan as it involves the measurement of angles
- 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)
- Use degrees to describe rotation between compass points

Chapter 22 Plans and Directions
- Read simple maps and plans
- Read a distance on a map using a simple scale
- Enlarge shapes using a specific ratio

Chapter 23 Co-ordinates and Graphs
- Read co-ordinate pairs
- Plot co-ordinate pairs
- Interpret time series data