



Rangi Ruru
Girls' School

YEAR 10 PANGARAU MATHEMATICS 2024

TERM	Weeks	Start Date	End Date	Weeks
TERM 1	11 weeks	29 JAN	12 APRIL	
1.	Number - Calculators, fractions, exponents TEST			4
2.	Pythagoras			1
3.	Perimeter and Area, time, speed			3
4.	Trigonometry and Navigation TEST			3
TERM 2	9 weeks	6 MAY	5 JULY	
5.	Statistics			2
6.	Transf geo/ prob revision/Geo (CAMPS)			3
7.	Percentages, ratios, rates TEST			4
TERM 3	9 weeks	29 JULY	27 SEPTEMBER	
8.	Linear Algebra – Graphs (rates, formula, eqns)			2
9.	Volume, Surface Area TEST			2
10.	Revision			3
	Numeracy Assessment – CAA – Week 8 (Sept 9-13)			1
11.	Linear Algebra contd.			1
TERM 4	7 weeks	14 OCTOBER	5 DECEMBER	
12.	Linear Algebra contd.			2
13.	Quadratic Algebra TEST			4

Rangi Values	How will ākonga demonstrate these values?	Rangi Graduate Dispositions	How will ākonga develop these dispositions?	Culturally Empowering Pedagogy	
Respect/Whakaute	Ākonga will show respect for their classmates at all times, understanding the need for differentiation, and differing paces of learning. Ākonga will show respect for the subject and Kaiako by completing homework, listening and following all instructions.	Be You	Ākonga are encouraged to be curious through asking questions. Ākonga are encouraged to develop their learning strategies through trying different approaches to see what works for them.	Tikanga, Te Reo Maori and Mātauranga Maori will be woven into this learning through:	Kaiako and Ākonga are encouraged to use te reo maori where they feel appropriate/confident. The environment will demonstrate Manaakitanga for all Ākonga. Authentic mātauranga maori mathematical contexts will be included where appropriate. All Ākonga will see where the Mathematics being studied is relevant to them – purpose, how it relates to them and fits into their world (the Kaupapa).
Aroha	Ākonga will support other learners by participating in an inclusive and positive classroom culture	Belong	Ākonga are encouraged to link their learning to personal experiences and local contexts (e.g. real-life contexts and datasets)		
Enthusiasm & Endeavour Rikarika & Ngana	Ākonga will strive for their own personal best in learning, and will be encouraged to attempt extension activities, online practice, and attend offered tutorials.	Be The Change	Ākonga are encouraged to be creative with solutions and developing original solutions.		
Generosity of Spirit Manaakitanga	Ākonga will support each other and provide support for others when needed, helping classmates when appropriate.	Be Your Best	Ākonga are encouraged to strive for their own personal best in their learning – personalised learning.	Opportunities for cultures of other students will be incorporated through:	
Integrity/Tika	Ākonga will show integrity by ensuring they submit authentic evidence of their learning.				

Progress outcomes typically by the end of year 10		
Understand/ kia mārama	Know/ kia mōhio	Do/kia mahi
<ul style="list-style-type: none"> * The world is full of patterns and structures that we use mathematics to understand * The world is characterised by change and variation that we use mathematics to understand * Mathematical logic and reasoning enable us to identify and explain relationships and to justify conclusions. * The interface between mātauranga Māori and mātauranga mathematics offers opportunities for insights that uphold the integrity of each knowledge system * Mathematics has a continuous, evolving human history. 	<ul style="list-style-type: none"> *add and subtract fractions, including algebraic, with different denominators by using equivalent fractions * find fractions or percentages of a number * use rates to model and represent change *use and apply ratios to model everyday situations *express functions arising from linear and simple quadratic patterns *substitute into, rearrange, and simplify expressions, combining like terms as needed *create or use a formula, rule, equation, or inequality, solve for unknowns, and evaluate by substitution *estimate, calculate, and represent accurately measurements using significant figures 	<ul style="list-style-type: none"> * Te tūhura pūāhua Investigating situations <ul style="list-style-type: none"> - pose a question for investigation - find entry points for addressing a question, identifying relevant prior knowledge, givens, assumptions, constraints, relationships, and concepts - plan an investigation pathway and follow it in a systematic and organised way - monitor and evaluate progress, adjusting the investigation pathway if needed - make sense of outcomes or conclusions in light of a given situation and context * Te whakaata pūāhua Representing situations <ul style="list-style-type: none"> - use representations to find, compare, explore, simplify, illustrate, prove, and justify patterns, variations, and trends - use representations to learn new ideas, explain ideas to others, investigate conjectures, and support arguments

	<p>*find the surface area and volume or capacity of prisms and cylinders scale a shape by a factor and derive the scale factor for the scaled shape's area or volume</p> <p>*use the properties of similarity in two-dimensional shapes, including right angled triangles, to find unknown lengths</p> <p>* use and apply Pythagoras' theorem and Trigonometry to find unknown sides and angles in a right-angled triangle</p> <p>*represent three-dimensional shapes with two-dimensional drawings and digital tools</p> <p>*pose summary and comparison investigative questions about populations, and investigative questions for time-series and relationship data and for experiments plan to collect data for observational studies and experiments, including selecting valid and reliable measurements for variables or sourcing existing datasets</p> <p>*communicate findings using evidence from analysis, provide possible explanations for findings, and reflect on predictions or assertions</p>	<p>- select, create, or adapt appropriate mental, oral, physical, virtual, graphical, or diagrammatic representations</p> <p>- use visualisation to mentally represent and manipulate relationships, objects, and ideas.</p> <p>* Te tūhono pūāhua Connecting situations</p> <p>- suggest connections between ideas and approaches</p> <p>- suggest connections between different representations</p> <p>- connect new ideas to things I already know</p> <p>- make connections to ideas in other learning areas and in a range of cultural, linguistic, and historical contexts.</p>
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