A resource for teachers

Aligning the NCEA Co-requisite and the refreshed NZC

Te Tāhuhu o te Mātauranga
Ministry of Education

Numeracy: *US 32406* *Apply mathematics and statistics in a range of everyday situations*

The Co-requisite Common Assessment Activities (CAA's) assess when students have control of Phase 3 and have begun to work at Phase 4 of the New Zealand Curriculum (NZC). If students are not at this level, they are not ready for the CAA's.

It is expected that the prior knowledge students gain from Phase 1-3 of the NZC is carried over and informs their learning to support the alignment with the Co-requisite.

In the Mathematics and Statistics Learning Area of the NZC the Knowledge and Practices of all six strands are relevant to every outcome of the NCEA Co-requisite. As well as these strands, following mathematical and statistical processes to learn knowledge and practices and develop understanding of the big ideas are applicable:

NCEA Co-requisite standard 32406	Refreshed Mathematics and Statistics Curriculum	Phase 4
	Strands: Number, Algebra, Measurement, Geometry, Statistics, Probability.	**Mathematical and Statistical Processes**
Outcome 1: Formulate mathematical and statistical approaches to solving problems in a range of everyday situations.		

	Strands: Number, Algebra, Measurement, Geometry, Statistics, Probability.		Mathematical and Statistical Processes
Performance criteria **1.1** Select an appropriate operation, representation, variable, and/or method to solve the problem(s).	**Number** **Algebra** **Measurement** **Geometry** **Statistics** **Probability**	**Number, Structures and operations** **Financial mathematics** **Equations and relationships** **Measuring** **Shapes** **Spatial reasoning** **Developing knowledge from data** **Visualisation of data** **Interpretation of data** **Experimental and theoretical probability**	Investigating situations Students investigate situations by using mathematics and statistics to describe, explore, and build their understanding of the situation. Investigating includes applying and transferring mathematics and statistics knowledge. The situations can be mathematical or contextual. Students often begin investigating by making sense of a question and then plan an approach to proceed in systematic but flexible ways, using mathematical and statistical concepts and procedures to take action. Students conclude the investigation by evaluating whether the findings were meaningful in context, and reflection on their approaches and choices to inform future investigations. Representing situations Students represent situations using words, materials, symbols, graphs, or diagrams to show concepts and findings. Students use representations to compare, simplify, illustrate, and communicate, as well as to investigate patterns, variations, and trends. Representing a situation in multiple ways enables flexible thinking and deeper understanding.
Outcome 2: Use mathematics and statistics to meet the numeracy demands of a range of everyday situations.			

	Strands: Number, Algebra, Measurement, Geometry, Statistics, Probability.		Mathematical and Statistical Processes
Performance criteria **2.1** Apply mathematical and statistical procedures correctly in situations.	**Number** **Algebra** **Measurement** **Geometry** **Statistics** **Probability**	**Number, Structures and operations** **Financial mathematics** **Equations and relationships** **Measuring** **Shapes** **Spatial reasoning** **Developing knowledge from data** **Visualisation of data** **Interpretation of data** **Experimental and theoretical probability**	Representing situations Students represent situations using words, materials, symbols, graphs, or diagrams to show concepts and findings. Students use representations to compare, simplify, illustrate, and communicate, as well as to investigate patterns, variations, and trends. Representing a situation in multiple ways enables flexible thinking and deeper understanding. Connecting situations Students connect situations when they notice and recognise patterns and similarities. Connecting helps students to build the relationships between concepts and procedures in mathematics and statistics, forming a web of interconnected ideas that are easier to remember and understand. Connecting also involves students transferring and applying their mathematics and statistics knowledge to a range of contexts and to other learning areas. Generalising findings Students generalise findings by moving from specific examples to general principles. Students use patterns, regularities, and structures to make conjectures that might apply to other situations, which can be tested and refined to determine if they apply in all cases. In statistics, students generalise by using trends and variation in data to make conjectures and to communicate and evaluate claims about similar situations.

	Strands: Number, Algebra, Measurement, Geometry, Statistics, Probability.		Mathematical and Statistical Processes
Outcome 3: Explain mathematical and statistical responses to situations.			
Performance criteria **3.1** Explain mathematical and statistical responses to situations.	**Number** **Algebra** **Measurement** **Geometry** **Statistics** **Probability**	**Number, Structures and operations** **Financial mathematics** **Equations and relationships** **Measuring** **Shapes** **Spatial reasoning** **Developing knowledge from data** **Visualisation of data** **Interpretation of data** **Experimental and theoretical probability**	Generalising findings Students generalise findings by moving from specific examples to general principles. Students use patterns, regularities, and structures to make conjectures that might apply to other situations, which can be tested and refined to determine if they apply in all cases. In statistics, students generalise by using trends and variation in data to make conjectures and to communicate and evaluate claims about similar situations. Explaining and justifying findings Students explain and justify findings by using mathematical and statistical ways of communicating to share their ideas and reasoning, and to respond to the ideas and reasoning of others. Explaining is how students communicate their conjectures, build arguments, and unpack stories from data. Justifying involves describing why decisions and findings are reasonable.