

NZ CURRICULUM ACHIEVEMENT OBJECTIVES & NATIONAL STANDARDS FOR MATHEMATICS:

Level One: Number and Algebra

New Zealand Curriculum Level 1	National Standards	
	Year 1	Year 2
<p>Number strategies</p> <ul style="list-style-type: none"> Use a range of counting, grouping, and equal-sharing strategies with whole numbers and fractions. <p>Number knowledge</p> <ul style="list-style-type: none"> Know the forward and backward counting sequences of whole numbers to 100. Know groupings with five, within ten, and with ten. <p>Equations and expressions</p> <ul style="list-style-type: none"> Communicate and explain counting, grouping, and equal-sharing strategies, using words, numbers, and pictures. <p>Patterns and relationships</p> <ul style="list-style-type: none"> Generalise that the next counting number gives the result of adding one object to a set and that counting the number of objects in a set tells how many. Create and continue sequential patterns. 	<ul style="list-style-type: none"> apply counting-all strategies; Continue sequential patterns and number patterns based on ones. 	<ul style="list-style-type: none"> apply counting-on, counting-back, skip-counting, and simple grouping strategies to combine or partition whole numbers; use equal sharing and symmetry to find fractions of sets, shapes, and quantities; create and continue sequential patterns by identifying the unit of repeat; continue number patterns based on ones, twos, fives, and tens.

Level One: Geometry and Measurement

New Zealand Curriculum Level 1	National Standards	
	Year 1	Year 2
<p>Measurement</p> <ul style="list-style-type: none"> Order and compare objects or events by length, area, volume and capacity, weight (mass), turn (angle), temperature, and time by direct comparison and/or counting whole numbers of units. <p>Shape</p> <ul style="list-style-type: none"> Sort objects by their appearance. <p>Position and orientation</p> <ul style="list-style-type: none"> Give and follow instructions for movement that involve distances, directions, and half or quarter turns. Describe their position relative to a person or object. <p>Transformation</p> <ul style="list-style-type: none"> Communicate and record the results of translations, reflections, and rotations on plane shapes. 	<ul style="list-style-type: none"> compare the lengths, areas, volumes or capacities, and weights of objects directly; sort objects and shapes by a single feature and describe the feature, using everyday language; represent reflections and translations by creating patterns; describe personal locations and give directions, using everyday language. 	<ul style="list-style-type: none"> compare the lengths, areas, volumes or capacities, and weights of objects and the durations of events, using self-chosen units of measurement; sort objects and shapes by different features and describe the features, using mathematical language; represent reflections and translations by creating and describing patterns; describe personal locations and give directions, using steps and half- or quarter-turns.

Level One: Statistics

New Zealand Curriculum Level 1	National Standards	
	Year 1	Year 2
<p>Statistical investigation</p> <ul style="list-style-type: none"> Conduct investigations using the statistical enquiry cycle: <ul style="list-style-type: none"> - posing and answering questions; - gathering, sorting and counting, and displaying category data; - discussing the results. <p>Statistical literacy</p> <ul style="list-style-type: none"> Interpret statements made by others from statistical investigations and probability activities. <p>Probability</p> <ul style="list-style-type: none"> Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes. 	<ul style="list-style-type: none"> investigate questions by using the statistical enquiry cycle (with support), gathering, displaying, and/or counting category data. 	<ul style="list-style-type: none"> investigate questions by using the statistical enquiry cycle (with support), gathering, displaying, and/or identifying similarities and differences in category data; describe the likelihoods of outcomes for a simple situation involving chance, using everyday language.

Level Two: Number and Algebra

New Zealand Curriculum Level 2	National Standards	
<p>Number strategies</p> <ul style="list-style-type: none"> Use simple additive strategies with whole numbers and fractions. <p>Number knowledge</p> <ul style="list-style-type: none"> Know forward and backward counting sequences with whole numbers to at least 1000. Know the basic addition and subtraction facts. Know how many ones, tens, and hundreds are in whole numbers to at least 1000. Know simple fractions in everyday use. <p>Equations and expressions</p> <ul style="list-style-type: none"> Communicate and interpret simple additive strategies, using words, diagrams (pictures), and symbols. <p>Patterns and relationships</p> <ul style="list-style-type: none"> Generalise that whole numbers can be partitioned in many ways. Find rules for the next member in a sequential pattern. 	<p>Year 3</p> <ul style="list-style-type: none"> apply basic addition facts and knowledge of place value and symmetry to: <ul style="list-style-type: none"> - combine or partition whole numbers - find fractions of sets, shapes, and quantities; create and continue sequential patterns with one or two variables by identifying the unit of repeat; continue spatial patterns and number patterns based on simple addition or subtraction. 	<p>Year 4</p> <ul style="list-style-type: none"> apply basic addition and subtraction facts, simple multiplication facts, and knowledge of place value and symmetry to: <ul style="list-style-type: none"> - combine or partition whole numbers - find fractions of sets, shapes, and quantities; create, continue, and give the rule for sequential patterns with two variables; create and continue spatial patterns and number patterns based on repeated addition or subtraction.

Level Two: Geometry and Measurement

New Zealand Curriculum Level 2	National Standards	
<p>Measurement</p> <ul style="list-style-type: none"> Create and use appropriate units and devices to measure length, area, volume and capacity, weight (mass), turn (angle), temperature, and time. Partition and/or combine like measures and communicate them, using numbers and units. <p>Shape</p> <ul style="list-style-type: none"> Sort objects by their spatial features, with justification. Identify and describe the plane shapes found in objects. <p>Position and orientation</p> <ul style="list-style-type: none"> Create and use simple maps to show position and direction. Describe different views and pathways from locations on a map. <p>Transformation</p> <ul style="list-style-type: none"> Predict and communicate the results of translations, reflections, and rotations on plane shapes. 	<p>Year 3</p> <ul style="list-style-type: none"> measure the lengths, areas, volumes or capacities, and weights of objects and the duration of events, using linear whole-number scales and applying basic addition facts to standard units; sort objects and two- and three-dimensional shapes by their features, identifying categories within categories; represent reflections, translations, and rotations by creating and describing patterns; describe personal locations and give directions, using whole-number measures and half- or quarter-turns. 	<p>Year 4</p> <ul style="list-style-type: none"> measure the lengths, areas, volumes or capacities, weights, and temperatures of objects and the duration of events, reading scales to the nearest whole number and applying addition, subtraction, and simple multiplication to standard units; sort objects and two- and three-dimensional shapes by two features simultaneously; represent and describe the symmetries of a shape; create nets for cubes; describe personal locations and give directions, using simple maps.

Level Two: Statistics

New Zealand Curriculum Level 2	National Standards	
<p>Statistical investigation</p> <ul style="list-style-type: none"> Conduct investigations using the statistical enquiry cycle: <ul style="list-style-type: none"> - posing and answering questions; - gathering, sorting, and displaying category and whole-number data; - communicating findings based on the data. <p>Statistical literacy</p> <ul style="list-style-type: none"> Compare statements with the features of simple data displays from statistical investigations or probability activities undertaken by others. <p>Probability</p> <ul style="list-style-type: none"> Investigate simple situations that involve elements of chance, recognising equal and different likelihoods and acknowledging uncertainty. 	<p>Year 3</p> <ul style="list-style-type: none"> investigate questions by using the statistical enquiry cycle (with support): <ul style="list-style-type: none"> - gather and display category and simple whole-number data - interpret displays in context; compare and explain the likelihoods of outcomes for a simple situation involving chance. 	<p>Year 4</p> <ul style="list-style-type: none"> investigate questions by using the statistical enquiry cycle independently: <ul style="list-style-type: none"> - gather and display category and simple whole-number data - interpret displays in context; compare and explain the likelihoods of outcomes for a simple situation involving chance, acknowledging uncertainty.

Level Three: Number and Algebra

New Zealand Curriculum Level 3	National Standards	
	Year 5	Year 6
<p>Number strategies</p> <ul style="list-style-type: none"> Use a range of additive and simple multiplicative strategies with whole numbers, fractions, decimals, and percentages. <p>Number knowledge</p> <ul style="list-style-type: none"> Know basic multiplication and division facts. Know counting sequences for whole numbers. Know how many tenths, tens, hundreds, and thousands are in whole numbers. Know fractions and percentages in everyday use. <p>Equations and expressions</p> <ul style="list-style-type: none"> Record and interpret additive and simple multiplicative strategies, using words, diagrams, and symbols, with an understanding of equality. <p>Patterns and relationships</p> <ul style="list-style-type: none"> Generalise the properties of addition and subtraction with whole numbers. Connect members of sequential patterns with their ordinal position and use tables, graphs, and diagrams to find relationships between successive elements of number and spatial patterns. 	<ul style="list-style-type: none"> apply additive and simple multiplicative strategies and knowledge of symmetry to: <ul style="list-style-type: none"> - combine or partition whole numbers - find fractions of sets, shapes, and quantities; create, continue, and predict further members of sequential patterns with two variables; describe spatial and number patterns, using rules that involve spatial features, repeated addition or subtraction, and simple multiplication. 	<ul style="list-style-type: none"> apply additive and simple multiplicative strategies flexibly to: <ul style="list-style-type: none"> - combine or partition whole numbers, including performing mixed operations and using addition and subtraction as inverse operations - find fractions of sets, shapes, and quantities; determine members of sequential patterns, given their ordinal positions; describe spatial and number patterns, using: <ul style="list-style-type: none"> - tables and graphs - rules that involve spatial features, repeated addition or subtraction, and simple multiplication.

Level Three: Geometry and Measurement

New Zealand Curriculum Level 3	National Standards	
	Year 5	Year 6
<p>Measurement</p> <ul style="list-style-type: none"> Use linear scales and whole numbers of metric units for length, area, volume and capacity, weight (mass), angle, temperature, and time. Find areas of rectangles and volumes of cuboids by applying multiplication. <p>Shape</p> <ul style="list-style-type: none"> Classify plane shapes and prisms by their spatial features. Represent objects with drawings and models. <p>Position and orientation</p> <ul style="list-style-type: none"> Use a co-ordinate system or the language of direction and distance to specify locations and describe paths. <p>Transformation</p> <ul style="list-style-type: none"> Describe the transformations (reflection, rotation, translation, or enlargement) that have mapped one object. 	<ul style="list-style-type: none"> measure time and the attributes of objects, choosing appropriate standard units and working with them to the nearest tenth; sort two- and three-dimensional shapes, considering the presence and/or absence of features simultaneously and justifying the decisions made; represent and describe the results of reflection, rotation, and translation on shapes; create nets for rectangular prisms; draw plan, front, and side views of objects describe locations and give directions, using grid references and points of the compass. 	<ul style="list-style-type: none"> measure time and the attributes of objects, choosing appropriate standard units; use arrays to find the areas of rectangles and the volumes of cuboids, given whole-number dimensions; sort two- and three-dimensional shapes (including prisms), considering given properties simultaneously and justifying the decisions made; represent and describe the results of reflection, rotation, and translation on shapes or patterns; identify nets for rectangular prisms; draw or make objects, given their plan, front, and side views; describe locations and give directions, using grid references, turns, and points of the compass.

Level Three: Statistics

New Zealand Curriculum Level 3	National Standards	
	Year 5	Year 6
<p>Statistical investigation</p> <ul style="list-style-type: none"> Conduct investigations using the statistical enquiry cycle: <ul style="list-style-type: none"> - gathering, sorting, and displaying multivariate category and whole number data and simple time-series data to answer questions; - identifying patterns and trends in context, within and between data sets; - communicating findings, using data displays. <p>Statistical literacy</p> <ul style="list-style-type: none"> Evaluate the effectiveness of different displays in representing the findings of a statistical investigation or probability activity undertaken by others. <p>Probability</p> <ul style="list-style-type: none"> Investigate simple situations that involve elements of chance by comparing experimental results with expectations from models of all the outcomes, acknowledging that samples vary. 	<ul style="list-style-type: none"> investigate summary and comparison questions by using the statistical enquiry cycle: <ul style="list-style-type: none"> - gather, display, and identify patterns in category and whole-number data - interpret results in context; order the likelihoods of outcomes for simple situations involving chance, experimenting or listing all possible outcomes. 	<ul style="list-style-type: none"> investigate summary and comparison questions by using the statistical enquiry cycle: <ul style="list-style-type: none"> - gather or access multivariate category and whole-number data - sort data into categories or intervals, display it in different ways, and identify patterns - interpret results in context, accepting that samples vary; order the likelihoods of outcomes for situations involving chance, considering experimental results and models of all possible outcomes.

Level Four: Number and Algebra

New Zealand Curriculum Level 4	National Standards	
	Year 7	Year 8
<p>Number strategies and knowledge</p> <ul style="list-style-type: none"> Use a range of multiplicative strategies when operating on whole numbers. Understand addition and subtraction of fractions, decimals, and integers. Find fractions, decimals, and percentages of amounts expressed as whole numbers, simple fractions, and decimals. Apply simple linear proportions, including ordering fractions. Know the equivalent decimal and percentage forms for everyday fractions. Know the relative size and place value structure of positive and negative integers and decimals to three places. <p>Equations and expressions</p> <ul style="list-style-type: none"> Form and solve simple linear equations. <p>Patterns and relationships</p> <ul style="list-style-type: none"> Generalise properties of multiplication and division with whole numbers. Use graphs, tables, and rules to describe linear relationships found in number and spatial patterns. 	<ul style="list-style-type: none"> apply additive and multiplicative strategies flexibly to whole numbers, ratios, and equivalent fractions (including percentages); apply additive strategies to decimals; balance positive and negative amounts; find and represent relationships in spatial and number patterns, using: <ul style="list-style-type: none"> tables and graphs general rules for linear relationships. 	<ul style="list-style-type: none"> apply multiplicative strategies flexibly to whole numbers, ratios, and equivalent fractions (including decimals and percentages); use multiplication and division as inverse operations on whole numbers; apply additive strategies flexibly to decimals and integers; find and represent relationships in spatial and number patterns, using: <ul style="list-style-type: none"> tables and graphs equations for linear relationships recursive rules for non-linear relationships; apply inverse operations to simple linear relationships.

Level Four: Geometry and Measurement

New Zealand Curriculum Level 4	National Standards	
	Year 7	Year 8
<p>Measurement</p> <ul style="list-style-type: none"> Use appropriate scales, devices, and metric units for length, area, volume and capacity, weight (mass), temperature, angle, and time. Convert between metric units, using whole numbers and commonly used decimals. Use side or edge lengths to find the perimeters and areas of rectangles, parallelograms, and triangles and the volumes of cuboids. Interpret and use scales, timetables, and charts. <p>Shape</p> <ul style="list-style-type: none"> Identify classes of two- and three-dimensional shapes by their geometric properties. Relate three-dimensional models to two-dimensional representations, and vice versa. <p>Position and orientation</p> <ul style="list-style-type: none"> Communicate and interpret locations and directions, using compass directions, distances, and grid references. <p>Transformation</p> <ul style="list-style-type: none"> Use the invariant properties of figures and objects under transformations (reflection, rotation, translation, or enlargement). 	<ul style="list-style-type: none"> measure time and the attributes of objects, using metric and other standard measures; make simple conversions between units, using whole numbers; use side or edge lengths to find the perimeters and areas of rectangles and parallelograms and the volumes of cuboids, given whole-number dimensions; sort two- and three-dimensional shapes into classes, defining properties and justifying the decisions made; identify and describe the transformations that have produced given shapes or patterns; create or identify nets for rectangular prisms and other simple solids; draw plan, front, side, and perspective views of objects; describe locations and give directions, using grid references, simple scales, turns, and points of the compass. 	<ul style="list-style-type: none"> use metric and other standard measures; make simple conversions between units, using decimals; use side or edge lengths to find the perimeters and areas of rectangles, parallelograms, and triangles and the volumes of cuboids; sort two- and three-dimensional shapes into classes, considering the relationships between the classes and justifying the decisions made; identify and describe the features of shapes or patterns that change or do not change under transformation; create or identify nets for rectangular prisms and other simple solids, given particular requirements; draw or make objects, given their plan, front, and side views or their perspective views; describe locations and give directions, using scales, bearings, and co-ordinates.

Level Four: Statistics

New Zealand Curriculum Level 4	National Standards	
	Year 7	Year 8
<p>Statistical investigation</p> <ul style="list-style-type: none"> • Plan and conduct investigations using the statistical enquiry cycle: <ul style="list-style-type: none"> - determining appropriate variables and data collection methods; - gathering, sorting, and displaying multivariate category, measurement, and time-series data to detect patterns, variations, relationships and trends; - comparing distributions visually; - communicating findings, using appropriate displays. <p>Statistical literacy</p> <ul style="list-style-type: none"> • Evaluate statements made by others about the findings of statistical investigations and probability activities. • <p>Probability</p> <ul style="list-style-type: none"> • Investigate situations that involve elements of chance by comparing experimental distributions with expectations from models of the possible outcomes, acknowledging variation and independence. • Use simple fractions and percentages to describe probabilities. 	<ul style="list-style-type: none"> • investigate summary, comparison, and relationship questions by using the statistical enquiry cycle: <ul style="list-style-type: none"> - gather or access multivariate category and measurement data - sort data and display it in multiple ways, identifying patterns and variations - interpret results in context, accepting that samples vary and have no effect on one another; • order the likelihoods of outcomes for situations involving chance, checking for consistency between experimental results and models of all possible outcomes. 	<ul style="list-style-type: none"> • investigate summary, comparison, and relationship questions by using the statistical enquiry cycle: <ul style="list-style-type: none"> - gather or access multivariate category, measurement, and time-series data - sort data and display it in multiple ways, identifying patterns, variations, relationships, and trends and using ideas about middle and spread where appropriate - interpret results in context, identifying factors that produce uncertainty; • express as fractions the likelihoods of outcomes for situations involving chance, checking for consistency between experimental results and models of all possible outcomes.