

# Mathletics

## New Zealand Program of Studies

### Understanding Practice and Fluency (UPF)



Year 2  
November, 2021

Mathletics

# Mathletics

New Zealand Program of Studies

Understanding, Practice and Fluency (UPF)

November 2021

<b>Year 2 .....</b>	<b>3</b>
<b>1 Number and Algebra .....</b>	<b>3</b>
1.1 Number strategies.....	3
1.2 Number knowledge .....	3
1.3 Equations and expressions.....	4
1.4 Patterns and relationships.....	4
<b>2 Geometry and Measurement .....</b>	<b>5</b>
2.1 Measurement .....	5
2.2 Shape.....	5
2.3 Position and orientation.....	5
2.4 Transformation.....	6
<b>3 Statistics .....</b>	<b>7</b>
3.1 Statistical investigation.....	7
3.2 Probability .....	7

# Year 2

## 1 Number and Algebra

### 1.1 Number strategies

Outcome	Quests	Content
1. Use a range of counting, grouping, and equal-sharing strategies with whole numbers and fractions.	Skip counting	Skip counting by 2s to 100
		Skip counting by 5s to 100
		Skip counting by 10s to 100
		Skip counting by 2s, 5s & 10s to 100
	Counting strategies	Counting in tens & ones
		Count in tens with 2-digit numbers on the decade
		Count in tens with 2-digit numbers off the decade
	Addition & subtraction to 20	Adding to 20
		Subtracting within 20
		Adding & subtracting zero within 20
		Adding/subtracting using counting on & back to 20
		Introducing the commutative property of addition
	Add & subtract to 100 - count on & back	Using count on & back to add & subtract to 100
	Group & skip count to multiply	Grouping & skip counting to multiply
Share & group to divide	Sharing to divide up to 20	
	Grouping to divide	
Understand halves & quarters	Understanding halves	
	Understanding quarters	

### 1.2 Number knowledge

2. Know the forward and backward counting sequences of whole numbers to 100.	Count sequence to 100	Counting by 1s to 100
		Identifying numbers before & after up to 100
		Comparing & ordering sets up to 50
		Comparing & ordering numbers to 100
3. Know groupings with five, within ten, and with ten.	Number bonds to 10	Using number bonds to 10
	Doubles to 10	Recalling doubles to 10
	Understand 2-digit numbers	Reading, writing & representing 2-digit numbers

		Identifying place value of 2-digit numbers
		Partitioning 2-digit numbers

### 1.3 Equations and expressions

4. Communicate and explain counting, grouping, and equal-sharing strategies, using words, numbers, and pictures.	Equality & inequality	Exploring equality & inequality to 20
		Recognising equality in addition & subtraction
		Recording equalities to 20
		Solving add & subtract equality problems to 20
		Exploring change in quantity up to 20

### 1.4 Patterns and relationships

Outcome	Quests	Content
5. 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.	Count collections	Counting collections to 20
6. Create and continue sequential patterns.	Repeating patterns	Recognising repeating patterns
		Reproducing repeating patterns
		Manipulating repeating patterns
		Describing & creating repeating patterns
		Extending repeating patterns
		Translating repeating patterns

## 2 Geometry and Measurement

### 2.1 Measurement

Outcome	Quests	Content
1. 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.	Order & compare using measurement	Exploring length
		Exploring volume & capacity
		Exploring mass
		Exploring area
	Understand time	Telling the time
		Recalling days of the week

### 2.2 Shape

Outcome	Quests	Content
2. Sort objects by their appearance.	Introduce 2-D shapes	Introducing quadrilaterals
		Introducing octagons
		Introducing pentagons
		Introducing hexagons
		Comparing 2-D shapes
		Sorting 2-D shapes
	Introduce 3-D objects	Introducing spheres
		Introducing cones
		Introducing cubes
		Introducing cylinders
		Identifying and comparing 3-D objects
		Sorting 3-D shapes
	Composite 2-D shapes & 3-D objects	Identifying composite 2-D shapes
		Identifying composite 3-D objects
		Comparing 2-D shapes to parts of 3-D objects

### 2.3 Position and orientation

Outcome	Quests	Content
3. Give and follow instructions for movement that involve distances, directions, and half or quarter turns.	Understand directions & turns	Understanding left & right from opposite direction
	Follow & give directions	Following & giving directions
4. Describe their position relative to a person or object.	Describe position	Describing position

## 2.4 Transformation

Outcome	Quests	Content
5. Communicate and record the results of translations, reflections, and rotations on plane shapes.	Line symmetry	Understanding line symmetry
	Translations, reflections & rotations	Understanding translations
		Understanding reflections
		Understanding rotations

### 3 Statistics

#### 3.1 Statistical investigation

Outcome	Quests	Content
1. Conduct investigations using the statistical enquiry cycle: posing and answering questions; gathering, sorting and counting, and displaying category data; discussing the results.	Conduct investigations	Asking questions & collecting data
		Reading & understanding data
	Understand data displays	Understanding pictographs
		Understanding bar graphs

#### 3.2 Probability

Outcome	Quests	Content
3. Investigate situations that involve elements of chance, acknowledging and anticipating possible outcomes.	Probability	Understanding the language of probability
		Exploring possible outcomes



# Mathletics

For more information about Mathletics,  
contact our friendly team.

[www.mathletics.com/contact](http://www.mathletics.com/contact)



A 3P Learning Product