

Mathematics – Number and Algebra: Foundation – Level 6

Foundation Level	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Number and Algebra						
Number and place value			1	1	1	
Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point	Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero	Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences	Investigate the conditions required for a number to be odd or even and identify odd and even numbers	Investigate and use the properties of odd and even numbers	Identify and describe factors and multiples of whole numbers and use them to solve problems	Identify and describe properties of prime, composite, square and triangular numbers
Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond	Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line	Recognise, model, represent and order numbers to at least 1000	Recognise, model, represent and order numbers to at least 10 000	Recognise, represent and order numbers to at least tens of thousands	Use estimation and rounding to check the reasonableness of answers to calculations	Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations
Subitise small collections of objects	Count collections to 100 by partitioning numbers using place value	Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting	Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems	Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems	Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies	Investigate everyday situations that use integers. Locate and represent these numbers on a number line
Compare, order and make correspondences between collections, initially to 20, and explain reasoning	Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts	Explore the connection between addition and subtraction	Recognise and explain the connection between addition and subtraction	Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9	Solve problems involving division by a one digit number, including those that result in a remainder	
Represent practical situations to model addition and subtraction	Represent practical situations that model sharing	Solve simple addition and subtraction problems using a range of efficient mental and written strategies	Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation	Recall multiplication facts up to 10 × 10 and related division facts	Use efficient mental and written strategies and apply appropriate digital technologies to solve problems	
Represent practical situations to model sharing		Recognise and represent multiplication as repeated addition, groups and arrays	Recall multiplication facts of two, three, five and ten and related division facts	Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder	Recognise, represent and order numbers to at least hundreds of thousands	
		Recognise and represent division as grouping into equal sets and solve simple problems using these representations	Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies			
Money and financial mathematics						
Represent simple, everyday financial situations involving money	Recognise, describe and order Australian coins according to their value	Count and order small collections of Australian coins and notes according to their value	Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents	Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies	Create simple financial plans	Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies
Fractions and decimals			·		1	_
	Recognise and describe one-half as one of two equal parts of a whole	Recognise and interpret common uses of halves, quarters and eighths of shapes and collections	Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole	Investigate equivalent fractions used in contexts	Compare and order common unit fractions and locate and represent them on a number line	Compare fractions with related denominators and locate and represent them on a number line
				Count by quarters, halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line	Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator	Solve problems involving addition and subtraction of fractions with the same or related denominators
				Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation	Recognise that the place value system can be extended beyond hundredths	Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies
					Compare, order and represent decimals	Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers
						Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals, with and without digital technologies
						Multiply and divide decimals by powers of 10
						Make connections between equivalent fractions, decimals and percentages





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Patterns and algebra						
Sort and classify familiar objects and explain the basis for these classifications, and copy, continue and create patterns with objects and drawings	Investigate and describe number patterns formed by skip counting and patterns with objects	Describe patterns with numbers and identify missing elements	Describe, continue, and create number patterns resulting from performing addition or subtraction	Explore and describe number patterns resulting from performing multiplication	Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction	Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence
Follow a short sequence of instructions	Recognise the importance of repetition of a process in solving problems	Solve problems by using number sentences for addition or subtraction	Use a function machine and the inverse machine as a model to apply mathematical rules to numbers or shapes	Solve word problems by using number sentences involving multiplication or division where there is no remainder	Use equivalent number sentences involving multiplication and division to find unknown quantities	Explore the use of brackets and order of operations to write number sentences
		Apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction		Use equivalent number sentences involving addition and subtraction to find unknown quantities	Follow a mathematical algorithm involving branching and repetition (iteration)	Design algorithms involving branching and iteration to solve specific classes of mathematical problems
				Define a simple class of problems and use an effective algorithm that involves a short sequence of steps and decisions to solve them		
Achievement Standard	1	1	1	1	1	
Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. They match individual objects with counting sequences up to and back from 20. Students order the first 10 elements of a set. They represent, continue and create simple patterns.	Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. Students recognise Australian coins according to their value. They identify representations of one half. Students describe number sequences resulting from skip counting by 2s, 5s and 10s. They continue simple patterns involving numbers and objects with and without the use of digital technology.	Students count to and from, and order numbers up to 1000. They perform simple addition and subtraction calculations, using a range of strategies. They find the total value of simple collections of Australian notes and coins. Students represent multiplication and division by grouping into sets and divide collections and shapes into halves, quarters and eighths. They recognise increasing and decreasing number sequences involving 2s, 3s, 5s and 10s, identify the missing element in a number sequence, and use digital technology to produce sequences by constant addition.	Students count and order numbers to and from 10 000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall addition and multiplication facts for single-digit numbers. They represent money values in various ways and correctly count out change from financial transactions. Students model and represent unit fractions for halves, thirds, quarters, fifths and eighths, and multiples of these up to one. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples.	Students recall multiplication facts to 10 x 10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognise common equivalent fractions in familiar contexts and make connections between fractions and decimal notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate them on a number line.	Students solve simple problems involving the four operations using a range of strategies including digital technology. They estimate to check the reasonableness of answers and approximate answers by rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students order decimals and unit fractions and locate them on a number line. Students add and subtract fractions with the same denominator. They find unknown quantities in number sentences and continue patterns by adding or subtracting fractions and decimals.	Students recognise the properties of prime, composite, square and triangular numbers and determine sets of these numbers. They solve problems that involve all four operations with whole numbers and describe the use of integers in everyday contexts. Students locate fractions and integers on a number line and connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students calculate a simple fraction of a quantity and calculate common percentage discounts on sale items, with and without the use of digital technology. They make connections between the powers of 10 and the multiplication and division of decimals. Students add, subtract and multiply decimals and divide decimals where the result is rational. Students write number sentences using brackets and order of operations, and specify rules used to generate sequences involving whole numbers, fractions and decimals. They use ordered pairs of integers to represent coordinates of points and locate a point in any one of the four quadrants on the Cartesian plane.