

PATTERNS AND ALGEBRA CONCEPT SEQUENCE

KINDERGARTEN	1	Copy and continue patterns of sounds, actions, objects, shapes and pictures, identifying the part that repeats.	
	2	Recognise when an error occurs in patterns of objects, shapes and pictures using the part that repeats.	
YEAR 1	3	Identify the number of elements in the part that repeats in patterns of objects, shapes and pictures to determine a missing element.	
	4	Add single-digit numbers explaining commutativity.	Essential related concepts are Addition and Subtraction 5, 10, 11, 12.
	5	Add and subtract zero.	
	6	Add 3 or more numbers using associativity and friends of 10.	
	7	Investigate equivalent number sentences involving addition and subtraction, describing the equals sign as equality.	
	8	Create and continue number patterns that increase through addition and decrease through subtraction, explaining how the number patterns repeat, increase and decrease. Rhythmic and skip count forwards and backwards by 2s, 5s and 10s naming multiples.	Essential related concept is Multiplication and Division 3
	9	Explain even numbers by halving to get a whole number.	Essential related concept is Fractions and Decimals 2.
	10	Identify odd and even number patterns, recognising when an error occurs.	

YEAR 2	11	Describe patterns that increase and decrease by adding and subtracting 10.	Essential related concepts are Place Value 12, Addition and Subtraction 13, 15.
	12	Describe patterns that increase and decrease by adding and subtracting 100s, 10s and 1s, on and off the hundred and decade.	
	13	Seeing difference in three ways. Solving missing number sentences by seeing difference in 3 ways.	Essential related concepts are Addition and Subtraction 19, 20.
	14	Solve problems involving addition or subtraction, representing a word problem as a number sentence and writing a word problem to represent a number sentence.	
YEAR 3	15	Explain even numbers and odd numbers.	Essential related concept is Multiplication and Division 10.
	16	Describe patterns that increase and decrease by repeatedly adding and subtracting 100s and 1000s on and off the decade, hundred and thousand from four-digit numbers.	Essential related concept is Place Value 17.
	17	Describe patterns that increase and decrease by repeatedly adding and subtracting whole numbers. Describe an informal rule for a number pattern, then create the pattern.	
	18	Multiply using the distributive property. Associate dividing into equal groups with fractions.	Essential related concepts are Multiplication and Division 9, 10, 11, 12, 13, 14, 15, 16, 17.
	19	Solve missing and equivalent number sentences, explaining equality and the relationship between addition and subtraction.	Essential related concept is Addition and Subtraction 22.

YEAR 4	20	Describe patterns that increase and decrease by adding and subtracting 100s and 1000s on and off the decade, hundred and thousand from five-digit numbers.	Essential related concept is Place Value 19.
	21	Add and subtract combinations of even and odd numbers, using the relationships to check calculations.	Essential related concept is Addition and Subtraction 25.
	22	Describe number patterns involving fractions, (halves, quarters and thirds), that increase through addition and decrease through subtraction, including on number line.	Essential related concepts are Addition and Subtraction 26, Fractions and Decimals 15.
	23	Describe number patterns by skip and rhythmic counting forwards and backwards by 3, 4, 6, 7, 8, 9, 10 identifying the terms as multiples of 3, 4, 6, 7, 8, 9, 10 identifying the rule and terms through multiplication.	Essential related concept is Multiplication and Division 19.
		Describe number patterns by skip and rhythmic counting forwards and backwards by 3, 4, 6, 7, 8, 9, 10 from any point on number line identifying the rule and terms through multiplication. Describe a rule for a number pattern using multiplication or division, then create the pattern.	
	24	Use equivalent number sentences involving addition and subtraction to find unknown quantities.	Essential related concept is Addition and Subtraction 27.
25	Solve word problems using number sentences involving multiplication and division, explaining equality.	Essential related concept is Multiplication and Division 19.	
YEAR 5	26	Explain equivalent division calculations result if both numbers are divided by the same factor	Essential related concept is Multiplication and Division 21.
		Create and solve equivalent number sentences involving multiplication and division.	
27	Describe number patterns involving fractions, decimals and whole numbers, that increase through addition and decrease through subtraction, including on number line.	Essential related concepts are Addition and Subtraction 29, 30, Fractions and Decimals 24, Place Value 27.	

YEAR 6	28	Number patterns involving fractions, decimals and whole numbers, including geometric number patterns, that increase through addition and decrease through subtraction, including on number line, in a table, describing the rule.	Essential related concepts are Addition and Subtraction 31, Place Value 31, Fractions and Decimals 34.
	29	Identify square and triangular numbers.	Essential related concept is Multiplication and Division 27.
	30	Negative numbers.	Essential related concept is Addition and Subtraction 32.
	31	Missing and equivalent number sentences using order of operations and grouping symbols.	Essential related concepts are Addition and Subtraction 33, Multiplication and Division 29.
	32	Identify prime and composite numbers. Explain composite numbers are the product of prime factors. Using prime factors to simplify calculations.	Essential related concept is Multiplication and Division 28.