Inspire Maths 4 Long-term Plan

Unit title	Key concepts
1 Whole Numbers (1)	
Numbers to 100 000	• Place value of ten thousands, thousands, hundreds, tens and ones and counting numbers up to 100 000
Comparing numbers with 100 000	• Numbers up to 100 000 are compared and arranged in ascending or descending order
2 Whole Numbers (2)	
Rounding numbers to the nearest ten	• The number line is used as a visual aid to help pupils round numbers
Rounding numbers to the nearest hundred	
Estimation	• Estimation is based on rounding numbers and it provides a tool for checking answers
Factors	• Factors are whole numbers. When a given number is divided by its factor, it does not leave any remainder • The smallest factor of a number is 1 and the greatest factor is the number itself
Multiples	• Multiples of a 1-digit whole number are found by multiplying the whole number by any other whole number • The concept of factors and multiples are related: 2 is a factor of 8 and 8 is a multiple of 2
Practice Book – Review 1	
Assessment Book – Test 1	
3 Whole Numbers (3)	
Multiplication by a 1-digit number	• Using a formal algorithm to multiply numbers up to 4 digits by a 1-digit whole number • Using regrouping in multiplication
Multiplication by a 2-digit number	• Using a formal algorithm to multiply numbers up to 3 digits by a 2-digit whole number • Using regrouping in multiplication
Division by a 1-digit number	• Using a formal algorithm to divide a number up to 4 digits by a 1-digit whole number • Regrouping is involved in division
Word problems	• Applying concepts in the 4 operations to solve word problems up to 3 steps involving whole numbers and the 4 operations (some word problems are solved with the help of models)

4 Tables and Line Graphs	
Presenting and interpreting data in a table	• Data involving two variables is presented in a table
More tables	• A variable may be sub-classified into two or more sub-variables (E.g. 'Number of children' can be further classified into 'Number of boys' and 'Number of girls')
Line graphs	
Practice Book – Review 2	
Assessment Book – Test 2, Challenging Problems 1, Check-up 1	
5 Fractions	
Mixed numbers	• A mixed number is made up of a whole number and a proper fraction • A proper fraction is a part of a whole • A proper fraction is a number between 0 and 1
Improper fractions	• In an improper fraction, the numerator is equal to or greater than the denominator • An improper fraction is a number equal to or greater than 1 • Improper fractions are extensions of proper fractions
Conversion of fractions	• A mixed number and an improper fraction can represent the same number
Adding and subtracting fractions	• Two fractions are related when the denominator of one fraction is a multiple of the denominator of the other fraction • Two or more related fractions can be converted to equivalent fractions with denominators equal to that of the fraction with the greatest denominator
Fractions of a set	• A fraction is part of a set
Word problems	• Application of the concepts of a fraction as part of a whole and part of a set
6 Angles	
Understanding angles (Naming angles)	• An angle is an amount of turning and not the amount of space
Understanding angles (Measuring angles)	• Angles are named as ∠ABC or ∠a
Drawing angles to 180°	• Drawing angles up to 180°
Turns and right angles	• A right angle (a quarter turn) is 90°, 2 right angles (a half turn) is 180°, 3 right angles (a three-quarter turn) is 270° and 4 right angles (a complete turn) is 360°
8-point compass	• Know the directions: north (N), south (S), east (E), west (W), north-east (NE), north-west (NW), south-east (SE), south-west (SW)
Practice Book – Review 3	
Assessment Book – Test 3	

7 Perpendicular and Parallel Lines	
Drawing perpendicular lines	• Perpendicular lines meet or intersect at right angles
Drawing parallel lines	• Parallel lines never meet • The perpendicular distance between a pair of parallel lines is equal at every point on the lines
Horizontal and vertical lines	• A horizontal line is a line on level ground or parallel to the level ground • A vertical line is a line perpendicular to the level ground
8 Squares and Rectangles	
Squares and rectangles	• A square is a four-sided shape in which all the sides are equal and all the angles are right angles • A rectangle is a four-sided shape in which the opposite sides are equal and all the angles are right angles
More on squares and rectangles	• Properties of squares (all the sides are equal and each angle = 90°) and rectangles (opposite sides are equal and each angle = 90°)
Practice Book – Review 4	
Practice Book – Revision 1	
Assessment Book – Test 4, Challenging Problems 2, Check-up 2	
9 Decimals (1)	
Understanding tenths	• The first decimal place represents tenths • 10 tenths = 1 one
Understanding hundredths	• The second decimal place represents hundredths • 10 hundredths = 1 tenth
Understanding thousandths	• The third decimal place represents thousandths • 10 thousandths = 1 hundredth
Comparing decimals	• Decimals form part of the base-ten system of numeration
Rounding decimals	• Between two consecutive whole numbers, there are 10 tenths • Between two consecutive tenths, there are 10 hundredths • Between two consecutive hundredths, there are 10 thousandths
Fractions and decimals	• Decimals up to 3 places are fractions with denominators 10, 100, 1000

10 Decimals (2)	
Addition	Addition of decimals can be interpreted as: • combining two or more quantities into one • the enlargement of a quantity, i.e. increasing the amount in the quantity • comparison of a quantity with another, i.e. one quantity has a certain amount more than the other
Subtraction	Subtraction of decimals can be interpreted as: • taking away part of a quantity • finding the missing part of a quantity given the whole and the other part • comparison, i.e. the difference between two quantities • complementary addition, i.e. how much must be added to a quantity to give another
Word problems	• Application of the concepts of addition and subtraction of decimals to solving word problems
Multiplication	Multiplication of a decimal by a whole number can be interpreted as: • repeated addition of the decimal • comparison of one quantity with another, i.e. one quantity is *n* times as much as the other
Division	Division of a decimal by a whole number can be interpreted as: • sharing equally, i.e. dividing the decimal into a number of equal groups. The number of groups is determined by the divisor • grouping equally, i.e. dividing the set into groups of equal size. The size of each group is determined by the divisor
Estimation of decimals	• Application of rounding concepts and mental calculation strategies
Word problems	• Application of the concepts of multiplication and division of a decimal by a whole number to solving word problems
Practice Book – Review 5	
11 Time	
Seconds	• A second is a unit of measurement of time • 60 seconds = 1 minute
24-hour clock	• Time can be expressed using the 12-hour or the 24-hour clock notation • Duration can be measured in hours and minutes
Assessment Book – Test 5, Challenging Problems 3, Check-up 3	

12 Area and Perimeter	
Rectangles and squares	• The perimeter of a plane closed figure is the distance around the figure. For a rectangle, the perimeter is 2 × (Length + Width) and for a square, it is 4 × length of side • The area of a plane closed figure is the amount of surface inside the figure. For a rectangle, the area is Length × Width and for a square, it is Side × Side
Composite shapes	• The perimeter of a composite shape is the total distance around it • The area of a composite shape is the sum of the areas of all the individual rectangles and squares that make up the composite shape • Area of a rectangle = Length × Width and Area of a square = Side × Side • Opposite sides of a rectangle are equal • The four sides of a square are equal
Solving word problems	• Application of the concepts of area and perimeter of squares and rectangles to solving word problems
Practice Book – Review 6	
13 Symmetry	
Identifying symmetrical shapes	• A symmetrical shape has a line of symmetry which divides the shape into two equal parts • When folded along the line of symmetry, the two parts fit exactly
Identifying lines of symmetry	• A line of symmetry divides the shape into two equal parts so that the two parts fit exactly when the shape is folded along this line
Making symmetrical shapes and patterns	• A shape is symmetrical along a line if the line divides the shape into two equal parts and the parts fit exactly when the shape is folded along this line
14 Tessellations	
Identifying tessellations	• A shape can be tessellated if any number of them can be fitted together to cover a surface without any gaps or overlapping. If necessary, the shape can be rotated, but not flipped over
More tessellations	• A tessellating shape can cover a surface without any gaps • Some tessellating shapes can cover a surface in more than one way • A tessellating shape can be created from another
Practice Book – Review 7	
Practice Book – Revision 2	
Assessment Book – Test 6, Challenging Problems 4, Check-up 4	