



Year 4 - Long-term Plan

Unit title	Key concepts
1 Whole Numbers (1)	
Numbers to 100 000	<ul style="list-style-type: none">Place value of ten thousands, thousands, hundreds, tens and ones and counting numbers up to 100 000
Comparing numbers with 100 000	<ul style="list-style-type: none">Numbers up to 100 000 are compared and arranged in ascending or descending order
2 Whole Numbers (2)	
Rounding numbers to the nearest ten	<ul style="list-style-type: none">The number line is used as a visual aid to help pupils round numbers
Rounding numbers to the nearest hundred	
Estimation	<ul style="list-style-type: none">Estimation is based on rounding numbers and it provides a tool for checking answers
Factors	<ul style="list-style-type: none">Factors are whole numbers. When a given number is divided by its factor, it does not leave any remainderThe smallest factor of a number is 1 and the greatest factor is the number itself
Multiples	<ul style="list-style-type: none">Multiples of a 1-digit whole number are found by multiplying the whole number by any other whole numberThe 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	<ul style="list-style-type: none">Using a formal algorithm to multiply numbers up to 4 digits by a 1-digit whole numberUsing regrouping in multiplication
Multiplication by a 2-digit number	<ul style="list-style-type: none">Using a formal algorithm to multiply numbers up to 3 digits by a 2-digit whole numberUsing regrouping in multiplication
Division by a 1-digit number	<ul style="list-style-type: none">Using a formal algorithm to divide a number up to 4 digits by a 1-digit whole numberRegrouping is involved in division
Word problems	<ul style="list-style-type: none">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	<ul style="list-style-type: none"> Data involving two variables is presented in a table
More tables	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> A mixed number and an improper fraction can represent the same number
Adding and subtracting fractions	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> A fraction is part of a set
Word problems	<ul style="list-style-type: none"> Application of the concepts of a fraction as part of a whole and part of a set
6 Angles	
Understanding angles (Naming angles)	<ul style="list-style-type: none"> An angle is an amount of turning and not the amount of space
Understanding angles (Measuring angles)	<ul style="list-style-type: none"> Angles are named as $\angle ABC$ or $\angle a$
Drawing angles to 180°	<ul style="list-style-type: none"> Drawing angles up to 180°
Turns and right angles	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> • Perpendicular lines meet or intersect at right angles
Drawing parallel lines	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • The first decimal place represents tenths • 10 tenths = 1 one
Understanding hundredths	<ul style="list-style-type: none"> • The second decimal place represents hundredths • 10 hundredths = 1 tenth
Understanding thousandths	<ul style="list-style-type: none"> • The third decimal place represents thousandths • 10 thousandths = 1 hundredth
Comparing decimals	<ul style="list-style-type: none"> • Decimals form part of the base-ten system of numeration
Rounding decimals	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Decimals up to 3 places are fractions with denominators 10, 100, 1000

10 Decimals (2)	
Addition	<p>Addition of decimals can be interpreted as:</p> <ul style="list-style-type: none"> • 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	<p>Subtraction of decimals can be interpreted as:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Application of the concepts of addition and subtraction of decimals to solving word problems
Multiplication	<p>Multiplication of a decimal by a whole number can be interpreted as:</p> <ul style="list-style-type: none"> • repeated addition of the decimal • comparison of one quantity with another, i.e. one quantity is n times as much as the other
Division	<p>Division of a decimal by a whole number can be interpreted as:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Application of rounding concepts and mental calculation strategies
Word problems	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • A second is a unit of measurement of time • 60 seconds = 1 minute
24-hour clock	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> The perimeter of a plane closed figure is the distance around the figure. For a rectangle, the perimeter is $2 \times (\text{Length} + \text{Width})$ and for a square, it is $4 \times \text{length of side}$ The area of a plane closed figure is the amount of surface inside the figure. For a rectangle, the area is $\text{Length} \times \text{Width}$ and for a square, it is $\text{Side} \times \text{Side}$
Composite shapes	<ul style="list-style-type: none"> 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 = $\text{Length} \times \text{Width}$ and Area of a square = $\text{Side} \times \text{Side}$ Opposite sides of a rectangle are equal The four sides of a square are equal
Solving word problems	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	