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Premier
Mathematics

| Grade 8 Term 1 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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| Unit 1 <br> Whole numbers | Exercise 1 <br> Mental calculations <br> TG 1; LB 1 <br> Exercise 2 <br> Ordering and comparing whole numbers TG 1; LB 2 <br> Exercise 3 <br> Properties of whole numbers <br> TG 2; LB 3 <br> Exercise 4 <br> Calculation <br> techniques <br> TG 3; LB 3 <br> Exercise 5 <br> Multiples and <br> factors <br> TG 4; LB 5 <br> Exercise 6 <br> Solving problems including ratio and rate <br> TG 6; LB 7 <br> Exercise 7 <br> Solving problems in financial contexts involving profit, loss, discount and VAT TG 8; LB 9 |  |  |  |  |  |  |


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|  | Exercise 8 <br> Solving problems in financial context involving budget, accounts, loans, simple interest and hire purchase TG 9; LB 10 <br> Exercise 9 <br> Solving problems in financial contexts exchange rates TG 10; LB 13 |  |  |  |  |  |  |
| Unit 2 Integers | Exercise 1 <br> Counting with integers <br> TG 10; LB 14 <br> Exercise 2 <br> Ordering and comparing integers TG 12; LB 15 <br> Exercise 3 <br> Addition of integers <br> TG 12; LB 16 <br> Exercise 4 <br> Subtraction of integers <br> TG 13; LB 18 <br> Exercise 5 <br> Multiplication and division of integers TG 13; LB 18 <br> Exercise 6 <br> Square, cubes, square roots and cube roots of integers <br> TG 14; LB 20 |  |  |  |  |  |  |


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|  | Exercise 7 <br> Properties of integers TG 15; LB 23 <br> Exercise 8 Problem solving with integers TG 16; LB 24 |  |  |  |  |  |  |
| Unit 3 exponents | Exercise 1 <br> Mental calculations <br> TG 17; LB 26 <br> Exercise 2 <br> Comparing and representing numbers in exponential form TG 18; LB 28 <br> Exercise 3 <br> Compare and represent integers in exponential form TG 19; LB 29 <br> Exercise 4 Scientific notation TG 20; LB 30 <br> Exercise 5 Law 1: multiplication of exponents TG 21; LB 31 <br> Exercise 6 <br> Law 2: division of exponents <br> TG 22; LB 32 <br> Exercise 7 <br> Law 3: a power raised to a power TG 22; LB 33 |  |  |  |  |  |  |


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|  | Exercise 8 <br> Law 4: two different <br> bases raised to the <br> same power <br> TG 23; LB 34 <br> Exercise 9 <br> Law 5: a number <br> raised to the power <br> 0 <br> TG 23; LB 35 |  |  |  |  |  |


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|  |  | Exercise 2 <br> Determine input and output using formulae and equations TG 30; LB 46 <br> Exercise 3 Equivalent forms TG 31; LB 48 |  |  |  |  |  |
| Unit 6 Algebraic expressions |  | Exercise 1 <br> Recognise and interpret rules or relationships represented in symbolic forms TG 32; LB 50 <br> Exercise 2 Identify variables and constants in given formulae and equations TG 33; LB 52 <br> Exercise 3 <br> Recognise and identify conventions for writing algebraic expressions TG 33; LB 53 <br> Exercise 4 Identify and classify like and unlike terms in algebraic expression TG 34; LB 53 |  |  |  |  |  |


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|  |  | Exercise 5 <br> Recognise and <br> identify coefficients <br> and exponents <br> in algebraic <br> expressions <br> TG 35; LB 55 <br> Exercise 6 <br> Use commutative, <br> associative and <br> distributive laws of <br> exponents to add <br> and subtract like <br> terms in algebraic <br> expression <br> TG 36; LB 56 |  |  |  |  |


| Grade 8 Term 2 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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| Unit 8 Algebraic expression |  | Exercise 1 <br> Recognise and interpret rules or relationships represented in symbolic form TG 48; LB 66 <br> Exercise 2 <br> Recognise and identify conventions for writing algebraic expressions TG 48; LB 67 <br> Exercise 3 <br> Add and subtract like terms in algebraic expressions TG 49; LB 68 <br> Exercise 4 Mixed operations in algebraic expressions TG 50; LB 69 <br> Exercise 5 Multiply integers and monomials, binomials and trinomials TG 50; LB 70 <br> Exercise 6 Divide integers and monomials, binomials and trinomials TG 52; LB 72 |  |  |  |  |  |


| Grade 8 Term 2 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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|  |  | Exercise 7 <br> Determine the squares, cubes, square roots and cube roots of single algebraic terms or like algebraic terms TG 53; LB 73 <br> Exercise 8 Determine the numerical value of algebraic expressions by substitution TG 53; LB 74 |  |  |  |  |  |
| Unit 9 <br> Algebraic equations |  | Exercise 1 <br> Set up equations to describe problem situations TG 55; LB 75 <br> Exercise 2 <br> Analyse and interpret equations that describe a given situation TG 55; LB 76 <br> Exercise 3 Solve equations by inspection TG 56; LB 76 <br> Exercise 4 Determine the numerical value of an expression by substitution TG 56; LB 77 |  |  |  |  |  |


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|  |  | Exercise 5 Solve problems using additive and multiplicative inverse <br> TG 57; LB 78 <br> Exercise 6 <br> Solving equations using laws of exponents TG 58; LB 79 |  |  |  |  |  |
| Unit 10 <br> Construction of geometric figures |  |  | Exercise 1 <br> Constructing circles and angles TG 59; LB 80 <br> Exercise 2 <br> Accurately bisect a line and an angle using a pair of compasses <br> TG 59; LB 81 <br> Exercise 3 <br> Accurately construct perpendicular lines at a given point and from a given point TG 61; LB 84 <br> Exercise 4 Constructing a triangle given its three sides TG 62; LB 85 <br> Exercise 5 Constructing a triangle given two sides and the included angle TG 63; LB 86 |  |  |  |  |


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|  |  |  | Exercise 6 <br> Accurate construct quadrilaterals TG 63; LB 87 <br> Exercise7 <br> Construct angles of $30^{\circ}, 45^{\circ}, 60^{\circ}$ and their multiples without using a protractor TG 64; LB 88 <br> Exercise 8 <br> By construction, investigate the angles in a triangle, focusing on the sum of interior and the sizes of angles in an isosceles triangle and the sides and base angles of an isosceles triangle TG 65; LB 89 <br> Exercise 9 <br> By construction, investigate sides and angles in quadrilaterals, focusing on the sum of the interior angles of quadrilaterals, and the sides and opposite angles of parallelograms TG 67; LB 90 |  |  |  |  |
| Unit 11 <br> Geometry of 2D shapes |  |  | Exercise 1 <br> Geometry of 2D shapes TG 68; LB 93 |  |  |  |  |


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|  |  |  | Exercise 2 <br> Identify and write clear definitions of quadrilaterals in terms of their sides and angles, distinguishing between parallelograms, rectangle, square, rhombus, trapezium and kite <br> TG 68; LB 95 <br> Exercise 3 <br> Similar and congruent 2D shapes <br> TG 69; LB 97 <br> Exercise 4 Solve geometric problems involving unknown sides and angles in triangles and quadrilaterals using known properties and definitions <br> TG 69; LB 98 |  |  |  |  |
| Unit 12 Geometry of straight lines |  |  | Exercise 1 <br> Recognise and describe pairs of angles formed by perpendicular lines and intersecting lines <br> TG 71; LB 103 |  |  |  |  |



| Grade 8 Term 3 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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|  |  |  | Exercise 6 <br> Equivalent forms <br> TG 88; LB 125 <br> Exercise 7 <br> Calculating <br> percentages <br> TG 88; LB 127 |  |  |  |  |
| Unit 14 <br> Decimal fractions | Exercise 1 <br> Ordering and comparing decimal fractions <br> TG 90; LB 130 <br> Exercise 2 <br> Adding and <br> subtracting decimal fractions <br> TG 91; LB 132 <br> Exercise 3 <br> Multiplication using decimal fractions TG 91; LB 133 <br> Exercise 4 <br> Division using decimal fractions TG 92; LB 136 <br> Exercise 5 <br> Squares, cubes, square roots, cube roots of decimal fractions <br> TG 93; LB 137 <br> Exercise 6 <br> Solving problems <br> TG 93; LB 138 <br> Exercise 7 <br> Equivalent forms <br> TG 94; LB 139 |  |  |  |  |  |  |


| Grade 8 Term 3 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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| Unit 15 <br> The theorem of Pythagoras |  |  |  | Exercise 1 <br> Develop the theorem of Pythagoras TG 95; LB 142 <br> Exercise 2 <br> Use the theorem of Pythagoras to determine whether a triangle is a right angled triangle TG 95; LB 143 <br> Exercise 3 <br> Use the theorem of Pythagoras to find the missing length in a right angled triangle TG 96; LB 144 |  |  |  |
| Unit 16 <br> Area and perimeter of 2D shapes |  |  |  | Exercise 1 <br> Area and perimeter of polygons <br> TG 97; LB 147 <br> Exercise 2 <br> Finding the area of polygons by decomposing the shapes <br> TG 98; LB 149 <br> Exercise 3 <br> Area and circumference of circles <br> TG 100; LB 150 <br> Exercise 4 <br> Area conversions <br> TG 102; LB 152 |  |  |  |


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| Unit 17 <br> Surface area and <br> volume of 3D <br> objects |  |  | Exercise 1 <br> Determine surface <br> areas of cubes, <br> rectangular prisms <br> and triangular <br> prisms <br> TG 105; LB 155 |  |  |  |


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|  |  |  | Exercise 3 <br> Represent data <br> TG 113; LB 168 <br> Exercise 4 <br> Interpret, analyse <br> and report data <br> TG 116; LB 174 <br> Exercise 5 <br> Analyse and report <br> data <br> TG 116; LB 178 |  |  |  |

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|  |  | Exercise 5 <br> Solving problems using additive and multiplicative inverses <br> TG 130; LB 196 <br> Exercise 6 <br> Solving equations using laws of exponents TG 132; LB 198 <br> Exercise 7 Use substitution In equations to generate tables of ordered pairs TG 132; LB 199 |  |  |  |  |  |
| Unit 21 Graphs |  | Exercise 1 <br> Interpreting graphs <br> TG 135; LB 201 <br> Exercise 2 <br> Plotting pints on a graph <br> TG 136; LB 207 <br> Exercise 3 <br> Determine the scale of the axes <br> TG 137; LB 208 <br> Exercise 4 <br> Plotting points on a Cartesian plane TG 138; LB 210 <br> Exercise 5 Drawing graphs TG 139; LB 213 |  |  |  |  |  |


| Grade 8 Term 4 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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| Unit 22 <br> Transformation geometry |  |  | Exercise 1 <br> Recognise, describe and perform transformations with points on a coordinate plane, focusing on reflecting a point in the $y$-axis or $x$-axis TG 146; LB 219 <br> Exercise 2 Recognise, describe and perform transformations with points on a coordinate plane, focusing on translating a point within and across quadrants TG 147; LB 222 <br> Exercise 3 Recognise, describe and perform transformations with triangles on a coordinate plane, focusing on the coordinates of the vertices when reflecting a triangle in the Y -axis or X -axi TG 148; LB 224 |  |  |  |  |


| Grade 8 Term 4 | Numbers, Operations and Relationships | Patterns, Functions and Algebra | Shape and Space | Measurement | Data Handling | Recording | Reflection |
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|  |  |  | Exercise 4 <br> Recognise, describe and perform transformations with triangles on a coordinate plane, focusing on the coordinates of the vertices when translating a triangle within and across quadrants TG 149; LB 227 <br> Exercise 5 Recognise, describe and perform transformations with triangles on a coordinate plane, focusing on the coordinates of the vertices when rotating a triangle around the origin TG 151; LB 228 <br> Exercise 6 Enlargements and reductions on area and perimeter of geometric figures TG 152; LB 231 |  |  |  |  |
| Unit 23 Geometry of 3D objects |  |  | Exercise 1 <br> Classifying 3D objects <br> TG 155; LB 237 <br> Exercise 2 <br> Building 3D models <br> TG 156; LB 239 |  |  |  |  |


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| Unit 24 Probability |  |  |  |  | Exercise 1 <br> Revision <br> TG 163; LB 241 <br> Exercise 2 <br> Probability <br> experiments <br> TG 163; LB 243 <br> Exercise 3 <br> Comparing relative frequency and probability <br> TG 165; LB 245 |  |  |

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