<table>
<thead>
<tr>
<th>Chp.</th>
<th>Topic</th>
<th>Content</th>
<th>Syllabus Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Numbers</td>
<td>• Directed Numbers&lt;br&gt;• Addition and Subtraction of directed numbers&lt;br&gt;• Multiplication of directed numbers&lt;br&gt;• Decimals&lt;br&gt;• Place value&lt;br&gt;• Decimals in Problems&lt;br&gt;• Arrange decimals in order size&lt;br&gt;• Rounding&lt;br&gt;• Significant figures&lt;br&gt;• Rounding to a number of significant figures&lt;br&gt;• Fractions&lt;br&gt;• Equivalent Fractions&lt;br&gt;• Arrange fractions in ascending and descending order&lt;br&gt;• Expressing a fraction as a decimal&lt;br&gt;• Expressing a decimal as a fraction&lt;br&gt;• Fraction of a quantity&lt;br&gt;• Addition and subtraction of fractions&lt;br&gt;• Multiplication of fractions&lt;br&gt;• Division of fractions (reciprocal method)&lt;br&gt;• Using BIDMAS in fractions&lt;br&gt;• Working with mixed numbers</td>
<td>• Represent directed numbers on a number line.&lt;br&gt;• Recognize and understand negative numbers through practical examples.&lt;br&gt;• Add/subtract directed numbers.&lt;br&gt;• Multiply/divide directed numbers.&lt;br&gt;• Solve problems using directed numbers.&lt;br&gt;• Read decimal numbers from scales.&lt;br&gt;• Read and use scales in practical situations.&lt;br&gt;• Add and subtract two fractions.&lt;br&gt;• Change improper fractions to mixed numbers and vice-versa.&lt;br&gt;• Subtract a fraction from a mixed number (less than 2).&lt;br&gt;• Find fractions of numbers or quantities.&lt;br&gt;• Understand that the reciprocal of a number is its multiplicative inverse.&lt;br&gt;• Multiply and divide one fraction by another fraction.&lt;br&gt;• Solve problems involving fractions.&lt;br&gt;• Use the four rules for calculations with integers and fractions including the correct use of operations and the use of brackets.&lt;br&gt;• Make efficient use of the basic functions on a calculator (+, -, ´, ¸, =).&lt;br&gt;• Use the fraction key on the calculator.&lt;br&gt;• Use a calculator</td>
</tr>
<tr>
<td>Bk 1 Chp 2</td>
<td>Properties of Numbers :&lt;br&gt;Prime factors, LCM and HCF</td>
<td>• Factors and Multiples&lt;br&gt;• Prime numbers and their properties&lt;br&gt;• Product of Prime Factors&lt;br&gt;• Lowest common multiple&lt;br&gt;• Highest common factor</td>
<td>• Recognise and use factors and multiples.&lt;br&gt;• Recognise prime numbers and write numbers as a product of their prime factors.&lt;br&gt;• Find common factors and multiples of up to three numbers.&lt;br&gt;• Solve simple problems using L.C.M. and H.C.F.</td>
</tr>
</tbody>
</table>
| Bk 1 | Sequences | • Arithmetic sequences  
• Geometric sequences  
• Other sequences  
• Patterns in shapes | • Recognise geometric and number patterns.  
• Generate terms of a sequence using term definitions of the sequence.  
• Generate terms of a sequence using term to term and position.  
• Write down the rule in words. |
|-------|------------|-------------------------------------------------|-------------------------------------------------|
| 9     | Ratio and proportion | • Ratio  
• Equivalent Ratios  
• Simplifying Ratios  
• Finding Missing quantities in ratios  
• Map ratios  
• Comparing ratios  
• Division of a given ratio  
• Proportionality (Direct Proportion) | • Solve problems involving direct proportion using the unitary method.  
• Use the ratio notation to compare two or more quantities.  
• Write ratios in their simplest form.  
• Share/divide a quantity in a given ratio. |
| 7     | Percentages | • Introduction  
• Changing decimals and fractions to percentages  
• Changing percentages to decimals and fractions  
• Expressing a number as a percentage of another  
• Percentage increase and decrease  
• Finding the original quantity | • Change percentages to fractions/decimals and vice-versa. Express one quantity as a percentage of another.  
• Work out the percentage of a quantity.  
• Work out the percentage increase/decrease.  
• Solve problems involving percentage increase and decrease. |
| Bk 1 chapter 18 | Statistics | • Organizing data  
• Numeric and non-numeric data  
• Mean  
• Median, mode, range  
• Frequency table  
• Discrete and continuous data  
• Bar graphs  
• Using bar graphs to represent discrete data  
• Class intervals  
• Using bar graphs to represent continuous data  
• Pie charts  
• Interpreting pie charts  
• Drawing pie charts | • Draw and interpret bar charts and pie chart.  
• Understand, compute and interpret the mean, mode, median and range of a set of ungrouped data.  
• Compile and interpret frequency tables for un/grouped discrete data.  
• Compile and interpret frequency tables for un/grouped continuous data.  
• Use a spreadsheet to construct bar graphs and pie charts and compute the mean and range of a set of ungrouped data. |
| --- | --- | --- |
| 16 | Probability | • Introduction  
• Single event probability  
• Double event probability  
• Possibility space table | • Understand and work out the probability of an event.  
• Find the probability by experiment.  
• Work out the probability from a frequency table.  
• Compile a possibility space. |
| 10 | Straight Line Graphs (Co-ordinates and graphs) | • Introduction  
• Types of straight lines  
• Vertical Lines  
• Horizontal lines  
• Slant lines  
• Slant lines that pass through the origin  
• Slant lines that do not pass through the origin  
• Gradient of a line  
• Finding the gradient from the equation  
• Parallel lines  
• The x- and y-intercepts  
• Finding the value of both intercepts  
• Using the y-intercept  
• Drawing lines using the gradient.  
• Drawing lines using both gradient and y-intercept  
• Finding missing coordinates  
• Points on a given line  
• Plotting a line by calculating two or more points  
• Using tabulation to find coordinates | • Use positive/negative ordered pairs to plot points and to draw lines and shapes.  
• Understand that the equation of a straight line describes the relationship between the x and y coordinates, given the line-graph or the coordinates.  
• Generate a sequence of ordered pairs and plot them to produce a straight line graph.  
• Understand what is meant by ‘the gradient of the line’  
• Find the gradient of a line by drawing a right-angled triangle. |
<table>
<thead>
<tr>
<th>Handout / Power Point Presentation</th>
<th>Using graphs • Converting Units</th>
<th>Using graphs • Travel graphs • Measures • Conversion Graphs • Draw conversion graph</th>
<th>Interpret information presented in a variety of linear and non-linear graphs. • Use and draw conversion graphs</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Expressions and Formulae</td>
<td>Expressions • Grouping like terms • Expanding brackets • Writing in index form • Formulae • Substitution • Subject of a formula • Changing the subject of a formula • Algebraic fractions • Multiplication and division of algebraic fractions</td>
<td>Simplify algebraic expressions by collecting like terms. • Multiply a single term over a bracket. • Simplify algebraic expressions including simple cases involving brackets. • Factorise expressions by identifying the common factor. • Evaluate simple formulae by substituting letters with positive and negative inputs. • Use letter symbols to represent unknown values.</td>
<td></td>
</tr>
</tbody>
</table>
| 11 | Solving Linear Equations | - Introduction  
- Linear equations in one variable  
- Equations involving the expansion of brackets  
- Problems leading to linear equations  
- Equations involving fractions | - Solve linear equations in one unknown.  
- Construct and solve simple linear equations.  
- Solve problems leading to solution of linear equations in one unknown. |
|-----|-------------------------|-------------------------------------------------|
| 5   | Angles                  | - Introduction  
- Types of angles  
- Angles on a straight line and at a point  
- Sum of interior angle of a triangle and quadrilateral  
- Exterior angle of a triangle  
- Vertically opposite angles  
- Alternate angles  
- Corresponding angles  
- Interior angles  
- Miscellaneous exercise | - Use a protractor to measure and draw angles up to 360°  
- Solve problems involving angles at a point, angles on a straight line and vertically opposite angles.  
- Solve problems involving parallel lines.  
- Understand a proof that the exterior angle of a triangle is equal to the sum of the two interior opposite angles.  
- Find unknown angles in triangles and quadrilaterals.  
- Solve problems involving the angles of triangles and quadrilaterals. |
| 6   | Bearings                | - Writing bearings  
- Drawing bearings  
- Return Bearings  
- Finding angles using angle relationships | - Express the eight main compass directions as three-figure bearings.  
- Use three-figure bearings to describe direction |
| 16  | Construction            | - Perpendicular from a point to a line  
- Perpendicular bisector of a line  
- Bisecting any angle  
- Constructing angles (90°, 60°, 45° & 30°)  
- Constructing triangles | - Make accurate constructions of triangles.  
- Draw simple scale drawings and solve problems involving angles of elevation and depression.  
- Use ruler and compasses only to construct a perpendicular at a point on a line.  
- Use ruler and compasses only to construct a perpendicular from a point to a line.  
- Use ruler and compasses only to construct the bisector of an angle.  
- Use ruler and compasses only to construct the perpendicular bisector of a line segment.  
- Construct squares and rectangles using ruler and compasses only.  
- Identify and draw diagonals. |
| Maths Skills | Shapes | • Classifying triangles and quadrilaterals  
• Classifying shapes by symmetry  
• Tessellation | • Classify quadrilaterals using their geometric properties.  
• Identify geometric properties of triangles and quadrilaterals through line and rotational symmetry.  
• Identify tessellating shapes.  
• Cover a given area with tessellating shapes. |
| --- | --- | --- | --- |
| Handouts | Transformations And symmetry | • Translation and reflection  
• Rotation  
• Reflection and rotational symmetry  
• Making symmetrical shapes  
• Symmetry of polygons | • Draw Translations. Describe translations parallel to the $x$ and $y$ axes, using such vocabulary as: left, right, up and down.  
• Draw Reflections. Use $y = \pm x, y = \pm c, x = \pm c$ as axes.  
• Draw Rotations in the $xy$ plane.  
• Identify shapes having reflection and/or rotational symmetry.  
• Determine the order of rotational symmetry.  
• Understand the symmetrical properties of a regular polygon. |
| Bk 1 Chp 10 | Measuring | • Length  
• Conversion of units of length  
• Perimeter  
• Conversion units of areas | • Understand and use units of area: mm², cm² and m². |
|------------|-----------|---|---|
| Bk 2 Chp 12 | Area | • The triangle  
• Area of triangle  
• Finding the base and height of a triangle given the area  
• Quadrilaterals – area of rectangle and square  
• Find length and breadth of a rectangle given the area  
• Find the length of a square given the area  
• Area of parallelogram and rhombus  
• Finding the base and height of a parallelogram given the area  
• Trapezium and area  
• Perimeter and area of compound shapes | • Use the formula to find the area of a triangle. 
\( \frac{1}{2} \times \text{base} \times \text{perpendicular height} \)  
• Derive and use the formula to find the area of a parallelogram. \( \text{base} \times \text{perpendicular height} \)  
• Calculate the area of compound shapes. E.g. area of trapeziums by adding the area of two triangles. Avoid the use of the formula \( \frac{1}{2} (a + b)h \). |
| Bk 2 Chp 14 | Volume | • Prisms  
• Volume of a prism  
• Volume of compound prisms  
• Surface area of cuboid | • Understand and use units of volume: mm³, cm³ and m³.  
• Find the volume of a cuboid by using formula.  
• Find the volume of compound shapes involving cubes and cuboids.  
• Calculate the surface area of a cuboid. |
| Handouts | Logo | • Draw shapes using Logo | • Understand commands  
• Write commands  
• Draw polygons |