| Y8 Strand | PLC |
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| **Ratio and Scale** | 1. Understand the meaning and representation of ratio |
| | 2. Understand and use ratio notation |
| | 3. Solve problems involving ratios of the form 1:n (or n:1) |
| | 4. Solve proportional problems involving the ratio m:n |
| | 5. Divide a value into a given ratio |
| | 6. Express ratios in their simplest integer form |
| | 7. **(H)** Express ratios in the form 1:n |
| | 8. Compare ratios and related fractions |
| | 9. Understand π as the ratio between diameter and circumference |
| | 10. **(H)** Understand gradient of a line as a ratio |
| **Multiplicative change** | 1. Solve problems involving direct proportion |
| | 2. Explore conversion graphs |
| | 3. Convert between currencies |
| | 4. **(H)** Explore direct proportion graphs |
| | 5. Explore relationships between similar shapes |
| | 6. Understand scale factors as multiplicative representations |
| | 7. Draw and interpret scale diagrams |
| | 8. Interpret maps using scale factors |
| **Multiplying and dividing fractions** | 1. Represent multiplication of fractions |
| | 2. Multiply a fraction by an integer |
| | 3. Find the product of a pair of unit fractions |
| | 4. Find the product of a pair of any fractions |
| | 5. Divide an integer by a fraction |
| | 6. Divide a fraction by a unit fraction |
| | 7. Understand and use the reciprocal |
| | 8. Divide an pair of fractions |
| | 9. **(H)** Multiply and divide improper and mixed fractions |

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| | 10. **(H)** Multiply and divide algebraic fractions |
| **The cartesian plane** | 1. Work with coordinates in all four quadrants |
| | 2, Identify and draw lines that are parallel to the axes |
| | 3. Recognise and use the line y = x |
| | 4. Recognise and use lines of the form y =kx |
| | 5. Link y = kx to direct proportion problems |
| | 6. (H) Explore the gradient of the line y = kx |
| | 7. Recognise and use lines in nthe form y = x + a |
| | 8. Explore graphs with a negative gradient (y = -kx, y = a-x, x + y = a) |
| | 9. Link graphs to linear sequences |
| | 10. Plot graphs in the form y = mx + c |
| | 11. **(H)** Explore non-linear graphs |
| | 12. **(H)** Find the midpoint of a line segment |
| **Collecting and reprsenting data** | 1. Draw and interpret scatter graphs |
| | 2. Understand and describe linear correlation |
| | 3. Draw and use line of best fit (1) & (2) |
| | 4. Identify non-linear relationships |
| | 5. Identify different types of data |
| | 6. Read and interpret ungrouped frequency tables |
| | 7. Read and interpret grouped frequency tables |
| | 8. Represent grouped discrete data |
| | 9. Represent continuous data hrouped into equal classes |
| | 10. Represent data in two-way tables |
| **Tables** | 1. Construct sample spaces for 1 or more events |
| | 2. Find probabilities from a sample space |
| | 3. Find probabilities from two-way tables |
| | 4. Find probabilities from Venn diagrams |

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| | 5. Use the product rule for finding the total number of possible putcomes |
| **Brackets, equations and inequalities** | 1. Form algebraic expressions |
| | 2. Use directed number with algebra |
| | 3. Multiply out single bracket |
| | 4. Factorise into a single bracket |
| | 5. Expand multiple single brackets and simplify |
| | 6. **(H)** Expand a pair of binomials |
| | 7. Solve equations, including with brakctes |
| | 8. Form and solve equations with brackets |
| | 9. Understand and solve simple inequalities |
| | 10. Form and solve inequalities |
| | 11. **(H)** Solve equations and inequalities with unknowns on both sides |
| | 12. **(H)** Form and solve equations and inequalities with unknown on both sides |
| | 13. Identify and use formulae, expressions, identities and equations |
| **Sequences** | 1. Generate seuqences given a rule in words |
| | 2. Generate sequences given a simple algebraic rule |
| | 3. Generate sequences given a complex algebraic rule |
| | 4. **(H)** Find the rule for the nth term of a linear sequence |
| **Indices** | 1. Adding and subtracting expressions with indices |
| | 2. Simplifying algebraic expressions by multiplying indices |
| | 3. Simplifying algebraic expressions by dividing indices |
| | 4. Using the addition law for indices |
| | 5. Using the addition and subtraction law for indices |
| | 6. Exploring powers of powers |
| | 1. Convert fluently between key fractions, decimals and percentages |
| | 2. Calculate key fractions, decimals and percentages of an amount with a calculator |
| | 3, Calculate fractions, decimals and percentages of an amount using calculator methods |

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| **Fractions and percentages** | 4. Convert between decimals and percentages greater than 100% |
| | 5. Percentage decrease with a multiplier |
| | 6. Calculate percentage increase and decrease using a multiplier |
| | 7. Express one number as a fraction or a percentage of another without a calculator |
| | 8. Express one number as a fraction or a percentage of another using a calculator |
| | 9. Work with percentage change |
| | 10. Choose appropriate methods to solve percentage problems |
| | 11. **(H)** Find the original amount given the percentage less than 100% |
| | 12. **(H)** Find the original amount given the percentage greater than 100% |
| | 13. **(H)** Choose apporpriate methods to solve complex percentage problems |
| **Standard Index form** | 1. Investigate positive powers of 10 |
| | 2. Work with numbers greater than 1 in standard form |
| | 3. Investigate negative powers of 10 |
| | 4. Work with numbers between 0 and 1 in standard form |
| | 5. Compare and order numbers in standard form |
| | 6. Mentally calculate numbers in stanmdard form |
| | 7. Add and subtract numbers in standard form |
| | 8. Multiply and dividie numbers in standard form |
| | 9, Use a calculator to work with numbers in standard form |
| | 10. Understand and use negative indices |
| | 11. Understand and use fractional indices |
| **Number sense** | 1. Round numbers to power of 10 and 1 significant figure |
| | 2. Round numbers to a given number of decimal places |
| | 3. Estimate the answer to a calculation |
| | 4. (H) Understand and use error interval notation |
| | 5. Calculate using the order of operations |
| | 6. Calculate with money |

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| | 7. Convert metric measures of length |
| | 8. Convert metric units of weight and capacity |
| **Angles in parallel lines and polygons** | 1. Understand and use basic angles rules and notation. |
| | 2. Investigate angles between parallel lines and the transversal |
| | 3. Identify and calculate with alternate and corresponding angles |
| | 4. Identify and calculate with co-interior, alternate and corresponding angles |
| | 5. Solve complex problems with parallel line angles |
| | 6. Constructions triangles and special quadrilaterals |
| | 7. Investigate the properties of special quadrilaterals |
| | 8. Identify and calculate with sides and angles in special quadrilaterals |
| **Area of trapezia and circles** | 1. Calculate the area of triangles, rectangles and parallelograms |
| | 2. Calculate the area of a trapezium |
| | 3. Calculate the perimeter and area of compound shapes |
| | 4. Investigate the area of a circle |
| | 5. Calculate the area of a circle and parts of circle without a calculator |
| | 6. Calculate the area of a circle and parts of circle with a calc |
| **Line symmetry and reflection** | 1. Recognise line symmetry |
| | 2. Reflect a shape in a horizontal or vertical line 1 (shapes touching the line) |
| | 3. Reflect a shape in a horizontal or vertical line 2 (shapes not touching the line) |
| | 4. Reflect a shape in a diagonal line 1 (shapes touching the line) |
| | 5, Reflect a shape in a diagonal line 2 (shapes not touching the line) |
| | 1. Set up a statistical enquiry |
| | 2. Design and criticise questionnaires |
| | 3. Draw and interpret pictogrmas |
| | 4. Draw and interpret bar charts |
| | 5. Draw and interpret vertical line graphs |
| | 6. Draw and interpret multiple bar charts |

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| **The data handling cycle** | 7. Draw and interpret pie charts |
| | 8. Draw and interpret line graphs |
| | 9. Choose most appropriate diagram for given set of data |
| | 10. Represent and interpret grouped quantitative data |
| | 11. Find and interpret the range |
| | 12. Compare distributions using charts |
| | 13. Identify miselading graphs |
| **Measures of locations** | 1. Understand and use the mean, median and mode |
| | 2. Choose the most appropriate average |
| | 3. **(H)** Find the mean from an ungrouped frequency table |
| | 4. **(H)** Find the mean from a grouped frequency table |
| | 5. Identify outliers |
| | 6. Compare distribtions using averages and range |