Lode Heath School

Mathematics Department

**Year 7 Foundation
Spring Term**

Assignment Title	Unit 4: Fractions	Date set	Spring 1

Summary of Unit 4	Key Words
Calculate with fractions, decimals and percentages. Convert between fractions, decimals and percentages. Interpret fractions and percentages in problems.	Fraction, decimal, percentage, numerator, denominator, equivalent, cancel, simplify, improper, mixed, express, compare.

Prior Knowledge:

1) a) What is ½ of 20?

   b) What is ¼ of 20?

2) Calculate 50% of 40?

3) What is 50% as a fraction and decimal?

LEARNING JOURNEY

	Task Description
	4.1 Comparing fractions Use fraction notation to describe parts of a shape. Compare simple fractions. Use a diagram to compare two or more simple fractions.
	4.2 Simplifying fractions Change an improper fraction to a mixed number. Identify equivalent fractions. Simplify fractions by cancelling common factors.
	4.3 Working with fractions Add and subtract simple fractions. Calculate simple fractions of quantities.
	4.4 Fractions and decimals Work with equivalent fractions and decimals. Write one number as a fraction of another.
	4.5 Understanding percentages *(GCSE Statistics)* Understand percentage as 'the number of parts per 100'. Convert a percentage to a number of hundredths or tenths. Work with equivalent percentages, fractions and decimals.
	4.6 Percentages of amounts Use different strategies to calculate with percentages. Express one number as a percentage of another.

Assignment Title	Unit 5: Decimals and measures	Date set	Spring 1

Summary of Unit 5	Key Words
Use the four operations with decimal numbers. Use and convert between common measures including their use with perimeter and area.	Millimetre (mm), centimetre (cm), metre (m), kilometre (km), gram (g), kilogram (kg), tonne (t), millilitre (ml), litre (l), square, rhombus, rectangle, parallelogram, quadrilateral, kite, trapezium, pentagon, hexagon.

Prior Knowledge:

1) Complete the sentences:

There are _____mm in a centimetre.

There are _____cm in a metre.

There are _____m in a kilometre.

2) Calculate:
   a) 23 x 7   b) 405 ÷ 9

3) Look at the shape and calculate the:
   a) Area

   b) Perimeter

LEARNING JOURNEY

	Task Description
	5.1 Decimals and rounding (*GCSE Statistics*) Measure and draw lines to the nearest millimetre. Write decimals in order of size. Round decimals to the nearest whole number and to one decimal place. Round decimals to make estimates and approximations of calculations.
	5.2 Length, mass and capacity Compare measurements by converting them into the same units. Solve simple problems involving units of measurement in the context of length. Convert between metric units of length, mass and capacity.
	5.3 Scales and coordinates Read scales on a range of measuring equipment. Interpret the display of a calculator in different contexts. Interpret metric measures displayed on a calculator. Plot and read coordinates in all four quadrants.
	5.4 Working with decimals mentally Multiply decimals mentally. Check a result by considering whether it is of the right order of magnitude. Understand where to position the decimal point by considering equivalent calculations.
	5.5 Working with decimals Add and subtract decimals. Multiply and divide decimals by single-digit whole numbers.
	5.6 Perimeter Work out the perimeters of shapes and solve perimeter problems.
	5.7 Area Find areas by counting squares. Calculate the areas of squares and rectangles. Calculate the areas of shapes made from rectangles. Solve problems involving area.

Assignment Title	Unit 6: Lines and angles	Date set	Spring 1

Summary of Unit 6	Key Words
Draw and label angles correctly. Use known angle facts to calculate missing angles in right angles, on straight lines and around a point. Use known angle facts to find missing angles in triangles and quadrilaterals.	Degrees, triangles, straight line, full turn, quadrilateral, protractor, vertically opposite angles, interior, exterior.

Prior Knowledge:
1) How many degrees are there in a full turn? 2) How many lines of symmetry does a rectangle have? 3) What are the properties of an equilateral triangle? 4) Name 3 different types of angles?

LEARNING JOURNEY

	Task Description
	6.1 Lines, angles and triangles Describe and label lines, angles and triangles. Identify angle, side and symmetry properties of triangles.
	6.2 Estimating, measuring and drawing angles Use a protractor to measure and draw angles. Estimate the size of angles. Solve problems involving angles.
	6.3 Drawing triangles accurately Use a ruler and protractor to draw triangles accurately. Solve problems involving angles and triangles.
	6.4 STEM: Calculating angles Use the rule for angles on a straight line, angles around a point and vertically opposite angles. Solve problems involving angles.
	6.5 Angles in a triangle Use the rule for the sum of angles in a triangle. Identify and recognise different types of triangles Calculate interior and exterior angles. Solve angle problems involving triangles.
	6.6 Quadrilaterals Identify and name types of quadrilaterals. Use the rule for the sum of angles in a quadrilateral. Solve angle problems involving quadrilaterals.

Assignment Title	Unit 7: Ratio and proportion	Date set	Spring 2

Summary of Unit 7	Key Words
Simplify and share with ratio. Understand the connection between fractions, percentages and ratio. Understand and calculate with amounts in proportion	Proportion, ratio, simplify, quantity, fractions, percentages, scale factor, units

Prior Knowledge:

1. Work out   a) 250g ÷ 5 =

    b) £1.20 ÷ 6 =

    c) 35kg ÷ 7 =

    d) 40mm ÷ 8 =

2. Work out   a) 40 ÷ 5 x 3 =

    b) 20 ÷ 4 x 6 =

3. A ticket to the theme park costs £21. How much will it cost for 3 tickets?

4. Jennie has 10 sweets. Three of these sweets are strawberry flavoured. What fraction of the sweets are NOT strawberry flavoured?

LEARNING JOURNEY

	Task Description
	7.1 Direct proportion Use direct proportion in simple contexts. Solve simple problems involving direct proportion. Use the unitary method to solve simple word problems involving direct proportion.
	7.2 Writing ratios Use ratio notation. Reduce a ratio to its simplest form. Reduce a three-part ratio to its simplest form by cancelling.
	7.3 Using ratios Divide a quantity into two parts in a ratio given in words. Divide a quantity into two parts in a given ratio. Solve word problems involving ratio.
	7.4 Scales and measures Use ratios and measures.
	7.5 Proportions and fractions Use fractions to describe and compare proportions. Understand and use the relationship between ratio and proportion.
	7.6 Proportions and percentages Use percentages to describe proportions. Use percentages to compare simple proportions. Understand and use the relationship between ratio and proportion.

Assignment Title	Unit 8: Sequences and graphs	Date set	Spring 2

Summary of Unit 8	Key Words
Recognise and complete sequences. Find the rule for a sequence. Generate and plot coordinates. Plot straight line graphs.	Co-ordinate, Equation, X co-ordinate, Intercept, Y co-ordinate, Steepness, Grid, Slope, Origin, Gradient, Axes, Variable, Graph.

Prior Knowledge:

1. a) Draw a grid from -5 to 5 on each axis.

   b) Plot the following points:

   (2,3) (2, -5) (-4, 3) (-4,-5)

   c) What shape have you made?

2. a) What are the next three terms in the following sequence?
        3 7 11 15

   b) Describe the term to term rule for the sequence:

LEARNING JOURNEY

	Task Description
	8.1 Sequences Revisit sequences including term-to-term rules. Develop the use of mathematical language to describe sequences. Demonstrate how sequences can be used as a mathematical model to describe patterns.
	8.2 Pattern sequences Generate sequences from practical sequences, describing how patterns grow. Continue sequences arising from practical contexts and use them to answer questions.
	8.3 Coordinates Read, generate and plot coordinates. Recognise geometric shapes drawn on coordinate grids and find coordinates of points using geometric information. Find and calculate the midpoints of a line segment.
	8.4 Extending sequences Continue and describe special sequences. Generate sequences using more complex (two-step) term-to-term rules. Continue sequences arising from practical contexts. Begin to identify and use position-to-term rules. Recognise an arithmetic sequence and find the starting number and common difference.
	8.5 Straight-line graphs *(GCSE Statistics)* Recognise, name and plot straight line graphs parallel to the x- or y-axis. Generate coordinates that satisfy a simple linear rule and plot the graph in the first quadrant. Read values from a graph. Recognise, name and plot the graphs of y = x and y = −x.
	8.6 Position-to-term rules Identify and use position-to-term rules. Write the nth term of a sequence using algebra. Recognise the relationships between term-to-term rules, position-to-term rules and nth terms.