Lode Heath School

Mathematics Department

Year 7 Higher
Autumn Term

Assignment Title	Unit 1: Analysing and Displaying Data	Date set	Autumn 1

Summary of Unit 1	Key Words
Interpret and construct tables, charts and diagrams. Interpret, analyse and compare the distributions of data sets.	Mean, median, survey, represent, interpret, data, statistics, label, tally, frequency, pictogram, bar-chart, graph, pie chart, integer, angle, degree, interpret, data, statistics, mode, modal class, range, frequency, table, order, distribution.

Prior Knowledge:

1) What type of graphs have you heard of?

2) Why do you use graphs?

3) Calculate without a calculator:
   a) 6 + 3 + 7 + 5 + 5
   b) 35 ÷ 7

4) What is a quarter of 8?

LEARNING JOURNEY

	Task Description
	1.1 Two-way tables and bar charts Use two-way tables. Interpret and draw dual bar charts and compound bar charts.
	1.2 Averages and range Choose the most appropriate average for a set of data. Find the mode, median, mean and range for a set of data. Compare sets of data using averages and the range.
	1.3 Grouped data Group discrete and continuous data. Draw and interpret grouped frequency diagrams.
	1.4 More graphs Interpret and draw line graphs. Recognise when a graph is misleading.
	1.5 Pie charts Draw and interpret pie charts.
	1.6 STEM: Scatter graphs and correlation Graph paper and draw scatter graphs. Describe the correlation between two sets of data. Draw a line of best fit and use it to estimate values.
	1.7 STEM: Data collection Identify sources of primary and secondary data. Choose a suitable sample size. Understand how to reduce bias in sampling and questionnaires. Identify a random sample.

Assignment Title	Unit 2: Number skills	Date set	Autumn 1

Summary of Unit 2	Key Words
Be able to find factors, multiples, prime and negative numbers, squares, cubes and roots and use them to solve problems. Use long multiplication and division.	Add, subtract, multiply, divide, negative, positive, estimate, round, whole, inverse, time, money, calculator, factors, multiples, square, prime, ratio, proportion, power, roots.

Prior Knowledge:

1a) 37 x 4

b) 346 +757

c) 342 ÷ 6

2) Put the following numbers in ascending order

4 -7 2 -9 -11 0

LEARNING JOURNEY

	Task Description
	2.1 Factors, primes and multiples Understand the difference between multiples, factors and primes. Find all the factor pairs of any whole number. Find the HCF and LCM of two numbers.
	2.2 Using negative numbers Add, subtract, multiply and divide positive and negative numbers.
	2.3 Multiplying and dividing Use mental and written strategies for multiplication. Divide a 3-digit integer by a single or 2-digit integer.
	2.4 Squares and square roots Use index notation for squares and square roots. Calculate with squares and square roots.
	2.5 More powers and roots Carry out calculations involving squares, cubes, square roots and cube roots. Use factorising to work out square roots and cube roots. Solve word problems using square roots and cube roots.
	2.6 Calculations Estimate answers to complex calculations. Carry out calculations involving brackets.

Assignment Title	Unit 3: Equations, functions and formulae	Date set	Autumn 2

Summary of Unit 3	Key Words
Identify and manipulate algebraic expressions, equations, functions and formulae.	Algebra, unknown, symbol, variable, equals, brackets, evaluate, simplify, substitute, solve, term, expression, equation, formula.

Prior Knowledge:

1) Calculate the following:

a) -4 + 8 b) -7 – 3 c) -6 x 4 d) -3 x -7

2) If x = 5, what is x – 4?

3) Simplify:

a) 5x + 4x _____ b) 10y – 6y _____

LEARNING JOURNEY

	Task Description
	3.1 Simplifying algebraic expressions **Simplify expressions by collecting like terms.**
	3.2 Writing algebraic expressions **Construct expressions using four operations.**
	3.3 STEM: Using formulae **Substitute into formulae.**
	3.4 Writing formulae **Derive formulae from a description.**
	3.5 Brackets and powers **Expand expressions involving brackets.** **Substitute into expressions involving powers.**
	3.6 Factorising expressions **Factorise an algebraic expression.**

Assignment Title	Unit 4: Fractions	Date set	Autumn 2

Summary of Unit 4	Key Words
Use the four operations with fractions and mixed numbers. Calculate fractions of an amount and write a number as a fraction of another. Calculate with fractions, decimals and percentages.	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 Working with fractions Compare and simplify fractions. Write one number as a fraction of another. Work out simple fractions of amounts.
	4.2 Adding and subtracting fractions Write an improper fraction as a mixed number. Add and subtract fractions.
	4.3 Fractions, decimals and percentages Work with equivalent fractions, decimals and percentages. Use division to write a fraction as a decimal.
	4.4 Multiplying and dividing fractions Work out fractions of amounts. Divide an integer and a fraction by a fraction. Multiply a fraction by a fraction.
	4.5 Working with mixed numbers Add and subtract mixed numbers. Enter time as a mixed number into a calculator. Multiply and divide a mixed number.