Y7 Scheme of Work – White Rose Maths

Term	Weeks	Topic	Small step	Title
Autumn 1	2	1.1 Sequences	SS1	Describe and continue a sequence given diagrammatically
			SS2	Predict and check the next term(s) of a sequence
			SS3	Represent sequences in tabular and graphical forms
			SS4	Recognise the difference between linear and non-linear sequences
			SS5	Continue numerical linear sequences
			SS6	Continue numerical non-linear sequences
			SS7	Explain the term-to-term rule of numerical sequences in words
			SS8	**Find missing numbers within sequences**
				CATS ASSESSMENT…
				BASELINE ASSESSMENT - 1 LESSON
	2	1.2 Algebraic notation	SS1	Given a numerical input, find the output of a single function machine
			SS2	Use inverse operations to find the input given the output
			SS3	Use diagrams and letters to generalise number operations
			SS4	Use diagrams and letters with single function machines
			SS5	Find the function machine given a simple expression
			SS6	Substitute values into single operation expressions
			SS7	Find numerical inputs and outputs for a series of two function machines
			SS8	Use diagrams and letters with a series of two function machines
			SS9	Find the function machines given a two-step expression
			SS10	Substitute values into two-step expressions
			SS11	Generate sequences given an algebraic rule
			SS12	Represent one- and two-step functions graphically
	2	1.3 Equality and Equivalence	SS1	Understand the meaning of equality
			SS2	Understand and use fact families, numerically and algebraically
			SS3	Solve one-step linear equations involving +/- using inverse operations
			SS4	Solve one-step linear equations involving x/÷ using inverse operations
			SS5	Understand the meaning of like and unlike terms
			SS6	Understand the meaning of equivalence
			SS7	Simplify algebraic expressions by collecting like terms, using the ≡ symbol

Autumn 2	3	1.4 Place value and Ordering Integers and Decimals	SS1	Recognise the place value of any number in an integer up to one billion
			SS2	Understand and write integers up to one billion in words and figures
			SS3	Work out intervals on a number line
			SS4	Position integers on a number line
			SS5	Round integers to the nearest power of ten
			SS6	Compare two numbers using =, ≠, <, >, ≤, ≥
			SS7	Order a list of integers
			SS8	Find the range of a set of numbers
			SS9	Find the median of a set of numbers
			SS10	Understand place value for decimals
			SS11	Position decimals on a number line
			SS12	Compare and order any number up to one billion
			SS13	Round a number to 1 significant figure
			SS14	**Write 10, 100, 1000 etc as powers of ten**
			SS15	**Write positive integers in the form $A \times 10^n$**
			SS16	**Investigate negative powers of ten**
			SS17	**Write decimals in the form $A \times 10^n$**
	3	1.5 FDP Equivalence	SS1	Represent tenths and hundredths as diagrams
			SS2	Represent tenths and hundredths on number lines
			SS3	Interchange between fractional and decimal number lines
			SS4	Convert between fractions and decimals – tenths and hundredths
			SS5	Convert between fractions and decimals – fifths and quarters
			SS6	**Convert between fractions and decimals – eighths and thousandths**
			SS7	Understand the meaning of percentage using a hundred square
			SS8	Convert fluently between simple fractions, decimals and percentages
			SS9	Use and interpret pie charts
			SS10	Represent any fraction as a diagram
			SS11	Represent fractions on number lines
			SS12	Identify and use simple equivalent fractions
			SS13	Understand fractions as division
			SS14	Convert fluently between fractions, decimals and percentages
			SS15	**Explore fractions above one, decimals and percentages**

Spring 1	2	2.1 Solving Problems with Addition and Subtraction	SS1	Properties of Addition and Subtraction
			SS2	Mental strategies for Addition and Subtraction
			SS3	Use formal methods for addition of integers
			SS4	Use formal methods for addition of decimals
			SS5	Use formal methods for subtraction of integers
			SS6	Use formal methods for subtraction of decimals
			SS7	Choose the most appropriate method: mental strategies, formal, written or calculator
			SS8	Solve problems in context of perimeter
			SS9	Solve financial maths problems
			SS10	Solve problems involving tables and timetables
			SS11	Solve problems with frequency trees
			SS12	Solve problems with bar charts and line charts
			SS13	**Add and subtract numbers given in standard form**
	3	2.2 Solving Problems with Multiplication and Division	SS1	Properties of multiplication and division
			SS2	Understand and use factors
			SS3	Understand and use multiples
			SS4	Multiply and divide integers and decimals by powers of 10
			SS5	**Multiply by 0.1 and 0.01**
			SS6	Convert metric units
			SS7	Use formal methods to multiply integers
			SS8	Use formal methods to multiply decimals
			SS9	Use formal methods to divide integers
			SS10	Use formal methods to divide decimals
			SS11	Understand and use order of operations
			SS12	Solve problems using the area of rectangles and parallelograms
			SS13	Solve problems using the area of triangles
			SS14	**Solve problems using the area of trapezia**
			SS15	Solve problems using the mean
			SS16	**Explore multiplication and division in algebraic expressions**
	1	2.3 Fractions and Percentages of Amounts	SS1	Find fraction of given amount
			SS2	Use a given fraction to find the whole and/or other fractions
			SS3	Find a percentage of given amount using mental methods
			SS4	Find a percentage of a given amount using a calculator
			SS5	**Solve problems with fractions greater than 1 and percentages greater than 100%**

Spring 2	3	2.4 Operations and Equations with Directed Number	SS1	Understand and use representations of directed numbers
			SS2	Order directed numbers using lines and appropriate symbols
			SS3	Perform calculations that cross zero
			SS4	Add directed numbers
			SS5	Subtract directed numbers
			SS6	Multiplication of directed numbers
			SS7	Multiplication and division of directed numbers
			SS8	Use a calculator for directed number calculations
			SS9	Evaluate algebraic expressions with directed number
			SS10	Introduction to two-step equations
			SS11	Solve two-step equations
			SS12	Use order of operations with directed numbers
			SS13	**Roots of positive numbers**
			SS14	**Explore higher powers and roots**
	3	2.5 Addition and Subtraction of Fractions	SS1	Understand representations of fractions
			SS2	Convert between mixed numbers and fractions
			SS3	Add and subtract unit fractions with the same denominator
			SS4	Add and subtract fractions with the same denominator
			SS5	Add and subtract fractions from integers expressing the answer as a single fraction
			SS6	Understand and use equivalent fractions
			SS7	Add and subtract fractions where denominators share a simple common multiple
			SS8	Add and subtract fractions with any denominator
			SS9	Add and subtract improper fractions and mixed numbers
			SS10	Use fractions in algebraic contexts
			SS11	Use equivalence to add and subtract decimals and fractions
			SS12	**Add and subtract simple algebraic fractions**
Summer 1	3	3.1 Constructing, Measuring and Using Geometric Notation	SS1	Understand and use letter and labelling conventions including those for geometric figures
			SS2	Draw and measure line segments including geometric figures
			SS3	Understand angles as a measure of turn
			SS4	Classify angles
			SS5	Measure angles up to 180º
			SS6	Draw angles up to 180º
			SS7	Draw and measure angles between 180º and 360º
			SS8	Identify perpendicular and parallel lines
			SS9	Recognise types of triangle
			SS10	Recognise types of quadrilateral
			SS11	Identify polygons up to a decagon

			SS12	Construct triangles using SSS
			SS13	**Construct triangles using SSS, SAS and ASA**
			SS14	Construct more complex polygons
			SS15	Interpret simple pie charts using proportion
			SS16	Interpret Pie charts using a protractor
			SS17	Draw pie charts
	3	3.2 Developing Geometric Reasoning	SS1	Understand and use the sum of angles at a point
			SS2	Understand and use the sum of angles on a straight line
			SS3	Understand and use the equality of vertically opposite angles
			SS4	Know and apply the sum of angles in a triangle
			SS5	Know and apply the sum of angles in a quadrilateral
			SS6	Solve angle problems using properties of triangles and quadrilaterals
			SS7	Solve complex angle problems
			SS8	**Find and use the angle sum of any polygon**
			SS9	**Investigate angles in parallel lines**
			SS10	**Understand and use parallel line angle rules**
			SS11	**Use known facts to obtain simple proofs**
Summer 2	2	3.3 Developing number Sense	SS1	Know and use mental addition and subtraction strategies for integers
			SS2	Know and use mental multiplication and division strategies for integers
			SS3	Know and use mental arithmetic strategies for decimals
			SS4	Know and use mental arithmetic strategies for fractions
			SS5	Use factors to simplify calculations
			SS6	Use estimation as a method for checking mental calculations
			SS7	Use known number facts to derive other facts
			SS8	Use known algebraic facts to derive other facts
			SS9	Know when to use a mental strategy, formal written method or a calculator
	2	3.4 Sets and Probability	SS1	Identify and represent sets
			SS2	Interpret and create Venn diagrams
			SS3	Understand and use the intersection of sets
			SS4	Understand and use the union of sets
			SS5	**Understand and use the complement of a set**
			SS6	Know and use the vocabulary of probability
			SS7	Generate sample spaces for single events
			SS8	Calculate the probability of a single event
			SS9	Understand and use the probability scale
			SS10	Know that the sum of probabilities of all possible outcomes is 1

			SS1	Find and use multiples
2		3.5 Prime Numbers and Proof	SS2	Identify factors of numbers and expressions
			SS3	Recognise and identify prime numbers
			SS4	Recognise square and triangular numbers
			SS5	Find common factors of a set of numbers including the HCF
			SS6	Find common multiples of a set of numbers including the LCM
			SS7	Write a number as a product of its prime factors
			SS8	**Use a Venn diagram to calculate the HCF and LCM**
			SS9	Make and test conjectures
			SS10	Use counterexamples to disprove a conjecture