



Year 7 Maths Medium Term Plan

Autumn Term

Learning Overview

Sequences

- Generate terms of a sequence from either a term-to-term or a position-to-term rule
- Recognise arithmetic sequences and find the n th term
- Recognise geometric sequences and appreciate other sequences that arise

Algebraic Notation

- Use and interpret algebraic notation, including:
 - ab in place of $a \times b$
 - $3y$ in place of $y + y + y$ or $3 \times y$
 - a^2 in place of $a \times a$
 - Brackets
- Substitute numerical values into formulae and expressions, including scientific formulae
- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms, and factors
- Simplify and manipulate algebraic expressions to maintain equivalence:
 - Collecting like terms
 - Multiplying a single term over a bracket
 - Taking out common factors
 - Expanding products of two or more binomials
- Understand and use standard mathematical formulae; rearrange formulae to change the subject
- Model situations or procedures by translating them into algebraic expressions or formulae and by using graphs
- Use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)

Equality and Equivalence

- Simplify and manipulate algebraic expressions to maintain equivalence (same as above under Algebraic Notation)
- Substitute values in expressions, rearrange and simplify expressions, and solve equations (same as above under Working Mathematically)
- Understand and use the concepts and vocabulary of expressions, equations, inequalities, terms, and factors (same as above under Algebraic Notation)

Place Value and Ordering

- Understand and use place value for decimals, measures, and integers of any size

	- Order positive and negative integers, decimals, and fractions; use the number line as a model for ordering of the real numbers - Recognise and use relationships between operations, including inverse operations - Work interchangeably with terminating decimals and their corresponding fractions Fractions, Decimals, and Percentages - Work interchangeably with terminating decimals and their corresponding fractions (as mentioned above) - Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% - Interpret fractions and percentages as operators - Solve problems involving percentage change, including: percentage increase, decrease, original value problems, and simple interest in financial mathematics
Assessment Opportunities	An end of block (unit) test after the completion of each block. Possibly formal end of term assessments, depending on SLT decision.
Textbooks Published Lesson Resources	ISBN number: 978-0-00-840088-0 (Collins White Rose Maths, Key Stage 3, Student Book 1 – Ian Davies and Caroline Hamilton)
Home Learning Resources	Dr Frost – Homework and independent learning Specific Links to Oak Academy
Knowledge organisers	Block 1 – Sequences Block 2 – Algebraic Notation Block 3 – Equality and equivalence Block 4 – Place value and ordering Block 5 – Fractions, decimals and percentages

Autumn 1

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week?
1	1.1 - Continuing sequences; Shapes 1.2 + 1.3 - Continuing linear and non-linear sequences	By the end of this week, students should be able to: - continue linear and non-linear sequences. - continue sequences involving shapes. - Write the title correctly

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2	1.4 - Representing sequences 1.5 - Finding missing terms in sequences End of Block 1 Test	By the end of this week, students should be able to: • recognise the difference between linear and non-linear sequences • explain the term-to-term rule of numerical sequences in words. • find missing numbers within sequences.
3	2.1 + 2.2 - Inputting to one-step function machines 2.3 - Using simple expressions 2.4 - Inputs and outputs with two-step function machines	By the end of this week, students should be able to: • find the output and input of simple function machines. • use letters to generalise numbers. • substitute values into single operation expressions. • find the input and output of 2-step function machines using numbers and algebra
4	2.5 - Using multi-step expressions 2.6 - Decoding expressions End of Block 2 Test	By the end of this week, students should be able to: • generate sequences from a rule. • find functions from 2-step expressions. • substitute into 2-step expressions.
5	3.1 - Using the equals sign 3.2 - One-step linear equations 3.3 - Like and unlike terms	By the end of this week, students should be able to: • understand the meaning of equality and understand and use fact families. • solve one-step linear equations using inverse operations. • understand the meaning of like and unlike terms.
6	3.4 - Using the equivalence sign End of Block 3 Test 4.1 - Reading and writing integers	By the end of this week, students should be able to: • collect like terms and simplify expressions. • name any number up to a billion. • place any number on a number line.
7	4.2 - Comparing and ordering integers 4.3 - Using ordered lists; the range and median 4.4 - Rounding; powers of 10	By the end of this week, students should be able to: • compare two numbers using $<$ and $>$, and order a list of integers. • find the range of a set of numbers • find the median of a set of numbers. • round integers to the nearest power of 10.

Autumn 2

Week Number	Learning Overview / objective (outlined above)	What should pupils know, understand and be able to do by the end of the week?
1	4.5 - Understanding decimals 4.6 - Rounding to one significant figure 4.7 - Standard form; large numbers	By the end of this week, students should be able to: - understand place value of decimals. - position decimals on a number line. - round numbers to 1 significant figure. - write 10, 100 and 1000 as a power of 10. - write positive integers in standard form.
2	4.8 - Standard form (small numbers) End of Block 4 Test 5.1 - Tenths and hundredths - Part 1 5.1 - Tenths and hundredths - Part 2	By the end of this week, students should be able to: - investigate negative powers of 10. - write decimals in standard form. - represent tenths and hundredths as diagrams. - represent tenths and hundredths on number lines. - convert between fraction and decimals (tenths and hundredths).
3	5.2 - Converting fractions and decimals 5.3 - Using percentages 5.4 - Pie charts	By the end of this week, students should be able to: - convert fractions and decimals. - understand the meaning of percentage using a hundred square. - convert fluently between simple fractions, decimals and percentages. - use and interpret pie charts.
4	5.5.1 - Fractions below 1 5.5.2 - Fractions below 1 5.5.3 - Fractions below 1 5.6.1 - Linking fractions with division	By the end of this week, students should be able to: - represent any fraction as a diagram. - represent fractions on number lines. - identify and use simple equivalent fractions. - understand fractions as decimals
5	5.6.2 - Linking fractions with division 5.7 - Exploring fractions greater than 1 End of Block 5 Test	By the end of this week, students should be able to: - convert fluently between fractions, decimal and percentages. - to explore fractions above 1.
6	Final 2 weeks used for catching up work as some teachers may be behind. Also, having this time could help to calculate the public holidays and missed school as we go. One week may also be an assessment week for term 1 which is yet to be decided.	

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