

**MATHS – YEAR 7****AUTUMN TERM**

Pupils will have the opportunity to develop the following skills:

**Exploring sequences**

- Describe and continue sequences in diagram and number forms, both linear and non-linear

**Understanding and using algebraic notation**

- Using single function machines and series of two function machines with numbers, bar models and letters
- Forming and substituting into expressions, including generating sequences.
- Representing functions graphically

**Equality and equivalence**

- Understanding equality and fact families
- Forming and solving one-step equations
- Understanding equivalence
- Collecting like terms

**Place value and ordering**

- Describe and continue sequences in diagram and number forms, both linear and non-linear
- Integer place value up to one billion
- Decimal place value to hundredths
- Working out and using number lines
- Comparing and ordering numbers
- The range and the median
- Rounding to positive powers of ten and to one significant figure

**Fraction, decimal and percentage equivalence**

- Representing tenths and hundredths on diagrams and number lines
- Interchanging between fractions, decimals and percentages for multiples of tenths and quarters
- Interpreting pie charts

Pupils will have the opportunity to develop their knowledge about:

**Exploring sequences**

- Know the vocabulary of sequences (linear, geometric)

**Understanding and using algebraic notation**

- Understand and use function machines
- Know how to express items using formal algebra

**Equality and equivalence**

- Identify like terms and equivalence of expressions

**Place value and ordering**

- Know the place value of numbers up to 1,000,000,000
- Understand the range and median
- Understand significant figures

**Fraction, decimal and percentage equivalence**

- Know fractions, decimal and % equivalence for any number

<ul style="list-style-type: none"> <li>•Equivalent fractions</li> <li>•Converting between any fraction, decimal and percentage</li> </ul>	
<b>SPRING TERM</b>	
<p><b>Addition and Subtraction</b> – throughout the term pupils will have the opportunity to develop the following skills:</p> <ul style="list-style-type: none"> <li>•Use formal methods of addition with integers and decimals</li> <li>•Solve problems in the context of perimeter, money and frequency trees and tables</li> </ul> <p><b>Multiplication and division</b> - throughout the term pupils will have the opportunity to develop the following skills:</p> <ul style="list-style-type: none"> <li>•Multiplying by 10, 100 and 1000; unit conversions</li> <li>•Formal methods of multiplication and division</li> <li>•HCF and LCM</li> <li>•Areas of triangles, rectangles and parallelograms</li> <li>•Finding the mean</li> <li>•Finding fractions and percentages of amounts</li> <li>•Solving two-step equations (with and without a calculator)</li> <li>•Order of operations</li> </ul> <p><b>Negative Numbers</b> - throughout the term pupils will have the opportunity to develop the following skills:</p> <ul style="list-style-type: none"> <li>•Ordering directed numbers with and without context</li> <li>•Revisit four operations to include directed number</li> <li>•Using a calculator with directed number</li> <li>•Order of operations</li> </ul> <p><b>Adding and subtracting fractions</b> - throughout the term pupils will have the opportunity to develop the following skills:</p> <ul style="list-style-type: none"> <li>•Representing tenths and hundredths on diagrams and number lines</li> <li>•Adding/subtracting fractions with a common denominator, including with answers above one</li> <li>•Revisit equivalent fractions</li> <li>•Adding and subtracting fractions with simple different denominators e.g. quarters/eighths, thirds/sixths</li> <li>•Mixed questions e.g. <math>34+0.2</math></li> </ul>	<p>Pupils will have the opportunity to develop their knowledge about:</p> <ul style="list-style-type: none"> <li>• <b>Addition and Subtraction</b> - strategies for adding/subtracting any number</li> <li>• <b>Multiplication and division</b> - strategies for multiplying/dividing any number; understand and use Highest Common Factors and Lowest Common Multiples</li> <li>• <b>Negative Numbers</b> - strategies for ordering and calculating with negative numbers</li> <li>• <b>Adding and subtracting fractions</b> - strategies for adding/subtracting complex fractions; how to calculate with mixed decimals and fractions</li> </ul>
<b>SUMMER TERM</b>	
Pupils will have the opportunity to develop the following skills:	Pupils will have the opportunity to develop their knowledge about:

**Drawing, measuring and notation**

- Drawing and measuring lines and angles using ruler and protractor
- Understanding and using notation for lines and angles
- Understand parallel and perpendicular
- Recognise types of triangle, quadrilateral and other polygons
- Drawing triangles given SSS, SAS, ASA
- Drawing and interpreting pie charts

**Geometric Reasoning**

- Calculating using angles at a point, angles on a straight line and vertically opposite angles
- Calculating missing angles in triangles and quadrilaterals

**Number Sense**

- Mental arithmetic strategies
- Using known facts to derive other facts, including algebraic expressions

**Sets and Probability**

- Understanding and using set notation
- Venn diagrams
- Probability of a single event

**Prime numbers and proof**

- Types of number, including prime factorisation
- Powers and roots
- Using counterexamples

**Drawing, measuring and notation**

- Understanding and using notation for lines and angles
- Understand parallel and perpendicular
- Recognise types of triangle, quadrilateral and other polygons

**Geometric Reasoning**

- Know angle sums and reasoning for parallel lines, quadrilaterals, triangles and points.

**Number Sense**

- Recall vocab for properties of number (commutative etc)

**Sets and Probability**

- Know the different types of diagram that can be used for probability.

**Prime numbers and proof**

Identify prime, square and cube numbers