SUBJECT:	Maths	YEAR GROUP:	6

PURPOSE OF STUDY

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

THE NATIONAL CURRICULUM FOR MATHS AIMS TO ENSURE THAT ALL PUPILS:	NATIONAL CURRICULUM LINKS
• Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. • Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. • Can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.	Cross Curricular links: • Life Skills – food preparation, cooking, money, shopping, housing, jobs • DT – Cooking, designing products and packaging. • Science – collecting and recording data. • RSHE – Jobs and dreams • Outdoor Learning – measuring objects in local outdoor area.

TOPICS COVERED:

• Place Value
• Addition, Subtraction, Multiplication and Division
• Fractions
• Position and Direction
• Decimals
• Percentages
• Algebra
• Measurement

- Perimeter
- Area and Volume
- Ratio
- Statistics
- Properties of shapes
- White Rose Bakery
- White Rose Futures

INTENT OF SUBJECT:

Within Maths, pupils will develop an understanding of place value, recognising the value of digits within numbers and rounding rules, which they will apply through a range of learning tasks. Pupils will develop skills to use and apply the four operations – addition, subtraction, multiplication and division – using both written and mental methods and will use these to solve problems. Pupils will also develop an understanding of other numbers including negative numbers, prime numbers, square numbers and cubed numbers and will be able to identify these and solve problems using them. Pupils in Year 6 will also develop their understanding of fractions, including equivalent fractions, converting fractions, simplifying fractions and competing calculations of fractions using the four operations. Pupils will learn about percentages and decimals and will apply their knowledge of fractions to identify equivalent fractions, decimals and percentages. Pupils will also develop awareness and understanding of algebraic equations and identify rules within algebraic problems. Pupils will learn about different units of measurement, when these should be used and how to convert between units of measure. Pupils will also develop knowledge about statistics, developing their ability to collect, interpret and present data in a range of graphs. They will develop understanding of properties of shapes, including learning about angles – including drawing and measuring angles. Pupils will work towards completing their SATS tests, applying their knowledge they have learnt and identify how maths is used in real life contexts.

SKILLS OVERVIEW BY HALF TERM:

AUTUMN ONE	AUTUMN TWO
- Read and write numbers to 10 million. - Explain the value of each digit in numbers. - Order and compare numbers. - Round numbers to nearest 10, 100 or 1000. - Explain rounding rules. - Label negative numbers on a number line. - Apply problem solving skills to answer questions. - Use written methods to solve calculations. - Identify and use inverse operations. - Solve multi-step problems.	- Explain different types of numbers. - Identify different types of numbers, including prime, square and cubed numbers. Identify operations needed to solve problems. - Solve problems applying mathematical knowledge. - Complete mental calculations. - Explain what equivalent fractions are. - Identify equivalent fractions. - Simplify fractions. - Convert improper fractions and missed numbers. - Compare and order fractions.

• To explain the meaning of subject specific vocabulary. • To use knowledge to identify factors and multiples of numbers.	• Add fractions with same and different denominators. • Subtract fractions with the same and different denominators. • Multiply fractions by whole numbers and other fractions. • Divide fractions. • Find fractions of an amount. • Plot and write coordinates. • Translate shapes. • Reflect images.
SPRING ONE	**SPRING TWO**
• Read and write numbers to 3 decimal places. • Explain the value of each digit in a number. • Multiply numbers by 10, 100 and 1000. • Multiply and divide decimals by integers. • Convert fractions and decimals. • Explain what a percentage is. • Identify percentages on a hundred square. • Identify fractions as decimals. • Convert fractions, decimals and percentages. • Identify equivalent fractions, decimals and percentages. • Compare and order fractions, decimals and percentages. • Calculate percentages of a given amount. • Explain calculations completed. • Identify percentages of a missing value. • Identify rules for one and two step algebra problems. • Form algebraic equations. • Simplify algebraic equations. • Solve algebraic equations. • Find values of pairs in algebra.	• Identify metric and imperial measures. • Identify when to use metric measures. • Convert metric measures. • Complete calculations • Solve problems. • Convert between units of measurement. • Draw shapes with the same area. • Identify area of shape using squares. • Calculate the area of shapes. • Calculate perimeter of shapes. • Use knowledge of finding area to calculate the area of parallelograms. • Explain mathematical vocabulary relating to shapes and ratio. • Use mathematical vocabulary accurately. • Calculate volume of 3D shapes. • Find fractions of an object. • Find the ratio of an object. • Explain scale factors. • Calculate scale factors. • Use scale factors to enlarge shapes. • Solve word problems.
SUMMER ONE	**SUMMER TWO**
• Interpret data shown on a range of graphs. • Draw a range of graphs to present data. • Name parts of a circle.	• Identify ratio and proportion. • Identify money. • Understand initial costs, profit and losses.

- Explain relationship between radius and diameter.
- Answer questions about data.
- Apply knowledge of percentages to pie charts.
- Use knowledge of angles to draw pie charts.
- Find the mean average.
- Measure angles accurately.
- Draw angles accurately.
- Understand angles on a straight line.
- Understand angles around a point.
- Understand 90°angles.
- Calculate missing angles using knowledge of angles.
- Explain relationship of opposite angles.
- Understand angles in a range of shapes including triangles, quadrilaterals and polygons.
- Calculate angles in a shape using square or dotted paper.
- Calculate angles using a protractor.
- Identify 3D shape nets.
- Draw 3D shape nets.

- Identify 3D shapes.
- Draw 3D shape nets.
- Calculate area and volume of shapes.
- Solve problems relating to real world experiences.
- Collect data.
- Present data on graphs.
- Convert between units of measure.
- Solve comparison problems.
- Identify percentages.
- Use decimal places accurately.
- Explain mathematical vocabulary and use this accurately.
- Be able to solve comparison problems relating to time and money.
- Complete calculations.
- Order numbers.
- Calculate perimeter.
- Complete scale drawings.
- Teamwork.
- Communication.