



## Maths Curriculum KS3

### Intent

Through our maths curriculum we aim to ensure that all students:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At The Grove, these skills are embedded within Maths lessons and developed consistently over time. We are committed to ensuring that students are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing students curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

Year 1		
Term	Topic	Content
Half term 1	Sequences Expressions, functions and formulae	<ul style="list-style-type: none"> <li>• order and arrange combinations of mathematical objects in patterns and sequences</li> <li>• generate and describe linear number sequences</li> <li>• use simple formulae</li> <li>• express missing number problems algebraically</li> <li>• find pairs of numbers that satisfy an equation with two unknowns</li> <li>• substitute values in expressions, rearrange and simplify expressions, and solve equations</li> </ul>
		<ul style="list-style-type: none"> <li>• simplify and manipulate algebraic expressions to maintain equivalence by collecting like terms</li> </ul>

Half term 2	Place value	<ul style="list-style-type: none"> <li>● count from 0 in multiples of 4, 8, 50 and 100</li> <li>● find 10 or 100 more or less than a given number ●</li> <li>recognise the place value of each digit in a three-digit number (hundreds, tens, ones)</li> <li>● compare and order numbers up to 1000</li> <li>● identify, represent and estimate numbers using different representations</li> <li>● read and write numbers up to 1000 in numerals and in words</li> <li>● solve number problems and practical problems involving these ideas</li> <li>● read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</li> </ul>
Half term 3	Fractions, Decimals and Percentages	<ul style="list-style-type: none"> <li>● understand and use place value for decimals, measures and integers of any size</li> <li>● order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, &lt;, &gt;, ≤, ≥</li> <li>● count up and down in tenths</li> <li>● recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10</li> <li>● recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators <ul style="list-style-type: none"> <li>● recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</li> </ul> </li> <li>recognise and show, using diagrams, equivalent fractions with small denominators</li> <li>● define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively,</li> </ul>

		<p>express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%</p>
Half term 4	Units of measure	<ul style="list-style-type: none"> <li>• solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</li> <li>• use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</li> </ul>
Half term 5	Time	<ul style="list-style-type: none"> <li>• estimate and read time with increasing accuracy to the nearest minute</li> <li>• record and compare time in terms of seconds, minutes and hours</li> <li>• use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight <ul style="list-style-type: none"> <li>• know the number of seconds in a minute and the number of days in each month, year and leap year</li> </ul> </li> <li>• compare durations of events [for example to calculate the time taken by particular events or tasks].</li> </ul>
Half term 6	Properties of Shapes Angles	<ul style="list-style-type: none"> <li>• use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).</li> <li>• draw 2-D shapes using given dimensions and angles</li> <li>• recognise, describe and build simple 3-D shapes, including making nets</li> <li>• compare and classify geometric shapes based on their properties and sizes</li> <li>•</li> </ul>



## English Curriculum KS3

### Intent

To provide a meaningful and engaging curriculum to meet the needs of all our pupils whilst promoting literacy and numeracy development throughout their learning journey. We want pupils to understand a variety of different literature and genres, and to place them in the wider world. We will celebrate and explore different writers from the past and the present. We will investigate the relationships that people, and groups have with each other and the wider world. The aim will be to develop analytical skills using a range of texts, novels and plays. These topics link directly to the National Curriculum guidance.

Year 1		
Term	Topic	Content
Half term 1	<b>Creative Writing</b> Dystopian Fiction (Fiction reading and writing)	An introduction to different dystopian texts  <b>Pupils will be able to:</b> <ul style="list-style-type: none"> <li>- Read different examples of dystopian texts</li> <li>- Retrieve information</li> <li>- Develop Skimming skills</li> <li>- Practice making inferences by looking at different language techniques</li> <li>- Writing dystopian fiction</li> </ul> <b>Texts will include:</b> 1984 by George Orwell, Divergent by Veronica Roth, Fahrenheit 451 By Ray Bradbury and The Hunger Games by Suzanne Collins.
Half term 2	<b>Poetry</b> Poetry that is related to different	Reading, analysing, unpicking and discussing different examples of conflict poetry. The context of each poem will briefly be explored in order for students to gain wider

	<p>themes and emotions. (Good vs Evil, Love, Anger, Darkness and Light, Power, Identity, Conflict)</p>	<p>understanding.</p> <p><b>Pupils will be able to:</b></p> <ul style="list-style-type: none"> <li>- Read different poems</li> <li>- Retrieve language that conveys different themes.</li> <li>- Discuss the different poetic techniques used by the writers.</li> <li>- Think about the context and purpose of the poems.</li> <li>- Write their own poetry based on their chosen theme.</li> </ul> <p><b>Texts will include:</b> Exposure - Wilfred Owen, Kamikaze - Beatrice Garland, In Flanders Fields By John McCrae, Love and a Question - Robert Frost</p>
<p>Half term 3</p>	<p><b>Non-Fiction</b> Famous Speeches (Studying a variety of famous speeches from around the world)</p>	<p>Reading, discussing and exploring the language used in different examples of well known speeches.</p> <p><b>Pupils will be able to:</b></p> <ul style="list-style-type: none"> <li>- Reading different speeches from around the world.</li> <li>- Discuss the impact purpose behind the different speeches.</li> <li>- Researching the people who have written well known speeches.</li> <li>- Exploring the language by identifying the different techniques used.</li> <li>- Write a speech of their own.</li> </ul> <p><b>Texts will include:</b> Freedom or Death By Emmeline Pankhurst (1913), We Shall Fight On The Beaches By Winston Churchill (1940), I Have A Dream By Martin Luther King (1963), United Nations - Birthday Speech By Malala Yousafzai (2013)</p>
<p>Half term 4</p>	<p><b>Modern Novel</b> Wonder By R.J Palacio</p>	<p>Reading, discussing and exploring the language used in a modern novel.</p> <p><b>Pupils will be able to:</b></p> <ul style="list-style-type: none"> <li>- Read a fictional novel.</li> <li>- Discuss the different plot and themes explored in the novel.</li> <li>- Consider the writer's purpose.</li> <li>- Explore the language and structure of the novel.</li> </ul> <p><b>Texts will include:</b></p> <p>Wonder By R.J Palacio</p>

Half term 5	<b>Shakespeare</b> A Midsummer	Reading, discussing and exploring the different themes and ideas presented throughout the text. Some scenes
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	Night's Dream	<p>will be acted out which will develop spoken language skills and confidence.</p> <p><b>Pupils will be able to:</b></p> <ul style="list-style-type: none"> <li>- Read part of a play</li> <li>- Briefly act out scenes</li> <li>- Discuss the story of the play</li> <li>- Discuss the different themes in the play</li> </ul> <p><b>Texts will include:</b></p> <p>Midsummer Night's Dream By William Shakespeare</p>
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Half term 6	<b>19th Century</b> Oliver Twist	<p>Reading 19th century text Oliver Twist. Discussing, considering the different purposes and the messages being conveyed in the story. Linkin the story 19th century context. Exploring the characters throughout the story and discussing how they are presented.</p> <p><b>Pupils will be able to:</b></p> <ul style="list-style-type: none"> <li>- Read parts of a 19th century novel</li> <li>- Consider the message of the story</li> <li>- Discuss the story and the characters</li> <li>- Discuss the different themes and language in the novel.</li> </ul> <p><b>Texts will include:</b></p> <p>Oliver Twist by Charles Dickens</p>
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## Science Curriculum KS3

## Intent

The intent of our Science Curriculum is to develop a sense of excitement, fun and curiosity of scientific phenomena through the power of knowledge and practical application. We want the curriculum to be 'hands on' and practical with lots of in class experiments taught through a range of specially modified approaches. We aim to give all students an understanding of the world around them whilst acquiring specific skills and knowledge to help them to think scientifically, to gain an understanding of scientific processes and also an understanding of the uses and implications of Science, today and for the future. Scientific enquiry skills are embedded in the topics taught in Primary and these topics are revisited and developed throughout their time at school. Repetition is key and time is given for students to fully immerse themselves in a topic for a half term. Topics are taught in the school linearly and studied again in further detail throughout Key Stage Two and Three. This model allows students to build upon their prior knowledge and increase their enthusiasm for the topics whilst embedding this procedural knowledge into the long-term memory. All students are encouraged to develop and use a range of skills including observations, planning and investigation. We will encourage students to be interested in and question the world around them, becoming independent learners in exploring possible answers for their scientific based questions and ideas. Scientific vocabulary is taught and built up using a range of communication tools, and effective questioning to communicate ideas is encouraged.

Key

Physics

Chemistry

Biology

Year 1		
Term	Topic	Content
Half term 1	Organisms	<ul style="list-style-type: none"><li>• Gas exchange in mammals.</li><li>• Breathing</li><li>• Photosynthesis</li><li>• Drugs, alcohol and smoking</li></ul>

	Matter	<ul style="list-style-type: none"> <li>• Nutrition, food tests and diet and digestion</li> <li>• Atoms, elements and the Periodic Table.</li> <li>• Atoms, elements and compounds.</li> <li>• Naming compounds.</li> <li>• Chemical symbols and formulae.</li> <li>• Chemical reactions.</li> <li>• Polymers</li> <li>• Group 1, 7 and the noble gases</li> </ul>
Half term 2	Forces	<ul style="list-style-type: none"> <li>• Friction</li> <li>• Air resistance</li> <li>• Buoyancy</li> <li>• Drag Forces</li> <li>• Pressure in solids, liquids and gases</li> <li>• Changing materials</li> </ul>
Half term 3	Ecosystems	<ul style="list-style-type: none"> <li>• Minerals in the soil</li> <li>• Biotechnology (farming methods, pesticides)</li> <li>• Plant mineral ions</li> <li>• Food chains/food webs</li> <li>• Habitats</li> <li>• Organism adaptation</li> <li>•</li> </ul>
Half term 4	Reactions	<ul style="list-style-type: none"> <li>• Atoms in chemical reactions (copper sulphate crystals)</li> <li>• Combustion (different types of fire)</li> <li>• Conservation of mass (heating salt water)</li> <li>• Exothermic and Endothermic reactions</li> <li>• Thermal decomposition (extension)</li> </ul>



Half term 5	<p>Sound and</p> <p>Light</p> <p>Photosynthes</p> <p>is</p>	<ul style="list-style-type: none"> <li>● Introduction to waves</li> <li>● Soundwaves</li> <li>● Frequency</li> <li>● Light as a wave</li> <li>● Reflection</li> <li>● Refraction of light.</li> <li>● Colour.</li> <li>● Radiation and Energy</li> <li>● Modelling Waves</li> <li>● Electromagnetic Waves</li> </ul> <ul style="list-style-type: none"> <li>● Photosynthesis reaction and adaptations of the leaf for photosynthesis</li> <li>● Factors affecting the rate of photosynthesis</li> <li>● Investigating the rate of photosynthesis</li> <li>● How plants use glucose</li> <li>● Maximising the rate of photosynthesis in a commercial</li> </ul>
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Half term 6	Chemical Calculations  Electrical Circuits	<ul style="list-style-type: none"><li>● Relative masses and moles</li><li>● Equations and calculations</li><li>● From masses to balanced equations</li><li>● Yields of a chemical reaction</li><li>● Atom economy</li><li>● Concentrations</li><li>● Titrations and calculations</li><li>● Volumes of gases</li></ul> <ul style="list-style-type: none"><li>● Static Electricity</li><li>● Current and Charge</li><li>● Potential difference and resistance</li><li>● Component Characteristics</li><li>● Series Circuits</li></ul>
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