

Subject: Science Year 8

Half term 1	<p><u>Separation</u> Students investigate what solutions are and explore different methods by which to separate different substances according to their physical properties. Students then learn how to apply these techniques to real world scenarios such as obtaining potable drinking water and identifying criminals!</p> <p><u>Energy</u> Students are introduced to a key principle in Science; what is energy, how is it observed, how it is transferred from one place to another and how we can use energy.</p>
Half term 2	<p>The studies in relation to energy continue as students explore the link between energy, fuels and power.</p> <p><u>Health and Lifestyle</u> Students explore the components of a healthy diet. They explore what nutrients are and how we can test for different components in food. They learn about how our bodies digest food and the roles of bacteria and enzymes in this process. We also consider the negative effects of smoking and drugs on our short and long-term health.</p>
Half term 3	<p><u>Ecosystems Processes</u> In this unit, students gain a deeper understanding of the intricate balance of nature. They learn how plants produce their own food and how food leads to the release of energy. This is further developed when they explore how this energy is then transferred within feeding relationships and the impact of disruptions to this balance.</p> <p><u>Adaptation and Inheritance</u> Survival of the fittest is the key to this unit. Students gain an understanding of the resources that plants and animals compete for in order to survive. They learn why there are differences within some organisms but not in others. Students are then introduced to the fascinating field of genetics; where have we come from and what might we become?</p>
Half term 4	<p><u>The Periodic Table</u> Students explore the history and structure of this fundamental tool of Science. They investigate patterns in behaviour in order to make predictions, and gain a deeper understanding of chemical reactions.</p> <p><u>The Earth</u> Students explore the ground beneath our feet and above our heads. They explore the history of Earth in terms of rock and atmosphere formation and</p>

	<p>gain an appreciation of the recycling of the key element, carbon. By understanding how Earth formed as it did, they are then better placed to appreciate the implications of climate change in the remaining parts of this unit.</p>
Half term 5	<p><u>Electricity and Magnetism</u> Plug it in and light it up. Students build on learning from primary school in order to develop understanding of electric circuits. They will consider what 'electricity' is and the factors that affect how easily it can flow. Students then explore the mysterious world of magnetism and then link learning to electricity in order to explore electromagnetism.</p> <p><u>Motion and Pressure</u> What goes up must come down! Students learn the relationships between speed, acceleration, time and distance; and how to represent this mathematically and graphically. Students the gain a deeper knowledge and understanding of the causes and effects of pressure in various substances.</p>
Half term 6	<p><u>Reactions of Metals</u> Students develop studies initiated in year 7 where they explore in greater detail the reactions of metals with acids, water and oxygen. They investigate how metals are extracted and how they are able to displace each other. Studies then move on to exploring ceramics and polymers.</p> <p>Having sat 'end of topic' tests during the course of the year, during this half term, students will sit an 'end of year' exam. It is important that our students start from an early stage to practice revision skills for both small and large bodies of work.</p>
Homework expectations	<p>Homework is set approximately once a fortnight, but this depends on the type of homework involved. Students will also sit end of topic tests so they will be required to revise/prepare for this outside of lesson time.</p>
By the time you finish key stage 3 you'll be...	<p>.....comfortable and confident with the fundamental principles of the main aspects of Science. Your interest has been piqued, you will be thinking like a scientist and you will still have an enquiring mind! These foundation years will enable you to reach upwards and outwards to achieve those highest grades at GCSE.</p>