

STMLC

Year Group: 8

Subject Science

Specification: KS3 Exploring science

Autumn Term 1	<p>8F- The periodic table This unit uses the context of fireworks to develop students' understanding of matter, atoms and chemical and physical change from year 7. Students will explore the periodic table and make use of the trends in the periodic table to make predictions about physical and chemical properties of elements and their compounds.</p> <p>8G- Metals and their uses This unit focuses on the key physical and chemical properties that make something a metal. Students are also introduced to the general reactivity series of metals by experimentally illustrating that reactions can occur at different speeds. Students will then make use of their understanding of the reactivity series to make justifications of metals being used in different building situations.</p>
Autumn Term 2	<p>8A- Food and nutrition This unit looks at the main components in the human diet and why they are needed. Students will also explore what happens to the body if the key nutrients are not consumed. The digestive system is also covered in some detail and the idea of enzymes is introduced.</p> <p>8C- Breathing and respiration This unit explores the respiratory system in more detail in humans and introduces gas exchange system within other organisms. Students will develop a basic understanding of both aerobic and anaerobic respiration in humans by using the theme of water sports.</p> <p>8I- Fluids This unit makes use of the theme of deep sea diving to explain how fluids affects pressure, floating, sinking and drag. Students will make use of making models to investigate how we can create objects that reduce the effects a fluid has on it. Students will develop of an understanding of the key energy changes that occur when a substance changes state.</p>
Spring Term 3	<p>8K- Energy transfers This unit makes use of energy in the home to explain the three ways of transferring heat energy: conduction, convection and radiation. Students will explore how these three transfer the heat energy but also how we can reduce them from working within our homes. Students make use of mathematical skills to show how much power an appliance generates and how efficient they are.</p> <p>8E- Combustion This unit uses the context of combustion engines to cover combustion and oxidation reactions, including those of hydrocarbons, metals and non-metals. Students will look at the pollution of the air by the products of fossil fuel combustion. Students will discuss the impact of global warming and methods for controlling carbon dioxide emissions.</p>
Spring Term 4	<p>8B- Plants and photosynthesis This units explores the key chemical reaction, photosynthesis and how it can be affected. Students will develop key understanding of the parts of the plant in their roles for both photosynthesis and for reproduction.</p> <p>8D- Unicellular organisms This unit makes use of the theme of diseases to take a detailed look at what unicellular organisms are and the differences between the different types. Students will research how these organisms can be a problem and how as humans we can make use of the them also.</p>
Summer Term 5	<p>8J- Light This unit revises work from KS2 on light, which is then extended to consider how light travels and what happens when it meets an object including reflection and refraction. Students will explore how we see in colour and what happens when we make use of colour filters.</p>

	<p>GCSE Preparation- Rates of Reaction</p> <p>This unit introduces students to a key practical topic within the GCSE scheme of work and this will develop their practical skills ready for the GCSE course. Students will explore the factors that affect the rate of a reaction, including temperature, surface area, concentration, and pressure and be able to show their understanding theoretically and practically.</p>
Summer Term 6	<p>GCSE Preparation- Forces and Motion</p> <p>This unit introduces students to a key topic within the GCSE scheme of work and this will develop their key skills ready for the GCSE course. Students began by experimentally determining the relationships between a force acting on an object and the acceleration, and the mass of the object and the acceleration. Students will develop their mathematical skills in showing the relationships in terms of a graphs.</p> <p>Space Project</p> <p>This unit allows students to develop their ability to research effectively, work within a team and produce an independent piece of extended work in the context of Earth and Space. Students will research into the seasons on Earth, explaining the Earth's magnetic field, show understanding of the different planets within the solar system and how as humans we have explored space.</p>
Home learning	<p>Students are set a variety of homework tasks including worksheets, research tasks and online tasks on active learn. Students are expected to spend 45 minutes per week on homework. Students are also expected to spend 5-10 minutes after each lesson to review their learning from the lesson focusing on the keywords.</p>
One thing to do	<p>Make use the news publications to discover what is happening with science now.</p>
How technology can support you	<p>The use of KS3 bitesize and Active Learn deliver tailored quizzes and support materials with the students learning. The use of you tube can allow them to see into the world of science in more of a real life context.</p>
By the end of KS3 you will be able to	<p>Be well prepared to study the KS4 national curriculum.</p>

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