

Overall Curriculum Aim:

Develop a love of science and intellectual curiosity whilst embedding the knowledge and skills required to be successful at GCSE and beyond.

Scheme for Learning

Curriculum Area – Science

Overview – Year 7 Science 2021-22

Personnel Responsible – Mrs. R. Cooper

Quality Assured by – Mr. J. Anderson (AVP)

Exam Board/Qualification at KS4 – AQA Trilogy/Separate

Assessment Cycle	Topic/Unit Title – Big Questions	Rationale/Skill Development	Links to Other Curriculum Areas
1	<p>Particle Model, Energy, Cells – building blocks of science.</p> <p>Big Question: How can we use science to explain our place in the universe?</p>	<p>Students will develop their knowledge of the building blocks of Science. Students will acquire the basic knowledge needed to carry them through their Science journey at Q3 Langley. Students will develop knowledge on the basic units of life (cells) and will use scientific apparatus (microscopes) to identify key parts of a cell. Students will develop their knowledge of the particle model, whilst also developing their health and safety skills when using Bunsen burners. Students will begin to study forces and apply new knowledge to everyday situations.</p>	<p>Atoms and Elements (Y8 Cycle 1, Y9 Cycle 2) Heat Transfer (Y8 Cycle 1) Gravity (Y10 Cycle 1) Forces (Y8 Cycle 2, Y10 Cycle 1) Cells (Y9 Cycle 1) Respiration (Y8 Cycle 2, Y10 Cycle 2) Photosynthesis (Y8 Cycle 3, Y10 Cycle 1) Links to AO1, AO2 and AO3.</p>
2	<p>Light, Photosynthesis, Solar System, Rock Cycle.</p> <p>BIG Question: What role does energy have in our universe?</p>	<p>Students will investigate how light acts when it enters different mediums, whilst also developing their experimental skills (reflection and refraction practical). Students will then understand how materials are cycled through the environment in the rock cycle. Students will develop an understanding of the universe they are in and use mathematical skills to calculate weight, gravity and mass.</p>	<p>Energy (Y8 Cycle 3, Y9 Cycle 1) The Eye (Year 10 Separate) Cells (Y7 Cycle 1) Finite Resources (Y10 Cycle 4) Photosynthesis (Y10 Cycle 2, Y9 Cycle 1) Links to AO1, AO2 and AO3.</p>
3	<p>Separation Techniques, Reproduction, Electricity.</p> <p>BIG Questions: How do we separate a mixture?</p> <p>What is in an electrical circuit?</p> <p>How does life begin?</p>	<p>Students will develop their experimental skills through a range of experiments where they will need to use and select specialist equipment. Students will develop knowledge on different separation techniques before applying this knowledge to practical activities. Students will explore electrical circuits and construct series and parallel circuits. Students will develop their mathematical skills by calculating resistance, current and potential difference. Students will then develop knowledge on the human and plant reproductive systems.</p>	<p>Energy (Y7 Cycle 2, Y9 Cycle 1) Separation Techniques (Y10 Cycle 3) DNA (Y10 Cycle 3, Y9 Cycle 1) Electricity (Y9 Cycle 4) Reproduction (Y10 Cycle 3) Links to AO1, AO2 and AO3.</p>
4	<p>Sound, Ecosystems, Acids and Alkalis.</p> <p>BIG Question: What can waves do?</p> <p>What is the most important factor in an ecosystem?</p> <p>What does the pH scale show us?</p>	<p>Students will develop knowledge on different types of waves and apply this knowledge to understand how the human ear works. Students will develop their experimental skills through practical work when studying the pH scale. Students will use knowledge gained from lesson to apply to everyday household items. Students will develop knowledge of interdependence of species and study the feeding relationships of different organisms.</p>	<p>pH Scale (Y10 Cycle 1) Waves (Y8 Cycle 3, Y10 Cycle 3) Ecosystems (Y8 Cycle 1, Y10 Cycle 4) Alkali Metals (Y8 Cycle 1) Links to AO1, AO2 and AO3.</p>