



Students in science complete units as part of a carousel programme. For example, one class will study a biology topic whilst another works towards a chemistry unit. By the end of each academic year all classes have completed the same units.

Year 7	Year 8	Year 9	Year 10	Year 11
<p><b>Working In The Laboratory</b> - A unit looking at safe working practices in the laboratory.</p> <p><b>The Particle Model</b> - A unit looking at how we can use scientific models to help understand the behaviour of materials.</p> <p><b>Basic Chemistry</b> - A unit looking at the elements and how they react with each other.</p> <p><b>Energy And Energy Resources</b> - A unit looking at the different types of energy that exist and the energy resources we use to provide our electricity.</p>	<p><b>Variation And Interdependence</b> - A unit looking at the variety of life that exists on the Earth and what is responsible for this variety.</p> <p><b>Earth And Space</b> - A unit looking at how the Earth and the rest of our Solar System function.</p> <p><b>The Changing Earth</b> - A unit looking at the evolution of the Earth over time through the study of rocks and their formation.</p> <p><b>Nutrition</b> - A unit looking at the food groups essential to life and what can happen if they are not eaten in</p>	<p>From September 2015 students have been following the Edexcel Combined Science GCSE course. Students will sit their GCSE examinations in summer 2018 and will have an externally marked exam in summer 2017 that serves as a pre-public exam to inform them of their progress. Students throughout Year 9 will cover:</p> <p><b>Biology</b></p> <p>Microscopic organisms and cells the building blocks of life How DNA shapes who we are and what can happen if DNA goes wrong e.g. mutations</p>	<p>Students in year 10 follow the OCR 21<sup>st</sup> Century Science A specification.</p> <p><b>Biology</b></p> <p>B1.1 What are genes and how do they affect the way that organisms develop? B1.2 Why can people look like their parents, brothers and sisters, but not be identical to them? B1.3 How can and should genetic information be used? How can we use our knowledge of genes to prevent disease? B1.4 How is a clone made? B2.1 How do our bodies</p>	<p>Students in year 11 follow the OCR 21<sup>st</sup> Century Additional Science A specification.</p> <p><b>Biology</b></p> <p>B4.1 How do chemical reactions take place in living things? B4.2 How do plants make food? B4.3 How do living organisms obtain energy? B5.1 How do organisms develop? B5.2 How does an organism produce new cells?</p>



<p>Beamont Collegiate Academy</p> <p><b>Forces</b> - A unit looking at the different types of forces that exist and how we can measure and calculate their sizes.</p> <p><b>Cells, Tissues, Organs and Microbes</b> - A unit looking at cells which are the building blocks of life.</p> <p><b>Reproduction And Growth</b> - A unit looking at how human life develops from conception to birth through to puberty.</p>	<p>balanced amounts.</p> <p><b>Electricity and Electromagnets</b> - A unit looking at what electricity is and how it can be used with particular focus on the production and function of electromagnets.</p> <p><b>Chemical Reactions</b> - A unit taking a more in depth look at a variety of complex chemical reactions and how they can be represented using chemical equations.</p> <p><b>Respiration, Photosynthesis and Excretion</b> - A unit looking at a number of life processes that are essential to life and that have helped shape the world around us.</p>	<p>Enzyme activity and how the body transports substances How plants and animals grow and about new research into cell division such as stem cell research How our brains control our body through the nervous system</p> <p><b>Chemistry</b></p> <p>How the periodic table was decided and how the elements are ordered - lots of experiments will help the students understand this How mixtures are separated using practical techniques that have a basis in the real world e.g. forensic science How molecules are formed with ionic and covalent bonds</p> <p><b>Physics</b></p> <p>The relationship between speed, distance and time How momentum is transferred and the safety</p>	<p>resist infection? B2.2 What are vaccines and antibiotics and how do they work? B2.3 What factors increase the risk of heart disease? B2.4 How do our bodies keep a healthy water balance? B3.1 Systems in balance - how do different species depend on each other? B3.1 Systems in balance - how do different species depend on each other? B3.2 How has life on Earth evolved? B3.3 What is the importance of biodiversity?</p> <p><b>Chemistry</b></p> <p>C1.1 Which chemicals make up air, and which ones are pollutants? How do I make sense of data about air pollution? C1.2 What chemical reactions produce air</p>	<p>B5.3 How do genes control growth and development within the cell? B6.1 How do animals respond to changes in their environment? B6.2 How is information passed through the nervous system? B6.3 Can reflex responses be learned? B6.4 How do humans develop more complex behaviour?</p> <p><b>Chemistry</b></p> <p>C4.1 What are the patterns in the properties of elements? C4.2 How do chemists explain the patterns in the properties of elements? C4.3 How do chemists explain the properties of compounds of Group 1 and Group 7 elements? C5.1 What types of</p>
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			<p>important?  C3.3 Why do we need chemicals such as alkalis and chlorine and how do we make them?  C3.4 What can we do to make our use of chemicals safe and sustainable?</p> <p><b>Physics</b></p> <p>P1.1 What do we know about the place of the Earth in the Universe?  P1.2 What do we know about the Earth and how it is changing?  P2.1 What types of electromagnetic radiation are there? What happens when radiation hits an object?  P2.2 Which types of electromagnetic radiation harm living tissue and why?  P2.3 What is the evidence for global warming, why might it be occurring, and how serious a threat is it?</p>	<p>flow of what?  P5.2 What determines the size of the current in an electric circuit and the energy it transfers?  P5.3 How do parallel and series circuits work?  P5.4 How is mains electricity produced? How are voltages and currents induced?  P5.5 How do electric motors work?  P6.1 Why are some materials radioactive?  P6.2 How can radioactive materials be used and handled safely, including wastes?</p> <p><b>Unit A154: Additional Science A Controlled assessment</b></p> <ul style="list-style-type: none"> <li>• comprises a Practical Investigation task</li> <li>• is assessed by teachers, internally standardised and</li> </ul>
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			<p>P2.4 How are electromagnetic waves used in communications? P3.1 How much energy do we use? P3.2 How can electricity be generated? P3.3 Which energy sources should we choose?</p> <p><b>Unit A144: Science A Controlled assessment</b></p> <ul style="list-style-type: none"><li>• comprises a Case Study task and a Practical Data Analysis task</li><li>• is assessed by teachers, internally standardised and then externally moderated by OCR</li><li>• Assesses the quality of written communication.</li></ul>	<p>then externally moderated by OCR</p> <ul style="list-style-type: none"><li>• assesses the quality of written communication.</li></ul>
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**Forces** - A unit looking at the different types of forces that exist and how we can measure and calculate their sizes.

**Chemical Reactions** - A unit taking a more in depth look at a variety of complex chemical reactions and how they can be represented using chemical equations.

**Respiration, Photosynthesis and Excretion** - A unit looking at a number of life processes that are essential to life and that have helped shape the world around us.

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