



Core Science

Key Stage 4 Framework for Learning

Year 11 2016-2017: I am Creative, Successful and Happy

Syllabus:

AQA Core Science 2012

Autumn 1

Knowledge	<p>Core only students will learn the following topics in autumn 1 (from core biology) :</p> <p>Biology part 1 Diet and exercise Infectious diseases Antibiotics Immunity The nervous system Hormones The menstrual cycle Using hormones to control fertility Drugs and you Drug testing</p> <p>Biology part 2 Adaptations Extreme adaptations Competition Distribution Pyramids of biomass Energy flow in food chains The carbon cycle Variation Cloning and Genetic modification Classification Evolution</p>
Skills	
Assessment	End of topic test assessments. Teacher assessment of classwork.
Reward & enrichment	Discussing inherited genetic disorders and the treatment of these. Discussing the increased prevalence of some genetic disorders in different countries where customs varied. Discussion of the ethical and moral implications of using stem cells for research.
Character	<p>Reflection – students are encouraged to reflect on every practice exam performance through the use of an exam PLC.</p> <p>Practice – Using their exam PLC, students should identify areas of strength and weakness and use Doodle, their revision guides and the revision hub drop in to practice key skills.</p>

Autumn 2

Knowledge	<p>Core only students will learn the following topics in autumn 2 (from core chemistry) :</p> <p>Chemistry part 1 Atoms and elements Chemical reactions Limestone and the limestone cycle Metals and alloys Extracting metals Uses of crude oil Extraction of crude oil Fractional distillation Biofuels Global warming</p> <p>Chemistry part 1 Cracking Polymers</p>
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	<p>Designer polymers Making ethanol Plant oils Extracting oils from seeds Emulsions Making margarine Structure of the Earth Continental drift The Earth's atmosphere</p>
Skills	
Assessment	College entry examinations
Reward & enrichment	<p>Understanding the possible risks of the new technology of nanoscience. To know why certain industrial processes have come about and the importance of them to society eg Haber process. Discussing the differences between saturated and unsaturated fats and their impact on health and lifestyle. The benefits of emulsifiers in everyday household products.</p>
Character	<p>Motivation – students are provided key motivational messages throughout their Year 11 Science experience in order for them to gain confidence. Students will be motivated by both their teachers, the science leadership team and ISP coaches who will liaise to ensure students are confident and independent learners.</p> <p>Resiliency – students are encouraged to tackle a multitude of end of topic tests, exam questions and knowledge test which incorporate exam style questions which require resiliency.</p>

Spring 1

Knowledge	<p>Physics part 1 Heat transfer through convection, conduction and radiation Evaporation Condensation Comparing energy transfers Payback time Solar panels Specific heat capacity Uses of specific heat capacity Energy types Energy transfer Energy efficiency Using electricity Paying for electricity</p> <p>Physics part 2 Generating electricity Fossil fuels Nuclear power Biomass Alternative methods of generating electricity The national grid Waves Transverse and longitudinal waves Electromagnetic spectrum Sound waves Doppler effect Red shift The big bang theory</p>
Skills	
Assessment	End of topic test assessments. Teacher assessment of classwork.
Reward & enrichment	<p>Understand the benefits of the space race with regard to the nation that is developing its space programme and the availability of funds to support a space programme. Be able to appreciate the issues associated with nuclear power and the generation of electricity.</p>
Character	<p>Creativity – students are encouraged to use their creativity in group and application tasks. Topics such as modelling, presentations and problem solving will allow opportunity for this skill to be developed. Students will also be encouraged to be creative with their time to accommodate all subjects.</p> <p>Empathy – student-friendly mark schemes are provided and used by peers to assess work and give constructive feedback. Students will provide support to their peers during group and investigative activities.</p>

Spring 2

Knowledge	Revision
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Skills	
Assessment	End of topic test assessments. Teacher assessment of classwork.
Reward & enrichment	
Character	<p>Responsibility – students are provided with a choice of revision topics at afterschool sessions and it is their responsibility to choose an area of weakness to focus on. Staff are available to support at the revision hub and this is to promote independence of students. Students will be encouraged to use Doodle to look at revision topics from their own areas of weakness and assess themselves using the online quiz tests.</p> <p>Curiosity – students are encouraged to learn independently through doodle, GCSE Pod and using Science revision resources.</p>
Summer 1	
Knowledge	Revision
Skills	
Assessment	Walking talking mocks
Reward & enrichment	
Character	<p>Optimism – students continuously track their own progress throughout the year and reflect on their learning journey. This for many can provide optimism and motivation. Students will use PLC's after every sub topic to monitor their own learning and set targets for future revision. Teachers will encourage students to be optimistic as they approach the start of their exams</p>