



Triple Science

Key Stage 4 Framework for Learning

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

Syllabus:

AQA Triple Science

Autumn 1

Knowledge	<p>CHEMISTRY</p> <p>C3.1 The periodic Table -Developments of historic and modern periodic tables -Properties and reactivity of group 1 and 7 elements</p> <p>C3.2 Water -Hard and soft water -Making hard water soft -Purifying water -Fluorides and filters -Drinking seawater</p> <p>BIOLOGY</p> <p>B3.1 Movement of molecules in and out of cells -Osmosis -Dissolved substances -Sports drinks investigation -Diffusion -Exchange surfaces/systems in animals and plants</p> <p>PHYSICS</p> <p>-X-Rays and Ultrasound -waves -reflection and refraction -lenses -forming images The eye -Lens power -Total internal reflection</p>
Skills	
Assessment	
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>CHEMISTRY</p> <p>C3.3 Energy -Measuring food and fuel energy -Energy changes -Energy level diagrams -Calculating bond energies -Hydrogen fuel</p> <p>C3.4 Chemical Analysis</p>
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	<ul style="list-style-type: none"> -Identifying positive and negative metal ions -Using chemical tests -Titrations <p><u>BIOLOGY</u></p> <p><u>B3.2 Transport systems in plants and animals</u></p> <ul style="list-style-type: none"> -The heart and circulatory system -Transport mechanisms in plants <p><u>B3.3 Homeostasis</u></p> <ul style="list-style-type: none"> -Kidneys -Renal dialysis -Kidney transplants -Regulating body temperature -Diabetes <p><u>PHYSICS</u></p> <ul style="list-style-type: none"> -Centre of mass -pendulums -moments -levers -toppling objects -pressure -Hydraulics -Circular motion -Size of centripetal force
Skills	
Assessment	
Reward & enrichment	<p>Understanding the possible risks of the new technology of nanoscience.</p> <p>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><u>CHEMISTRY</u></p> <p><u>C3.5 Ammonia and the haber cycle</u></p> <ul style="list-style-type: none"> -Making ammonia -Conditions for the haber process -Equilibrium and conditions <p><u>C3.5 Organic compounds</u></p> <ul style="list-style-type: none"> -Alcohols -Carboxylic acids -Esters <p><u>BIOLOGY</u></p> <p><u>B3.4 Humans and their environment</u></p> <ul style="list-style-type: none"> -Human populations -Pollution -Deforestation -Global warming -Biofuels -Microbes and food production -Food chains and food production -Fishing



	<p>PHYSICS</p> <ul style="list-style-type: none"> -Motor effect -transformers -Step up and step down transformers -Switch mode transformers
Skills	
Assessment	
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.</p> <p>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
Skills	
Assessment	
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	
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>