Triple Science
Key Stage 4 Framework for Learning
Year 11 2017-2018: I am Creative, Successful and Happy

Syllabus:
AQA GCSE Combined Science Trilogy
Specification 8464

Autumn 1	
Knowledge	**Physics** -National grid -Global resources -Global resources Documentary -Moja Island Energy resources -Revision & EOT -Atomic structure -Mass and atomic number -Model of the atom -Radioactive decay and nuclear fuel -Nuclear equations -Uses of Nuclear Radiation -Radioactive contamination -Half life and nuclear decay -Nuclear Fission -Revision and EOT -Permanent and induced magnetism -Electromagnetism -Motors -Flemmings left hand rule -Electric motors -Electromagnetic waves -Wave properties and uses Revision and EOT Biology Revision – revisiting the topic prior to College entry exams
Skills	Practical skills, evaluating methods, Analysing data, calculations, rearranging formulae, memorizing formulae, making predictions, applying knowledge to new scenarios, describing and explaining data from graphs, using scales and suggesting hypothesis and explanations to new ideas. These skills are embedded in all lessons and students will have multiple opportunities to apply these kills across all topics.
Assessment	*Marking Point 1(Exam)* *Marking Point 2(Exam)* *Marking Point 3(Exam)*
Cultural enrichment	Applying scientific concepts to the real world and advances in STEM. Considering social, moral, and ethical implications of scientific interventions. Sharing ideas and opinions and considering opposing viewpoints of scientific theories.
Character	 QofS – Optimism **Optimism** – students continuously track their own progress throughout the year and reflect on their learning journey. This for many can provide optimism and motivation. Sudents 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 college entry exams and as they map out their learning journey for the year.

Autumn 2

Knowledge	**Biology Revision** revisiting the topic prior to College entry exams. Students will have specific subject content revision lessons, exam technique, exam practice and walking talking mocks. Students will have access to revision quizzes on doddle. **College Entry Exams** At this point students will have covered all content for the Combined Science Specification. Students will sit 3 exams -Biology -Physics -Chemistry **Post College entry exams** Students will receive bespoke feedback on their college entry exams. They will have opportunity to dissect mark schemes and fill gaps in their knowledge to consolidate their understanding. Students will reflect on their performance and set targets for the new year.
Skills	Practical skills, evaluating methods, Analysing data, calculations, rearranging formulae, memorizing formulae, making predictions, applying knowledge to new scenarios, describing and explaining data from graphs, using scales and suggesting hypothesis and explanations to new ideas. These skills are embedded in all lessons and students will have multiple opportunities to apply these kills across all topics.
Assessment	*Marking Point 1(Exam)* *Marking Point 2(Exam)* *Marking Point 3(Exam)*
Cultural enrichment	Applying scientific concepts to the real world and advances in STEM. Considering social, moral, and ethical implications of scientific interventions. Sharing ideas and opinions and considering opposing viewpoints of scientific theories.
Character	 QofS – Empathy **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.

Spring 1

Knowledge	**Chemistry Only Unit** -Transition elements -Nanoparticles -Yield and atom economy -Concentration calculations -Amounts of substance -Titrations

	-Chemical and fuel cells **<u>Biology Only Unit</u>** -Culturing microorganisms -Monoclonal antibodies -Plant disease -The brain -The eye -Control of body temperature -Maintaining water and nitrogen balance in the body -Plant hormones -Evaluating Asexual and sexual reproduction -DNA Structure **<u>Physics Only Unit</u>** -Static charge and electric fields -Induction -Generators -Loudspeakers and microphones -Transformers -Gas pressure/particle motion Pressure in fluids -Nuclear radiation **<u>Exam focused Revision</u>** Students will have opportunity to revisit the more challenging topics from the combined science course. Students will also have specific subject content revision lessons, exam technique, exam practice and walking talking mocks. Students will have access to revision quizzes on doddle.
Skills	Practical skills, evaluating methods, Analysing data, calculations, rearranging formulae, memorizing formulae, making predictions, applying knowledge to new scenarios, describing and explaining data from graphs, using scales and suggesting hypothesis and explanations to new ideas. These skills are embedded in all lessons and students will have multiple opportunities to apply these kills across all topics.
Assessment	*Marking Point 1(Exam)* *Marking Point 2(Exam)* *Marking Point 3(Exam)*
Cultural enrichment	Applying scientific concepts to the real world and advances in STEM. Considering social, moral, and ethical implications of scientific interventions. Sharing ideas and opinions and considering opposing viewpoints of scientific theories.
Character	  QofS – Creativity & Curiosity **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 into their revision timetables. **Curiosity** – students are encouraged to learn independently through doddle, GCSE Pod and using Science revision resources.

Spring 2

Knowledge	**<u>Chemistry Only Unit</u>** -Haber process -Alkenes and alcohols -Addition polymerization -Synthetic polymers -Ion tests -Material science

	Biology Only Unit -Theory of evolution -Speciation -Understanding genetics -Decomposition -Environmental change -Trophic levels in an ecosystem -Food production **Physics Only Unit** -Nuclear fission/fusion -solar system and stars -red shift - reflection of waves -concave/convex lenses -colour/light -radiation -sound waves -waves Students will develop their knowledge, understanding and skillset in the above syllabus topics. This will be complimented with required practical experiments, Scientific skills and exam technique.
Skills	Practical skills, evaluating methods, Analysing data, calculations, rearranging formulae, memorizing formulae, making predictions, applying knowledge to new scenarios, describing and explaining data from graphs, using scales and suggesting hypothesis and explanations to new ideas. These skills are embedded in all lessons and students will have multiple opportunities to apply these kills across all topics.
Assessment	*Marking Point 1(Exam)* *Marking Point 2(Exam)* *Marking Point 3(Exam)*
Cultural enrichment	Applying scientific concepts to the real world and advances in STEM. Considering social, moral, and ethical implications of scientific interventions. Sharing ideas and opinions and considering opposing viewpoints of scientific theories.
Character	  QofS – Responsibility & Reflection **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 Doddle to look at revision topics from their own areas of weakness and assess themselves using the online quiz tests. **Reflection** – students are encouraged to reflect on every practice exam performance through the use of an exam PLC.

Summer 1

Knowledge	**Exam focused Revision** Students will have opportunity to revisit the more challenging topics from the combined science course. Students will have specific subject content revision lessons, exam technique, exam practice and walking talking mocks. Students will have access to revision quizzes on doddle. Students will consolidate their knowledge, understanding and skillset and apply it to their focused revision.
Skills	Practical skills, evaluating methods, Analysing data, calculations, rearranging formulae, memorizing formulae, making predictions, applying knowledge to new scenarios, describing and explaining data from graphs, using scales and suggesting hypothesis and explanations to new ideas. These skills are embedded in all lessons and students will have multiple opportunities to apply these kills across all topics.
Assessment	*Marking Point 1(Exam)* *Marking Point 2(Exam)*

	Marking Point 3(Exam)
Cultural enrichment	Applying scientific concepts to the real world and advances in STEM. Considering social, moral, and ethical implications of scientific interventions. Sharing ideas and opinions and considering opposing viewpoints of scientific theories.
Character	 QofS – Practice & Resiliency **Practice** – Using their exam PLC, students should identify areas of strength and weakness and use Doddle, their revision guides and the revision hub drop in to practise key skills. **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.