

1) The Faculty/Department Context and Line Management Structure:

FACULTY CONTEXT		
<i>Numbers in brackets indicate where corresponding whole school objectives are being achieved.</i>		
STAFF CODE	NAME	FACULTY RESPONSIBILITIES
ZW	Zoe Watson	Head of Science
CCA	Colin Carter	Associate Head of Science
SGA	Sarah Gardiner	Lead Practitioner Science
LD	Liza Dimitriades	KS3 Co-ordinator (part time 0.6)
SWM	Steve Meunier	KS5 Coordinator STEM Coordinator (maternity cover)
SSH	Sharon Sheppard	KS4 Assessment, Monitoring, Student Support, KS3 Science club
AA	Amna Anwar	KS4 curriculum development, STEM (on maternity leave)
PL	Pradeep Laloo	Astronomy (part time 0.4)
JA	Jessica Abbotts	i/c KS5 Biology (Year Co-ordinator 12)
SJW	Sarah Weston	Lead Teacher Chemistry
CLS	Cathie Serrao	
AH	Aseena Hidayat	(part time 0.4)
CGA	Charlene Gayle	
CMI	Constantine Michaelides	
FA	Fatima Azeez	(part time 0.6)
HA	Halima Akhoundzadeh	(part time 0.8)
GN	George Nagle	(part time 0.8)
KMO	Katherine Monaghan	(part time 0.6)
MBE	Miriam Berry	(part time 0.85)
NR	Nasreen Rauf	
NH	Neil Hardy	
YG	Yee Goh	NQT
		FTLA
AB	Alan Bender	Physics Technical Manager – KS4 Prep room
MK	Mike Katz	Chemistry Technical Manager – KS5 Prep room
PW	Peter Windle	Biology Technical Manager – KS3 Prep room
AW	Anna Woodward	KS3 and 4 Prep room Manager
VH	Veronica Hill	KS3 Prep room Manager
IC	Isabel Casades	Senior Science Technician
SSM	Smita Samapuria	Technician
JB	John Bright	Technician
ST	Shilpa Tailor	Technician
Facilities:		
The Science Faculty is well resourced with 16 specialist laboratory classrooms, each fitted with an interactive whiteboard. There are three technician preparatory rooms, one for each Key Stage. We also have dedicated sets of state-of-the-art tablet computers and class sets of data loggers. Fronter, the school's Managed Learning Environment, is used extensively by the Science Faculty in order to enhance and enrich teaching and learning. (7, 16)		

2) Curriculum Plans

SCIENCE		
Years 7 and 8 (Key Stage 3)	<p>Students follow the Science National Curriculum in Year 7 and 8 and are taught in their form groups. The Exploring Science scheme of work is used to inspire students to want to study Science subjects further. It utilises new technologies, entitled Activelearn to provide an interactive online textbook and instant feedback on homework assessments. Students are taught in discreet units that cover fundamental topics in Biology, Chemistry and Physics.</p> <p>Year 7: In the Autumn term students will cover the following topics, but not necessarily in this order: Cells tissues and organs (Bi), Muscles and bones (Bi), Mixtures and separation (Ch), Acids and alkalis (Ch), Forces (Ph)</p> <p>In the Spring term students will cover the following topics: Sound (Ph), Sexual reproduction in animals (Bi), Ecosystems (Bi), The particle model (Ch), Atoms, elements and compounds (Ch)</p> <p>In the Summer term students will cover the following topics and also be given a revision programme culminating in an end of year test: Energy (Ph), Current electricity (Ph), Food and Nutrition (Bi), Plants and their reproduction (Bi), Combustion (Ch), The periodic table (Ch) (1, 2, 3, 6)</p> <p>Year 8: In the Autumn term students will cover the following topics: Light (Ph), Energy transfers (Ph), Unicellular organisms (Bi), Breathing and respiration (Bi), Rocks (Ch), Metals and their uses (Ch)</p> <p>In the Spring term students will cover the following topics: Fluids (Ph), Earth and Space (Ph), Genetics and evolution (Bi), Making materials (Ch), Forces and motion (Ph)</p> <p>In the Summer term students will cover the following topics and also be given a revision programme culminating in an end of year test: Growing our food (Bi), Electricity and magnetism (Ph), Reactivity (Ch)</p> <p>Throughout both years, students will have the opportunity to sit regular assessments to inform progress and also to receive in depth feedback which will be reflected upon in class. All these assessments will be written in their assessment book. (1, 2, 3, 6)</p>	3 x 50 minute lessons per week
Year 9 and 10 (Key Stage 4)	<p>Year 9 and 10 students will follow the 2016 suite of Edexcel Science GCSEs: Combined Science GCSE (9-1) 1SC0</p> <p>Year 9 Topics covered in Year 9 will include: Biological Key Concepts (CB1), Cells and Control (CB2), Genetics (CB3), Natural selection and Genetic Modification (CB4), Health and Disease (CB5), States of Matter (CC1), Atomic Structure (CC3), The Periodic Table (CC4), Bonding (CC5), Types of Substance (CC7), Acids and Alkalis (Ch8), Calculations involving masses (CC9), Forces and Motion (CP1&2), Waves (CP4), Light and Electromagnetic Spectrum (CP5), Radioactivity (CP6)</p> <p>Year 10 All students will cover the Combined Science GCSE content until the Summer half term. Content covered in Year 9 will be revisited and assessed, alongside Year 10 content, in an internal exam.</p> <p>Combined Science will continue to be covered until the end of Summer term 2017. Topics covered in year 10 will include plant structures and functions (CB6), Animal coordination (CB7), Exchange and transport in animals (CB8), Ecosystems (CB9), Rates of Reaction (CC14), Energy Changes (CC15), Electrolytic processes (CC10), Reversible reactions and equilibria (CC12), Fuels (CC16), Earth and Atmospheric chemistry (CC17), Electricity and circuits (CP7),</p>	6 x50 minute lessons per week

	<p>Forces (CP8), Magnetism and the motor effect (CP10), Electromagnetic Induction (CP11), Particles and density (CP12), Forces and matter (CP13)</p> <p>The results from internal testing will be used to set students in Y11 into 7 sets. In the top sets, students will study the Edexcel Separate Science content to achieve three GCSEs in Science – Biology, Chemistry and Physics GCSE.</p> <p>Throughout both years, students will have the opportunity to sit regular assessments to inform progress and also to receive in depth feedback which will be reflected upon in class. All these assessments will be written in their assessment book. (1, 2, 3, 6)</p>	
<p>Year 11 (Key stage 4)</p>	<p>For the second time Year 11 students will follow the 2016 suite of Edexcel Science GCSEs:</p> <p>Either: Combined Science GCSE (9-1) 1SCO (leading to 2 GCSE qualifications) OR: Biology GCSE (9-1) 1BIO Chemistry GCSE (9-1) 1CHO Physics GCSE (9-1) 1PHO</p> <p>Year 11 A large number of students will cover the Single Science GCSE content throughout year 11 along with revision of the content covered in Years 9 and 10. Topics covered by these students will extend and develop topics already studied in years 9 and 10. Additional topics studied will include fertilizers and biological control, virus life cycles, chemical cells and fuel cells, transition metals and alloys, braking distance and energy and astronomy.</p> <p>The remaining students will be given preparation for the linear Combined Science GCSE in skills based lessons which recap the content and practical skills studied in Years 9 and 10. The skills will include practical and experimental work in preparation for this being examined in written papers, rather than using coursework. Students will receive two Biology, two Chemistry and two Physics lessons delivered in discrete units. These will include practical and long answer assessments as well as the core practicals designated by the exam board. (1, 2, 3, 6)</p>	<p>6 x50 minute lessons per week</p>
<p>Year 12 and 13 (Key Stage 5)</p>	<p>For A Level Sciences government led changes mean that there is no longer a practical coursework component. In all three Science A levels students will complete multiple practical tasks during lessons. Their understanding of these will be assessed in their external exams. In addition, on completion of the full A level, students will receive a practical endorsement separate to their overall awarded grade.</p> <p>In Year 12 all students will be able to sit the AS examination if they are intending to drop the subject at the end of Year 12. The majority of students will only sit external exams at the end of their two-year linear course.</p> <p>A level Biology: OCR A Level Biology HO20, H420</p> <p>In 2016-17 all students will be following the new OCR specification. This covers the following topics:</p> <ul style="list-style-type: none"> • Module 1 – Development of practical skills in biology • Module 2 – Foundations in biology • Module 3 – Exchange and transport • Module 4 – Biodiversity, evolution and disease • Module 5 – Communication, homeostasis and energy • Module 6 – Genetics, evolution and ecosystems <p>This will be assessed in written papers:</p> <p>Biological processes, 100 marks, 2 hour 15 minutes</p>	<p>6 x 50 minute lessons per week</p>

	<p>Biological diversity, 100 marks, 2 hour 15 minutes</p> <p>Unified biology, 70 marks 1 hour 30 minutes</p> <p>A level Chemistry: Edexcel A Level Chemistry 9CHO</p> <p>In 2016-17 all students will be studying the new Edexcel specification. This covers the topics in Organic, Inorganic and Physical Chemistry including Atomic Structure and Bonding, Quantitative Chemistry, Groups in the Periodic Table, Kinetics, Energetics, Equilibria and the study of a variety of homologous series in Organic Chemistry.</p> <p>This will be assessed in written papers:</p> <p>Advanced Inorganic and Physical Chemistry, 90 marks, 1 hour 45 minutes</p> <p>Advanced Organic and Physical Chemistry, 90 marks, 1 hour 45 minutes</p> <p>General and Practical Principles in Chemistry, 120 marks 2 hour 30 minutes</p> <p>A level Physics: Edexcel Alevel Physics 9PH0</p> <p>In 2016-17 all students will be studying the new Edexcel specification. This covers the following topics including Working as a Physicist, Mechanics, Electric Circuits, Electric and Magnetic Fields, Nuclear and Particle Physics, Materials, Waves and Particle Nature of Light, Thermodynamics, Space, Nuclear Radiation, Gravitational Fields and Oscillations</p> <p>Paper 1: Advanced Physics I, 90 marks, 1 hour 45 minutes</p> <p>Paper 2: Advanced Physics II, 90 marks, 1 hour 45 minutes</p> <p>Paper 3: General and Practical Principles in Physics, 120 marks, 2 hours 30 minutes</p> <p>(1, 2, 3, 6, 11)</p>	
--	---	--

EXTRA-CURRICULAR PROVISION IN THE SCIENCE FACULTY

Two Science clubs are run weekly on a Wednesday, one for students in Years 7 and one for students in Year 8. These are open to any student who wants to come along and include fun activities such as making colloids, dissecting eyeballs and building motors.

In Year 9, students who achieve a level 7 in their end of Key Stage3 test can join the Astronomy GCSE class at the start of Year 9. This two-year course is taught after school one day a week and on several Saturdays. At the end of Year 10 students sit the GCSE Astronomy exam.

The Science Faculty, along with Technology and Mathematics, offers a STEM club where students from Year 9 work together on STEM projects, there has also been a very popular series of guest lecturers speaking on STEM careers. KS5 students are also given many opportunities to attend lectures and visit scientific research centres such as CERN and Culham Centre for Fusion energy. Details of all extra-curricular, revision and intervention activities are regularly updated in Fronter and via letters home. **(19)**