Curriculum Guide – Science

Year 7 Science

Course Description	Course Content	Assessment
In KS3 we teach an innovative and practically based curriculum. With the changes to terminally examined GCSEs, their increasing focus on the application of ideas and their amplified requirements for maths, literacy and communication, we have integrated these skills into the whole of our KS3 course. This means that, from the start of Year 7, students will steadily grow in confidence when using mathematical skills, thinking scientifically and communicating their ideas clearly and logically. 'Working Scientifically' is a core part of our curriculum and covers both the skills needed for thinking about scientific problems and the skills needed to process and analyse the data (including mathematical skills), allowing them to practise the same skills in both Science and Maths and to appreciate the range of scientific contexts in which mathematical understanding can be applied.	The units that year 7 will cover include: **Biology Units:** • Cells, Tissues, organs and systems • Sexual reproduction in animals • Muscles and bones Ecosystems **Chemistry Units:** • Mixtures and separation • The particle model • Atoms, elements and compounds • Acids and Alkalis **Physics Units:** • Energy Current • Current Electricity • Forces • Sound	Pupils will be assessed on each unit within Biology, Chemistry and Physics in order to gain an overview of their skills and to quickly address any misconceptions. There is continuous assessment throughout the year via student feedback, questioning, mini assessments and end of unit assessments. We have recently introduced end of year exams for Year 7 classes in order to mirror the GCSE exams that pupils will experience in KS4.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
Key Stage 3 Science Club. Homework Takeaway projects encourage pupils to take their learning and Scientific ideas to a different level, allowing them to use creative ideas to extend and consolidate their learning.	Literacy & numeracy are important and integral aspects of Science and we encourage students to identify and develop these in their work.	http://www.docbrown.info/ http://www.scibermonkey.org/ http://www.bbc.co.uk/bitesize/ks3/ www.doddlelearn.co.uk

Year 8 Science

Course Description	Course Content	Assessment
In KS3 we teach an innovative and practically based curriculum. With the changes to terminally examined GCSEs, their increasing focus on the application of ideas and their amplified requirements for maths, literacy and communication, we have integrated these skills into the whole of our KS3 course. This means that students will steadily grow in confidence when using mathematical skills, thinking scientifically and communicating their ideas clearly and logically. 'Working Scientifically' is a core part of our curriculum and covers both the skills needed for thinking about scientific problems and the skills needed to process and analyse the data (including mathematical skills), allowing them to practise the same skills in both Science and Maths and to appreciate the range of scientific contexts in which mathematical understanding can be applied.	The units that Year 8 will cover include: **Biology Units:** • Food and Nutrition • Plants and their Reproduction • Breathing and Respiration • Unicellular Organisms **Chemistry Units:** • Combustion • The Periodic Table • Metals and their uses • Rocks **Physics Units:** • Fluids • Light • Energy Transfers • Earth and Space	Pupils will be assessed on each unit within Biology, Chemistry and Physics in order to gain an overview of their skills and to quickly address any misconceptions. There is continuous assessment throughout the year via student feedback, questioning, mini assessments and end of unit assessments. We have recently introduced end of year exams for Year 8 classes in order to mirror the GCSE exams that pupils will experience in KS4.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
Key Stage 3 Science Club. Homework Takeaway projects encourage pupils to take their learning and Scientific ideas to a different level, allowing them to use creative ideas to extend and consolidate their learning.	Literacy & numeracy are important and integral aspects of Science and we encourage students to identify and develop these in their work.	http://www.docbrown.info/ http://www.scibermonkey.org/ http://www.bbc.co.uk/bitesize/ks3/ www.doddlelearn.co.uk

Year 9 GCSE Science (9-1)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Science 9-1 Course. This course will enable students to: • Develop scientific knowledge and understanding through the different disciplines of Biology, Chemistry and Physics • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Autumn Term- Biology Topics 1-2** • Cells and Microscopes • Enzyme Activity • Movement of molecules • The Nervous System • Genetics **Spring Term- Chemistry Topics 1-7** • Separating mixtures • Atomic Structure/The Periodic Table • Ionic/Covalent/Metallic Bonding and Structures **Summer Term- Physics Topics 1-3** • Motion and Velocity • Motion and Forces • Conservation of Energy	The student's grade is 100% exam based, and to help prepare them for this the students will be assessed throughout the year by completing tests at the end of each topic (x2 Biology, x2 Chemistry, x3 Physics) to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Core Practicals will be completed throughout the course that will be examined on in the student final GCSE exams.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in STEM activities	As the new GCSE Science course is linear, students will complete all exams at the end of Year 11. Students will take 6 exams- Biology Paper 1, Biology Paper 2, Chemistry Paper 1, Chemistry Paper 2, Physics Paper 1 and Physics Paper 2 resulting in 2 GCSE grades. Each exam will be worth 16.67% of their GCSE mark, out of 60 marks and will last 1 hour and 10 minutes.The exams will be a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions.	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2019. Students will be entered for either Higher tier (4-9) or Standard tier (1-5).	

Year 10 GCSE Combined Science (9-1)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Science 9-1 Course. This course will enable students to: • Develop scientific knowledge and understanding through the different disciplines of Biology, Chemistry and Physics • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Biology** • Key Concepts in Biology • Cells and Control • Genetics • Natural Selection and Genetic Modification • Health, Disease and the Development of Medicines **Chemistry** • Sates of Matter/Separating Substances • Structure and Bonding • Types of Substances • Acids **Physics** • Motion/Motion and Forces • Conservation of Energy • Waves and the Electromagnetic Spectrum • Radioactivity	The student's grade is 100% exam based, and to help prepare them for this the students will be assessed throughout the year by completing tests at the end of each topic (x5 Biology, x6 Chemistry, x6 Physic and of unit exams on Biology, Chemistry and Physics) to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be entered for externally marked Biology, Chemistry and Physics mock exams in May, following preparation of revision classes and walking-talking mocks. Core Practicals will be completed throughout the course that will be examined on in the student final GCSE exams.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	As the new GCSE Science course is linear, students will complete all exams at the end of Year 11. Students will take 6 exams- Biology Paper 1, Biology Paper 2, Chemistry Paper 1, Chemistry Paper 2, Physics Paper 1 and Physics Paper 2, resulting in 2 GCSE grades. Each exam will be worth 16.67% of their GCSE mark, out of 60 marks and will last 1 hour and 10 minutes. The exams will be a mixture of different question	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2018. Students will be entered for either Higher tier (4-9) or Standard tier (1-5).	

Year 10 GCSE Biology (9-1)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Biology 9-1 Course. This course will enable students to: • Develop scientific knowledge and understanding through Biology as a separate discipline • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Biology (Year 10 Content for Paper 1)** • Key Concepts in Biology • Cells and Control • Genetics • Natural Selection and Genetic Modification • Health, Disease and the Development of Medicines **Biology (Year 11 Content for Paper 2)** • Key Concepts in Biology • Plant Structure and their Functions • Animal Co-ordination, Control and Homeostasis • Exchange and Transport in Animals • Ecosystems and Material Cycles	The student's grade is 100% exam based, and to help prepare them for this the students will be assessed throughout the year by completing tests at the end of each topic (x5 Biology) followed by an end of Biology exam to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be entered for externally marked Biology mock exams in May, following preparation of revision classes and walking-talking mocks. Core Practicals will be completed throughout the course that will be examined on in the student final GCSE exams.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	As the new GCSE Biology course is linear, students will complete all exams at the end of Year 11. Students will take 2 exams as part of their Biology qualification- Biology Paper 1 and Biology Paper 2 for GCSE Biology. Each exam will be worth 50% of their GCSE Biology grade, out of 100 marks and will last 1 hour and 45 minutes. The exams will be a mixture of different question styles, including multiple-choice questions,	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	short answer questions, calculations and extended open-response questions. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2018. Students will be entered for either Higher tier (4-9) or Standard tier (1-5).	

Year 10 GCSE Chemistry (9-1)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Chemistry 9-1 Course. This course will enable students to: • Develop scientific knowledge and understanding through Chemistry as a separate discipline • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Chemistry (Year 10 Content for Paper 1)** • Key Concepts in Chemistry • States of Matter and Mixtures • Chemical Changes • Extracting Metals and Equilibria • Separate Chemistry 1 • **Chemistry (Year 11 Content for Paper 2)** • Key Concepts in Chemistry • Groups in the Periodic Table • Rates of Reaction and Energy Changes • Fuels and Earth Science • Separate Chemistry 2	The student's grade is 100% exam based, and to help prepare them for this the students will be assessed throughout the year by completing tests at the end of each topic (x6 Chemistry) followed by an end of Chemistry unit exam to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be entered for externally marked Chemistry mock exams in May, following preparation of revision classes and walking-talking mocks. Core Practicals will be completed throughout the course that will be examined on in the student final GCSE exams.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	As the new GCSE Chemistry course is linear, students will complete all exams at the end of Year 11. Students will take 2 exams as part of their Chemistry qualification- Chemistry Paper 1 and Chemistry Paper 2 for GCSE Chemistry. Each exam will be worth 50% of their GCSE Chemistry grade, out of 100 marks and will last 1 hour and 45 minutes. The exams will be a mixture of different question styles, including multiple-choice	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	questions, short answer questions, calculations and extended open-response questions. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2018. Students will be entered for either Higher tier (4-9) or Standard tier (1-5).	

Year 10 GCSE Physics (9-1)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Physics 9-1 Course. This course will enable students to: • Develop scientific knowledge and understanding through Physics as a separate discipline • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Physics (Year 10 Content for Paper 1)** • Key Concepts in Physics • Motion and Forces • Conservation of Energy • Waves • Light and the Electromagnetic Spectrum • Radioactivity • Astronomy **Physics (Year 11 Content for Paper 2)** • Key Concepts in Physics • Energy- Forces doing Work • Forces and their Effects • Electricity and Circuits • Static Electricity • Magnetism, Motor Effect and Electromagnetic Induction • Particle Model and Forces and Matter	The student's grade is 100% exam based, and to help prepare them for this the students will be assessed throughout the year by completing tests at the end of each topic (x6 Physics) followed by an end of Physics unit exam to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be entered for externally marked Physics mock exams in May, following preparation of revision classes and walking-talking mocks. Core Practicals will be completed throughout the course that will be examined on in the student final GCSE exams.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	As the new GCSE Physics course is linear, students will complete all exams at the end of Year 11. Students will take 2 exams as part of their Physics qualification- Physics Paper 1 and Physics Paper 2 for GCSE Physics. Each exam will be worth 50% of their GCSE Physics grade, out of 100 marks and will last 1 hour and 45 minutes. The exams will be a mixture of different question styles, including multiple-choice questions,	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	short answer questions, calculations and extended open-response questions. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2018. Students will be entered for either Higher tier (4-9) or Standard tier (1-5).	

Year 11 Additional Science (A*-G)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Additional Science Course. This course will enable students to: • Develop scientific knowledge and understanding through the different disciplines of Biology, Chemistry and Physics • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Biology** • The Components of Life • Organisms and Energy • Common Systems **Chemistry** • Atomic Structure and the Periodic Table/Groups in the Periodic Table • Ionic and Compounds and Analysis • Covalent Compounds and Separation Techniques • Chemical Reactions • Quantitative Chemistry **Physics** • Static and Current Electricity • Controlling and Using Electric Current • Motion and Forces • Momentum, Energy, Work and Power • Nuclear Fission and Fusion • Radioactivity	The student's grade is 75% exam based, and to help prepare them for this the students will be assessed throughout the year by completing mid-topic and end of unit tests for Biology, Chemistry and Physics to monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be completing mock exams 3 times in the year on Biology, Chemistry and Physics, following preparation of revision classes and walking-talking mocks. Students will complete a Controlled Assessment that counts for 25% of their mark.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	Students will complete 3 exams at the end of Year 11- Biology Unit 2, Chemistry Unit 2 and Physics Unit 2. Each exam will be worth 25% of their GCSE mark, out of 60 marks and will last 1 hour. The exams will be a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Students will complete a Controlled Assessment that	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	counts for 25% of their mark. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2017. Students will be entered for either Higher tier (A*-E) orFoundation tier (G-C).	

Year 11 Biology (A*-G)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Biology Course. This course will enable students to: • Develop scientific knowledge and understanding through the discipline of Biology. • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Biology Unit 1** • Classification, Variation and Inheritance • Responses to a Changing Environment • Problems of an Solutions to a Changing Environment **Biology Unit 2** • The Components of Life • Organisms and Energy • Common Systems **Biology Unit 2** • Control Systems • Behaviour • Biotechnology	The student's grade is 75% exam based, and to help prepare them for this the students will be assessed throughout the year by completing mid-topic and end of unit tests for Biology monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be completing mock exams 3 times in the year on Biology following preparation of revision classes and walking-talking mocks. Students will complete a Controlled Assessment that counts for 25% of their Biology mark.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	Students will complete 3 exams at the end of Year 11- Biology Unit 1, Biology Unit 2 and Biology Unit 3. Each exam will be worth 25% of their GCSE Biology mark, out of 60 marks and will last 1 hour. The exams will be a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Students will complete a Biology Controlled Assessment that counts for 25% of their mark.	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2017. Students will be entered for either Higher tier (A*-E) or Foundation tier (G-C).	

Year 11 Chemistry (A*-G)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Chemistry course. This course will enable students to: • Develop scientific knowledge and understanding through the discipline of Chemistry. • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Chemistry Unit 1** • The Earth's Sea and Atmosphere • Materials from the Earth • Acids and Fuels • Obtaining and Using Metals **Chemistry Unit 2** • Atomic Structure and the Periodic Table/Groups in the Periodic Table • Ionic/Covalent Compounds, Analysis and Separation Techniques • Chemical Reactions • Quantitative Chemistry **Chemistry Unit 3** • Qualitative and Quantitative Analysis • Electrolytic Processes • Gases, Equilibria and Ammonia • Organic Chemistry	The student's grade is 75% exam based, and to help prepare them for this the students will be assessed throughout the year by completing mid-topic and end of unit tests for Chemistry monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be completing mock exams 3 times in the year on Chemistry following preparation of revision classes and walking-talking mocks. Students will complete a Controlled Assessment that counts for 25% of their Chemistry mark.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	Students will complete 3 exams at the end of Year 11- Chemistry Unit 1, Chemistry Unit 2 and Chemistry Unit 3. Each exam will be worth 25% of their GCSE Chemistry mark, out of 60 marks and will last 1 hour. The exams will be a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Students will complete a Chemistry Controlled Assessment that counts for	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	25% of their mark. Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2017. Students will be entered for either Higher tier (A*-E) or Foundation tier (G-C).	

Year 11 Physics (A*-G)

Course Description	Course Content	Assessment
Students will be following the Edexcel GCSE Chemistry course. This course will enable students to: • Develop scientific knowledge and understanding through the discipline of Physics • Develop and learn to apply observational, practical, modelling, enquiry and problem-solving skills in the lab and in the field • Develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions • Develop understanding of the nature, processes and methods of science, through different types of scientific enquiries that help them to answer scientific questions about the world around them	**Physics Unit 1** • The Electromagnetic Spectrum • Waves and the Universe • Generating Electricity • Energy and the Future **Physics Unit 2** • Static and Current Electricity • Controlling and Using Electric Current • Motion and Forces • Momentum, Energy, Work and Power • Nuclear Fission and Fusion and Radioactivity **Physics Unit 3** • Radiation in Treatment and Medicine/X-rays and ECGs • Using and Production of Radioactive Sources • Motion of Particles and Kinetic Theory and Gases	The student's grade is 75% exam based, and to help prepare them for this the students will be assessed throughout the year by completing mid-topic and end of unit tests for Physics monitor their progress. Students will get feedback after each test and spend time focusing on areas of the test that need re-teaching and developing further to allow students to reach or exceed their target. Testing will allow students to be assessed against each exam board objective and feedback will be based on areas of weakness, ensuring feedback is effective and specific. Students will be completing mock exams 3 times in the year on Physics following preparation of revision classes and walking-talking mocks. Students will complete a Controlled Assessment that counts for 25% of their Physics mark.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
All students will be encouraged to: • Participate in after school Science revision and intervention classes	Students will complete 3 exams at the end of Year 11- Physics Unit 1, Physics Unit 2 and Physics Unit 3. Each exam will be worth 25% of their GCSE Physics mark, out of 60 marks and will last 1 hour. The exams will be a mixture of different question styles, including multiple-choice questions, short answer questions, calculations and extended open-response questions. Students will complete a Physics Controlled Assessment that counts for 25% of their mark.	**Edexcel Specification** https://qualifications.pearson.com/en/qualifications/edexcel-gcses/sciences-2016.html **BBC Bitesize for GCSE Science** http://www.bbc.co.uk/education/subjects/zrkw2hv www.doddlelearn.co.uk

	Students will be assessed on 3 Assessment Objectives with each paper approximately 40% AO1 (demonstrate knowledge and understanding of scientific ideas and procedures), 40% AO2 (apply knowledge and understanding of scientific ideas and procedures) and 20% AO3 (analyse information to interpret, evaluate, make judgements, draw conclusions and develop and improve experimental procedures). Examinations: May/June 2017. Students will be entered for either Higher tier (A*-E) or Foundation tier (G-C).	

Year 12 Science

Year 12 is the start of your science journey through sixth form. At SWB we offer GCE A levels in Biology, Chemistry and Physics and also BTEC Applied Science Extended Certificate. At Key Stage 5, the curriculum builds on knowledge and understanding gained at GCSE, using it as a stepping stone to uncover the inner workings of the natural world.

Entry Requirements:

A-Level – 5 GCSE's 'B' or better including Sciences, Maths and English. Individually cases may be looked at if Separate Sciences are studied.

BTEC – 5 GCSE's 'C' or better including Sciences, Maths and English. Individually cases may be looked at if Separate Sciences are studied.

Course Description	Course Content	Assessment
AS Year 1 Biology (AQA) **AS Year 1 Chemistry (AQA)** **AS Year 1 Physics (AQA)** **BTEC Extended Certificate in Applied Science Level 3 (Edexcel)**	Topics include: biological molecules, investigative techniques, an introduction to biochemistry, transport of substances, immunology, classification and courtship behaviour, genes, bacteria and diversity. Topics include: energetic and kinetics, investigative techniques, organic chemistry and compounds, inorganic chemistry and trends in the Periodic Table. Topics include fundamental particles and their interactions, investigative techniques, materials, electrical circuits, the nature of waves and an introduction to mechanics. This course consists of both coursework and an examinable component. Content is drawn from biology, chemistry and physics and there is particular emphasis on laboratory skills in this first year.	Each AS Year 1 course is assessed by two examinations at the end of the year. There are a variety of question types including multiple choice, structured answer and long answer. All topics on the course are covered. Throughout each course there are six required practical skills investigations that are internally assessed by staff. Coursework is teacher assessed and is worth 42% of the qualification. In Year 12 this component of the course is based on laboratory skills. The externally assessed component is worth 58% of the qualification and examines the topics taught from biology, chemistry and physics.
Extra-Curricular Opportunities	**Important Information**	**Useful Websites**
Day trips at local universities are arranged for relevant parts of courses together with trips to conferences such as A Level Science Live which are on throughout the year. A journal club is run at the school once fortnightly.		http://university.which.co.uk/advice/a-level-choices/six-things-you-need-to-know-before-making-your-a-level-choices http://filestore.aqa.org.uk/subjects/AQA-2410-W-SG.PDF http://filestore.aqa.org.uk/subjects/AQA-2420-W-SG.PDF https://successatschool.org/advicedetails/224/Why-Study-Physics%3F http://qualifications.pearson.com/en/qualifications/btec-nationals/applied-science-2016.html

Year 13 Science

Year 13 continues to build on knowledge and understanding gained throughout Year 12.

Course Description	Course Content	Assessment
A Level Year 2 Biology **A Level Year 2 Chemistry** **A level Year 2 Physics** **BTEC Extended Certificate in Applied Science Level 3**	Topics include: simple and complex (human) body systems, photosynthesis, respiration, environmental biology and a more advanced study of genetics. Topics include: further energetic and kinetics, investigative techniques in organic and inorganic chemistry and compounds, thermodynamics, synthesis and analysis. Topics include further mechanics, gravitational and magnetic fields, thermal physics and nuclear physics. There is an optional module in which students can choose one of the following topics to study in greater depth: turning points in physics, astrophysics, medical physics and engineering physics. This course consists of both coursework and an examinable component. Content is drawn from biology, chemistry and physics and a consolidation of students' laboratory skills.	Each A Level Year 2 course is assessed by three examinations at the end of the year. There are a variety of question types including multiple choice, structured answer and long answer. All topics from the Year 1 and Year 2 course are covered. Throughout each course there are again, six required practical skills investigations that are internally assessed by staff. Coursework is teacher assessed and is worth 42% of the qualification. In Year 13 this component of the course is based on the biology, chemistry and physics modules that have been taught. There is an optional module where students can choose a particular topic to study in more depth. The externally assessed component consists of one examination paper which examines laboratory skills.
Extra-Curricular Opportunities	**Important Information**	**Use Websites**
Day trips at local universities are arranged for relevant parts of the course, together with trips to conferences such as A Level Science Live which are on throughout the year.		http://filestore.aqa.org.uk/subjects/AQA-2410-W-SG.PDF http://filestore.aqa.org.uk/subjects/AQA-2420-W-SG.PDF https://successatschool.org/advicedetails/224/Why-Study-Physics%3F http://university.which.co.uk/advice/a-level-choices/what-a-levels-do-you-need-for-the-degree-you-want-to-study http://qualifications.pearson.com/en/qualifications/btec-nationals/applied-science-2016.html