Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Maths skill transition • Unit conversion • Powers & Indices • Standard form & Significant figures • Formulae rearrangement • Percentage changes • Uncertainties • Rates	6	https://filestore.aqa.org.uk/resources/biology/specifications/AQA-7401-7402-SP-2015.PDF Pages 11 – 40
Section 1: Biological molecules • Monomers & Polymers • Monosaccharides, disaccharides, polysaccharides • Lipids • Amino acids & Proteins • Enzymes & Function	30	
Section 2: Cells • Microscopes • Cell structure • Specialisation & Organisation • Cell cycle & Mitotic index • Transport across cell membranes • Absorption • Cell recognition and the immune system • Vaccination • HIV	42	
Section 3: Organisms exchange substances with their environment • Exchange in single-celled organisms, fish, insects, leaves • Exchange of gases in lungs • Enzymes and Digestion	24	

• Absorption of products • Haemoglobin • Oxygen dissociation • Cardiac cycle • Mass transport in plants		
Section 4: Genetic information, variation and relationships between organisms • Genetic information • Protein synthesis • Mutations • Meiosis • Genetic variation & diversity • Natural selection • Species taxonomy • Investigating diversity	42	
Section 5: Energy transfer in and between organisms • Respiration • Photosynthesis • Plant pigments • Food chains • Energy transfer • Primary production • Nutrient cycles • Fertilisers • Environmental issues	48	

Biology Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13

Introduction to course and expectations	**Maths skills transition**	**Biological molecules:** Polysaccharides, lipids, proteins, enzymes	**Cells:** Microscopes, cell structure, specialisation & organisation, mitosis, cell cycle
Introduction to course and expectations	**Maths skills transition**	**Biological molecules:** Nucleic acids, DNA replication, ATP, water	**Cells:** Immunity, vaccination, HIV

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
			Organisms exchange substances with their environment: Exchange in single-celled organisms, fish, insects, Exchange of gases in lungs, enzymes & digestion, absorption of products					**Genetic information, variation and relationships between organisms:** Genetic information, protein synthesis				
			Organisms exchange substances with their environment: Haemoglobin, oxygen dissociation, cardiac cycle, mass transport in plants					**Genetic information, variation and relationships between organisms:** Species taxonomy, diversity index, human activity, investigating diversity				

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
		Energy transfer in and between organisms: Respiration, food chains, primary production, nutrient cycles, fertilisers, environmental issues										
		Energy transfer in and between organisms: Photosynthesis, food chains, primary production, nutrient cycles, fertilisers, environmental issues										

Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Section 5: Energy transfer in and between organisms review • Respiration • Photosynthesis • Plant pigments • Food chains • Energy transfer • Primary production • Nutrient cycles • Fertilisers • Environmental issues	6	https://filestore.aqa.org.uk/resources/biology/specifications/AQA-7401-7402-SP-2015.PDF Pages 41-55
Section 6: Organisms respond to changes in their environment • Survival and response • Plant growth factors • Reflex arc • Heart rate • Homeostasis • Glucoregulation • Diabetes • Osmoregulation • Nervous coordination • Impulses • Skeletal muscle contraction	36	
Section 7: Genetics, populations, evolution and ecosystems • Inheritance • Co-dominance • Linkages • Epistasis	36	

• Population genetics • Hardy Weinberg • Variation in phenotype • Natural selection • Evolution • Speciation • Ecosystems • Investigating populations • Succession • Conservation		
Section 8: The control of gene expression • Control of gene expression • Mutations • Stem cells • Regulation of transcription & translation • Cancer • Genome projects • Recombinant DNA technology • In vivo gene technology • In vitro gene technology • Fingerprinting	48	

Biology Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
	Energy transfer in and between organisms: Respiration, food chains, primary production, nutrient		**Organisms respond to changes in their environment:** Survival and response, plant growth factors, reflex arc, heart rate, nervous coordination, impulses, skeletal muscle contraction						**Genetics, populations, evolution and ecosystems:** Inheritance, codominance, linkage, epistasis, chi-squared test, Hardy Weinberg, phenotype variation, natural selection, evolution, speciation			

	cycles, fertilisers, environmental issues		
	Energy transfer in and between organisms: Photosynthesis, food chains, primary production, nutrient cycles, fertilisers, environmental issues	**Organisms respond to changes in their environment:** Homeostasis, Glucoregulation, diabetes, osmoregulation	**Genetics, populations, evolution and ecosystems:** Inheritance, codominance, linkage, epistasis, chi-squared test, investigating populations, succession, conservation

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
				The control of gene expression: Control of gene expression, mutation, stem cells, regulation of transcription & translation, cancer, genome projects								
				The control of gene expression: Recombinant DNA technology, in vivo gene technology, in vitro gene technology, fingerprinting								

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
Exam preparation												
Exam preparation												

George Stephenson High School Secondary CHEMISTRY A level GCE Scheme of Work Year 12 - DRAFT

Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Physical Chemistry Atomic structure Bonding Amount of substances Periodicity Group 2	50	https://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-7404-7405-SP-2015.PDF AS content pages Physical: pages 11-24 Inorganic: pages 34-36 Organic: pages 45-53
Organic Chemistry Nomenclature Alkanes Alkenes Alcohols Organic Analysis	75	
Inorganic Chemistry Reacting masses Energetics Equilibrium Redox Halogens	75	

Chemistry Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Atomic structure		Collision theory									nomenclature	
Bonding		Amount of sub									reacting masses	

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	Alkanes/cracking						Alkenes			Alcohols		
	Enthalpy				Equilibrium		Redox			Halogens		

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
Periodicity						Acids and Bases						
Group 2						Amines/proteins and DNA						

George Stephenson High School Secondary CHEMISTRY A level GCE Scheme of Work Year 13

Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Physical Thermodynamics Rate Equation and Kc Electrode potentials Acids, bases and pH	75	https://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-7404-7405-SP-2015.PDF A2 content pages Physical: page 25-33 Inorganic: page 38-44 Organic: page 54-65
Organic Optical isomerism Aldehydes and Ketones Carboxylic acids Aromatic Chemistry Amines Polymers Amino acids, protein and DNA NMRS Chromatography	75	
Inorganic Period 3 Transition metals	50	

Reactions of ions in aq solutions		

Chemistry Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Acids/ Bases		Titration				Born Haber				Electro potentials		
Amines/proteins/DNA		Aldehydes and Ketones				Carboxylic acids				Reaction Rates		

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	MOCKS		Transition metals			isomerisation				transition metals titrations		
	MOCKS		Aromatics			Polymers			NMR		Chromatography	

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
Periodicity			Revision									
Organic Synthesis			Revision									

Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Module 1: Development of practical skills in physics • Practical skills assessed in a written examination • Practical skills assessed in the practical endorsement	35	https://www.ocr.org.uk/Images/171726-specification-accredited-a-level-gce-physics-a-h556.pdf Pages 8 - 30
Module 2: Foundations in physics • Physical quantities and units • Making measurements and analysing data • Nature of quantities	15	
Module 3: Forces and motion • Motion • Forces in action • Work, energy and power • Materials • Newton's laws of motion and momentum	75	
Module 4: Electrons, waves and photons • Charge and current • Energy, power and resistance • Electrical circuits • Waves • Quantum physics	75	

Physics Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
		Motion Forces in action						Work, energy and power				
		Charge and current								Energy, power and resistance		

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	Materials											
	Electrical circuits						Waves					

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
Newton’s laws of motion and momentum						Circular motion						
Quantum physics						Capacitors						

Unit	Lessons	Key Progression Indicators Knowledge, Understanding and Skills
Module 1: Development of practical skills in physics • Practical skills assessed in a written examination • Practical skills assessed in the practical endorsement	50	https://www.ocr.org.uk/Images/171726-specification-accredited-a-level-gce-physics-a-h556.pdf Pages 31 - 50
Module 5: Newtonian world and astrophysics • Thermal physics • Circular motion • Oscillations • Gravitational fields • Astrophysics and cosmology	75	
Module 6: Particles and medical physics • Capacitors • Electric fields • Electromagnetism • Nuclear and particle physics • Medical imaging	75	

Physics Calendar

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
		Oscillations Thermal physics										
		Electric fields				Electromagnetism						

Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	Gravitational fields					Medical imaging						
	Nuclear and particle physics					Astrophysics and cosmology						

Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	Week 39
Revision for Examinations												
Revision for Examinations												