



The Ridgeway School & Sixth Form College

...Inspiring Learners For Their Future

'Our shared vision is that our students, colleagues and families will be part of a **FAIR** community.'

We will support our school **Family** to **Achieve** their potential, and **Inspire** students to **Reach** the very best destinations.'



Science

Curriculum Overview

RESPECT | HONESTY | ENDEAVOUR | CREATIVITY | COMMUNITY

Year 7 Science Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 7	Chemistry- States of Matter	Chemistry- States of Matter	Physics- Forces-	Chemistry- The periodic table-	Chemistry- The periodic table	Biology- Ecosystems-
	Biology- Cells	Biology- Cells Physics- Forces- Biology- Digestion and human body-	Biology- Digestion and human body-	Physics-Energy	Physics-Energy-	

Year 8 Science Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 8	Biology cells and respiration	Biology cells and respiration-	<ul style="list-style-type: none"> • Physics- forces • • Biology- Photosynthesis 	<ul style="list-style-type: none"> • Physics- energy- • Biology- Photosynthesis 	<ul style="list-style-type: none"> • Physics- energy- • Biology- Photosynthesis 	<ul style="list-style-type: none"> • Physics- energy- Biology- Photosynthesis
	<ul style="list-style-type: none"> • Chemistry- reactions- 	<ul style="list-style-type: none"> • Chemistry- reactions- 				

Year 9 Science Curriculum Overview-

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 9						

	Biology- Inheritance and disease ● Chemistry- Exothermic and Endothermic reactions	Biology- Inheritance and disease Chemistry- Exothermic and Endothermic reactions ● Physics- Space and Waves	Biology- Inheritance and disease Chemistry- Exothermic and Endothermic reactions ● Physics- Space and Waves	GCSE CONTENT BEGINS B17- Biological Cycles C15- Using Earth Resources	B18- Human Population and Sustainability P3- Renewable Energy C1- Atomic Structure	B16- Interdependence, competition and sampling P6- Molecules of Matter
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KS4 Overview

Biology

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	B1- Cell Structure and Transport B2- Cell Division	B2- Cell Division B3- Organisation and the Digestive System	B4- Organising Animals and Plants B8- Photosynthesis	B9- Respiration B5- Communicable Diseases	B5- Communicable Diseases B6- Preventing and Treating Diseases	B7- Non Communicable Disease
TRIPLE	Decay & Rates of Decay Impact of human population	Impact of human population	Cell Transport Cell Cycle	Plant Focus	Bacterial growth in a lab Making Monoclonal antibodies	Revision

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 11	B7- Non Communicable Disease B10- The Human Nervous System B11- Hormonal Coordination	B11- Hormonal Coordination B13- Reproduction	B14- Variation and Evolution	B15- Genetics and Evolution	Revision	

Triple	B12- Controlling excretion	Making Monoclonal Antibodies	Plant Hormones	Impact of human population on environment	Cloning
	Growth of Bacteria in a lab	The Brain	Rates of Decay	Genetics	
	Plant Disease	The Eye	Impact of human population on environment		
		Plant Hormones			

Chemistry

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	C1 Atomic structure C2 Periodic table	C3 Structure and bonding	C5 Chemical changes	C5 Chemical changes C6 Electrolysis	C7 Energy changes	C4 Chemical calculations
Triple Only	Maths Skills How Science works Nanoparticles	Ionic Complexes Ion Testing	Titration Fuel cells	Atom Economy Chemical calculations	Titration	Revision
Year 11	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	C8 Rates and equilibrium	C8 Rates and equilibrium C9 Crude oils and fuels	C9 Crude oils and fuels	C12 Chemical analysis	C13 The Earth's atmosphere	C14 The Earth's resources

Triple Only	Transition Elements Nanoparticles Atom Economy Titrations	Titrations Crude Oils and Fuels Chemical Cells	Organic chemistry Polymerisations	Ions and Ion Testings Rusting Glass, Ceramics and Composites	Haber Process Making fertilisers	Revision
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Physics

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 10	P1 Energy Transfers P2 Energy transfer by heating	P4 Electric Circuits	P5 Electric circuits in the home	P7 Radioactivity	P6 Molecules and matter	P9 Motion
TRIPLE ONLY	Infrared radiation Greenhouse affect Static Space	Space- Big bang Moments	Electric Circuits Electric circuits in the home Renewable energy	Renewable Energy Radiation	Radiation Pressure	Molecules and Matter Pressure

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

Year 11	P7 Radioactivity	P9 Motion P10 Force and motion	P15 electromagnetism	Revision	Revision	
TRIPLE	Infrared Radiation Static Pressure Fission/ Fusion	Moments Space Waves	Light Waves	Moments Electromagnets	Microphones and Loudspeakers Transformers	

A level Biology Curriculum Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 12	2.1- Cell Structure 2.2- Biological Molecules 2.3- Nucleic Acids	2.5- Biological Membranes 2.6- Cell division, diversity and differentiation 2.4- Enzymes	2.4- Enzymes 3.1- Exchange surfaces and breathing 4.1- Communicable Disease 3.2- Animal Transport	4.1- Communicable Disease 4.3- Classification and Evolution 3.3- Plant Transport	4.3- Classification and Evolution 4.2- Biodiversity 6.6- Population and sustainability	5.4- Hormonal Communication 6.5- Ecosystems
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

Year 13	5.1 – Communication and Homeostasis 5.3- Neuronal Communication 5.5- Animal Responses 5.2- Excretion	5.5- Plant Responses 5.6- Photosynthesis 5.7- Respiration 6.2- Patterns of Inheritance	6.2- Patterns of Inheritance 6.3 Manipulating Genomes 6.1- Cellular Control	6.4- Cloning and Biotechnology Revision	Revision
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Year 12	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	2.1 Atoms and reactions 4.1 Core organic chemistry	2.1 Atoms and reactions 4.1 Core organic chemistry	4.2 Alcohols, haloalkanes and analysis 2.2 Electrons, bonding and structure	4.2 Alcohols, haloalkanes and analysis 2.2 Electrons, bonding and structure	3.1 The periodic table and energy 3.2 Physical chemistry	3.1 The periodic table and energy 3.2 Physical chemistry 1.1 Practical skills and PAG focus but interweaved in every unit
Year 13	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	5.1 Rates, equilibrium and pH 6.1 Aromatic compounds, carbonyls and acids	5.1 Rates, equilibrium and pH 6.1 Aromatic compounds, carbonyls and acids	5.2 Energy 6.2 Nitrogen compounds, polymers and synthesis	5.3 Transitions metals 6.2 Nitrogen compounds, polymers and synthesis	6.3 Analysis Revision & Exam preparation	

Year 12	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	1.1 Practical skills 2.1 + 2.2 Quantities 3.1 Motion 3.2 Forces 4.4 Waves	3.3 Work, energy and power 4.5 Quantum Unit 4.1 Charge and current	3.4 Materials 4.2 EMF	3.5 Newtons Laws 4.3 Electrical Circuits	Consolidation of Practical activity endorsement Revision for EoY exams	5.5 Astrophysics 6.5 Medical imaging
Year 13	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	5.1 Thermal Physics 6.1 Capacitors	5.2 Circular motion 6.2 Electric fields	5.3 oscillations 6.3 Electromagnetism	5.4 Gravitational fields 6.4 Nuclear and particle physics	REVISION	

Extended Certificate

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 12	Unit 1: Principles and Applications of Science I <ul style="list-style-type: none"> • Biology • Chemistry • Physics 	Unit 1: Principles and Applications of Science I <ul style="list-style-type: none"> • Biology • Chemistry • Physics 	Unit 2: Practical Scientific Procedures and Techniques <ul style="list-style-type: none"> • Chromatography • Titrations <p><i>Unit 1 exams to take place in January</i></p>	Unit 2: Practical Scientific Procedures and Techniques <ul style="list-style-type: none"> • Chromatography • Titrations 	Unit 2: Practical Scientific Procedures and Techniques <ul style="list-style-type: none"> • Calorimetry • Personal review 	Unit 3: Science Investigative Skills <ul style="list-style-type: none"> • Plants • Electricity
Year 13	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Unit 3: Science Investigative Skills <ul style="list-style-type: none"> • Fuels • Diffusion 	Unit 3: Science Investigative Skills <ul style="list-style-type: none"> • Enzymes • Electricity • Plant Sampling 	Unit 9: Human Regulation and reproduction <p><i>Unit 3 exam takes place in January</i></p>	Unit 9: Human Regulation and reproduction	Unit 9: Human Regulation and reproduction	Unit 9: Human Regulation and reproduction

National Diploma

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 12	Unit 8: Physiology of Human Body Systems	Unit 8: Physiology of Human Body Systems	Unit 5: Principles and Applications of Science II	Unit 5: Principles and Applications of Science II	Unit 5: Principles and Applications of Science II <i>Unit 5 exams to take place in May</i>	Unit 4: Laboratory Techniques and their Application
Year 13	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
	Unit 4: Laboratory Techniques and their Application	Unit 4: Laboratory Techniques and their Application	Unit 6: Investigative Project	Unit 6: Investigative Project	Unit 6: Investigative Project	Unit 6: Investigative Project