



CURRICULUM AND ASSESSMENT MAP

SUBJECT Science

SUBJECT VISION:

From a young age we love to ask the questions “How?” and “Why?” and what better way to discover the answers than through learning about the Science behind the world we live in? At Kingsbury High School the Science Faculty has endeavoured to create a curriculum that engages students’ interest and enables them to develop their knowledge and understanding of the world and how things work. Practical experience and seeing for ourselves forms the foundation of how we encourage students to learn and through their experience at Kingsbury High the faculty looks to develop the Scientists of tomorrow.

Two lessons per week

YEAR 7	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	Safety, working scientifically, baseline test Particles and their Behaviour The Particle Model States of Matter Boiling, melting and freezing Diffusion Gas pressure	Cells Observing cells Plant and animal cells Specialised cells Movement of substances Unicellular organisms	Space The night sky The Solar System The Earth The Moon Elements, atoms and compounds Elements Atoms Compounds Chemical formulae	Structure and Function of Body Systems Levels of organisation Gas exchange Breathing The skeleton Joints and muscles	Reactions Elements, atoms and compounds Chemical formulae Chemical reactions Word equations Burning fuels Thermal decomposition Conservation of mass Exothermic and endothermic reactions	Forces Introduction to forces Squashing and stretching Drag forces and friction Forces at a distance Balanced and unbalanced
SKILLS	The following skills are acquired across the science course: drawing and interpreting graphs, calculations and equations, scientific literacy, planning experiments, carrying out experiments, interpreting data, drawing conclusions, evaluating, application of general concepts.					
ASSESSMENT	Progress will be regularly assessed through class work, homework and formative badger science assessments. In addition, there will be a common Science assessment at the end of each topic which test knowledge and understanding of each area studied. Students also sit an end of year exam covering all topics up to and including reactions.					
<i>Useful Resources / Guidance:</i> -Online text book for activate 1 and lesson player. All students are given a log in for this. https://www.kerboodle.com/app KS3 bite size includes key information, quizzes and videos. https://www.bbc.com/education/subjects/zng4d2p- Text books – Activate 1 book- https://global.oup.com/education/product/9780198392569/?region=uk , Revision guides and workbooks. https://www.cgpbooks.co.uk/Parent/books_ks3_science						

YEAR 8	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	<p>Reproduction Adolescence Reproductive systems Fertilisation and implantation Development of a foetus The menstrual cycle Flowers and pollination Fertilisation and germination Seed dispersal</p> <p>Acids and Alkalis Acids and alkalis Indicators and pH Neutralisation and making salts</p>	<p>Health and Lifestyle Nutrients Food tests Unhealthy diet Digestive system Bacteria and enzymes Drugs Alcohol Smoking</p> <p>The Periodic Table Metals and non-metals Groups and periods The elements of Group 1 The elements of Group 7 The elements of Group 0</p>	<p>Sound Waves vibrations and energy transfer Loudness and pitch Detecting sound Echoes and ultrasound</p> <p>Energy Food and fuels Energy adds up Energy and temperature Energy transfer: particles Energy transfer: radiation Energy resources Energy and power Work energy and machines</p>	<p>Adaptation and Inheritance Competition and adaptation Adapting to change Variation Inheritance Natural selection Extinction</p> <p>Separation Techniques Mixtures Solutions Solubility Filtration Evaporation and distillation chromatography</p>	<p>Light Light Reflection and refraction The camera and the eye Colour</p>	<p>Electricity and Magnetism Charging up Circuits and currents Potential difference Series and parallel Resistance Magnets and magnetic field Electromagnets Using electromagnets</p>
SKILLS	The following skills are acquired across the science course: drawing and interpreting graphs, calculations and equations, scientific literacy, planning experiments, carrying out experiments, interpreting data, drawing conclusions, evaluating, application of general concepts.					
ASSESSMENT	Progress will be regularly assessed through class work, homework and formative badger science assessments. In addition, there will be a common Science assessment at the end of each individual topic which test knowledge, skills and understanding of each area studied. Students also sit an end of year exam covering all topics up to and including light.					
<p><i>Useful Resources / Guidance:</i> Online text book for activate 1 +2 and lesson player resources all students are given a log in for this.- https://www.kerboodle.com/app KS3 bite size includes key information, quizzes and videos. https://www.bbc.com/education/subjects/zng4d2p- Students are provided with a username and password. This website will contain any homework tasks set by class teachers. www.showmyhomework.co.uk Textbooks – Activate 2 book- https://global.oup.com/education/product/9780198392569/?region=uk,- Revision guides and workbooks. https://www.cgpbooks.co.uk/Parent/books_ks3_science_-</p>						

Four lessons per week

YEAR 9	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	<p>Acids and metals Metals and oxygen Metals and water Metal displacement reactions Extracting metals Ceramics Polymers Composites</p> <p>Set 1 full investigation</p> <p>Ecosystem processes Photosynthesis Leaves Plant minerals Chemosynthesis Aerobic respiration Anaerobic respiration Food chains and webs Disruption to food chains and webs Ecosystems</p>	<p>Motion and Pressure Speed Motion graphs Pressure in gases Pressure in liquids Pressure on solids Turning forces</p> <p>The Earth The Earth and its atmosphere Sedimentary rocks Igneous and metamorphic rocks The rock cycle The carbon cycle Climate change Recycling</p>	<p>AQA Science GCSE begins.</p> <p>B1 Cell structure and transport</p> <p>C1 Atomic Structure</p> <p>P1 Conservation and dissipation of energy</p>	<p>B1 Cell structure and transport</p> <p>C1 Atomic structure</p> <p>P1 Conservation and dissipation of energy</p>	<p>B2 Cell division</p> <p>C2 The periodic table</p> <p>P2 Energy transfer by heating</p>	<p>B2 Cell division + Start B3</p> <p>C2 The periodic table</p> <p>P3 Energy resources</p>
SKILLS	The following skills are acquired across the science course: drawing and interpreting graphs, calculations and equations, scientific literacy, planning experiments, carrying out experiments, interpreting data, drawing conclusions, evaluating, application of general concepts.					
ASSESSMENT	Progress will be regularly assessed through class work, homework and pieces of extended written work. In addition, there will be a common Science assessment at the end of each topic which test knowledge and understanding of each area studied. Students also sit a mid-year and end of year exam.					
<p><i>Useful Resources / Guidance:</i> Online text book and lesson player resources all students are given a log in for this.- https://www.kerboodle.com/app -</p> <p>KS3 bite size includes key information, quizzes and videos.- https://www.bbc.com/education/subjects/zng4d2p-</p> <p>KS4 GCSE bitesize combined Science. -https://www.bbc.com/education/examspecs/z8r997h</p> <p>Students are provided with a username and password. This website will contain any homework tasks set by class teachers.- www.showmyhomework.co.uk</p>						

Six lessons per week

YEAR 10	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	C3 Structure and bonding B3 Organisation and the digestive system P6-Molecules and matter	C4- Chemical calculation B4- Organising animals and plants P7- Radioactivity	C5- Chemical Changes B5-Communicable diseases P4 Electric circuit	C6-Electrolysis B6-Preventing and treating disease B7 Non –Communicable diseases P5- Electricity in the home	C7- Energy changes B7 Non –Communicable diseases P8 Forces in balance	Chemistry revision include core practical exam question practice B8+9 Photosynthesis and Respiration Triple P9 Maths for Science unit- Physics revision
SKILLS	The following skills are acquired across the science course: drawing and interpreting graphs, calculations and equations, scientific literacy, planning experiments, carrying out experiments, interpreting data, drawing conclusions, evaluating, application of general concepts.					
ASSESSMENT	End of topic test C3, B3, P6	End of topic test C4, B4, P7	End of topic test C5, B5, P4	End of topic test C6, B6, P5	End of topic test C7, B7, P8	End of topic test B 8+9 one test. Triple P9 End of year paper 1 exam for Chemistry, Biology and Physics.

Useful Resources / Guidance:

AQA exam board specification Combined Science <http://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464>

AQA exam board specification Triple Science <http://www.aqa.org.uk/subjects/science/gcse>

AQA assessment material <http://www.aqa.org.uk/subjects/science/gcse/combined-science-trilogy-8464/assessment-resources>

Online text book and lesson player resources all students are given a log in for this-<https://www.kerboodle.com/app>

KS4 GCSE bitesize combined Science- <https://www.bbc.com/education/examspecs/z8r997h>

KS4 Bitesize triple Science- <https://www.bbc.com/education/subjects/zrkw2hv>

Revision guides and workbooks. https://www.cgpbooks.co.uk/Parent/whoAreYou.books_gcse_science_aqa_revision

Six lessons per week

YEAR 11	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
CONTENT	<p>Combined Science C7 or C8 Rates and Equilibrium?</p> <p>4.5 Homeostasis and response (B10-B11) P9- Motion P10 Force and motion</p> <p>Triple Science Chemistry C8 Rates and Equilibrium Biology 4.5 Homeostasis and response (B10-B12) Physics P10 Force and motion P11 Force and pressure</p>	<p>Combined Science C9 Crude oil and fuels + C10 Chemical analysis</p> <p>4.6 Inheritance and response(B12-B14)</p> <p>P10 Force in motion P11 Wave properties</p> <p>Triple Science Chemistry C9 Crude oil and fuels + C10 Organic Biology 4.6 Inheritance and response(B13-B14) Physics P12 Wave properties P13 Electromagnetic Waves</p>	<p>Combined Science C11 The Earth's atmosphere+ C12 The Earth's resources</p> <p>4.7 Ecology (B15-B17) P12+13 Electromagnetic Waves and Electromagnetism</p> <p>Triple Science Chemistry C11 Polymers C12 Chemical analysis Biology 4.6 Inheritance and response(B15) Physics P14 Light P15 Electromagnetism</p>	<p>Combined Science Chemistry Core practical revision. Revision (PiXL)</p> <p>Biology Core practical revision. Revision (PiXL)</p> <p>Physics Core practical revision. Revision (PiXL)</p> <p>Triple Science Chemistry C13 The Earth's atmosphere + C14 The Earth's resources Biology 4.7 Ecology(B16-B17) Physics P16 Space + revision</p>	<p>Combined Science Chemistry Core Practical Revision (PiXL)</p> <p>Biology Core practical revision. Topics B1-9 Revision (PiXL)</p> <p>Physics Core practical. Revision (PiXL)</p> <p>Triple Science Chemistry C15 using our resources +revision Biology 4.7 Ecology (B18) Physics Physics Core practical revision. Revision (PiXL)</p>
SKILLS	The following skills are acquired across the science course: drawing and interpreting graphs, calculations and equations, scientific literacy, planning experiments, carrying out experiments, interpreting data, drawing conclusions, evaluating, application of general concepts.				
ASSESSMENT	<p>All End of topic test 4.5 homeostasis and response, C8,, P9, P10</p> <p>Triple 4.5 homeostasis and response , C8, P10, P11</p>	<p>All students sit Mock1 three papers ones for each specialism. All End of topic test C9+10 4.6 Inheritance and response , P10, P11 Triple C9+10, P14 and P15</p>	<p>All students sit Mock 2 three papers two for each specialism. All End of topic test C11+12, 4.7 Ecology, P12+P13 Triple C11+12, , 4.6 Inheritance and response P14 and P15</p>	<p>Combined Science</p> <p>Triple End of topic test C13 +C14, 4.7 Ecology P14, P16</p>	<p>Combined Science Practice past papers weekly homework.</p> <p>Triple End of topic test C15, B18, 4.7 Ecology</p>
<p>Useful Resources / Guidance:</p> <p>AQA exam board specifications http://www.aqa.org.uk/subjects/science/gcse</p> <p>Online text book and lesson player resources all students are given a log in for this-https://www.kerboodle.com/app</p> <p>KS4 Bitesize- https://www.bbc.com/education/subjects/zrkw2hv</p> <p>Revision guides and workbooks. https://www.cgpbooks.co.uk/Parent/whoAreYou.books_gcse_science_aqa_revision</p>					

A level Chemistry

YEAR 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	T1: Atomic Structure/ T5: Quantitative Calculations	T5: Quantitative calculations / T2: Bonding	T4: Group 2 / T3: Redox/ T8: Energetics	T9: Rates / T6a: Organic Part 1	T6b: Organic Part 2 / T10: Equilibria	A Level T11: Equilibria II and T16: Rates II
SKILLS	Extending GCSE understanding through introductory Topic 1 and 5. Using practical work to support learning.	Core Practical 1, 2 and 3 to develop practical skills and application. Using practical work to support learning.	Core Practical 8 to develop practical skills and application. Knowledge and understanding.	Core Practical 4 and 5 to develop practical skills and application. Knowledge and understanding.	Core Practical 6 and 7 to develop practical skills and application. Knowledge and understanding.	Class practical on rates to prepare for Core Practical 13 and 14 in September. Use of complex maths, including graph work
ASSESSMENT	Baseline Assessment and compulsory exam question booklet *PAE = planning, analysis and assessment	Standard practical skills assessment / End of topic tests for T1, T5, T2 and T3. Year 12 Interim Assessment. PAE tasks 1 and 3 to assess application of practical work.	Standard practical skills assessment / Compulsory exam question booklet /End of topic tests for T1, T5, T2 and T3. PAE tasks 2, 4 and 5 to assess application of practical work.	Standard practical skills assessment / Compulsory exam question booklet /End of topic tests for T6a. Year 12 Mock Assessment. PAE tasks 6, 7 and 10 to assess application of practical work.	Standard practical skills assessment / Compulsory exam question booklet /End of topic tests for T9 & 10 and T6b. PAE tasks 8 and 9 to assess application of practical work. Yr 12 Mock 2 Assessment.	Compulsory exam question booklet. Summer A Level Booklet to recap AS material and preparation for year 2. PAE tasks 11 and 12 to assess application of practical work.

Useful Resources / Guidance:

AS Edexcel Chemistry – Curtis and Scott / Edexcel Chemistry Student Book 1 – Facer / CGP Revision Workbook

Websites: www.chemguide.co.uk / <http://www.docbrown.info/page13/page13.htm>

A level Chemistry

YEAR 13	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	T11: Equilibria / T16: Rates II Summer bridging work	T12: Acids / T13: Energetics II	T14: Redox / T17: Organic II	T15: Transition metals / T18: Organic III / T19: Synthesis	Revision of Year 1 and Year 2	
SKILLS	Core Practical 13a and 13b to develop practical skills and application.	Core Practical 9 and 14 to develop practical skills and application. Using practical work to support learning. Knowledge and understanding.	Core Practical 10 and 11 to develop practical skills and application. Using practical work to support learning. Knowledge and understanding.	Core Practical 12 and 15 to develop practical skills and application. Using practical work to support learning. Knowledge and understanding.	Synoptic approach to exams Mind maps to draw together the overlapping topics	
ASSESSMENT	Compulsory exam question booklet. End of topic tests. PAE tasks 11 and 12 to assess application of practical work.	Compulsory exam question booklet. End of topic tests. PAE tasks 13, 14 and 15 to assess application of practical work.	Compulsory exam question booklet. End of topic tests. PAE tasks 16, 17 and 18 to assess application of practical work. Exam booklet practice of past papers and mark schemes.	Compulsory exam question booklet. End of topic tests. PAE tasks 19 and 20 to assess application of practical work. MCQ exam booklet practice.	Mock examinations Feedback sessions Synoptic questions Model answers	

Useful Resources / Guidance:

A Level Chemistry Book 2 – Curtis and Murgatroyd / Edexcel Chemistry Student Book 2 – Facer / Calculations in AS/A Level Chemistry – Clark / Calculations for A Level Chemistry – Ramsden / CGP Revision Workbook

Websites: www.chemguide.co.uk / <http://www.docbrown.info/page13/page13.htm>

A level Physics

YEAR 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	3.1 Motion 4.1 Charge and current 4.2 Energy, power and resistance	3.2 Forces in action 4.3 Electrical circuits	3.3 Work, energy and power 4.4 Waves	3.5 Newton's laws of motion and momentum 4.5 Quantum physics	Revision	6.1 Capacitors (A level)
SKILLS	1. Development of Practical Skills in Physics. 2. Foundations of Physics M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. 2. Foundations of Physics M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. 2. Foundations of Physics M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. 2. Foundations of Physics M0-M4 Mathematical Skills How Science Works 1-12	Exam skills	1. Development of Practical Skills in Physics. M0-M4 Mathematical Skills How Science Works 1-12
ASSESSMENT	Required Practical End of Unit Tests	Required Practical End of Unit Tests November Tests	Required Practical End of Unit Tests January Re-sits	Required Practical End of Unit Tests	AS Level Exams	Required Practical

Useful Resources / Guidance: AS level Specification/Required Textbook/A Level Physics Online/Practical Skills Handbook

<https://www.alevelphysicsonline.com/>

<http://www.physicsandmathstutor.com/>

YEAR 13	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	5.1 Thermal physics 6.2 Electric fields	5.2 Circular motion 5.3 Oscillations 6.3 Electromagnetism	5.4 Gravitational fields 6.4 Nuclear and particle physics	5.5 Astrophysics and cosmology 6.5 Medical imaging	Revision	
SKILLS	1. Development of Practical Skills in Physics. M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. M0-M4 Mathematical Skills How Science Works 1-12	1. Development of Practical Skills in Physics. M0-M4 Mathematical Skills How Science Works 1-12		
ASSESSMENT	Required Practical End of Unit Tests September Exam	Required Practical End of Unit Tests November Tests	Required Practical End of Unit Tests January Re-sits	Required Practical End of Unit Tests	A Level Exams	

Useful Resources / Guidance: A level Specification/Required Textbook/A Level Physics Online/Practical Skills Handbook

<https://www.alevelphysicsonline.com/>

<http://www.physicsandmathstutor.com/>

A level Biology

YEAR 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	Bio molecules/Cell structure	Enzyme reactions/ cell membranes	Exchange surfaces/ communicable diseases	Biodiversity/ transport in animals	Classification/ Adaptation in plants	Homeostasis/ Cellular control
SKILLS	Microscopy/ using dilutions	Practical assays/Graphs	Dissection/ interpreting data	Dissection/ field study	Biological keys/ Experimental techniques	Presentations
ASSESSMENT	PAG's/ Written exam	PAG's/ Written exam November Tests	PAG's/ Written exam January Re-sits	PAG's/ Written exam	PAG's/ Written exam AS Level Exams	PAG's
<i>Useful Resources / Guidance: Kerboodle; OCR Practical, maths, drawing, skills handbooks.</i>						

YEAR 13	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT	Ecology Field trip/	Homeostasis/ Cellular control	Genetics/ Excretion	Nervous system/ Population Genetics	Biotechnology/ Bioenergetics	
SKILLS	Statistics/ Sampling techniques	Practical assays/Graphs	Statistics/ Dissection/ microscopy	Using Maths for Biologists including standard deviation	Experimental techniques/ interpreting data	
ASSESSMENT	PAG's/ Written exam September Exam	PAG's/ Written exam November Tests	PAG's/ Written exam January Re-sits	PAG's/ Written exam	PAG's/ Written exam A Level Exams	
<i>Useful Resources / Guidance: Kerboodle; OCR Practical, maths, drawing, skills handbooks.</i>						
Websites https://thealevelbiologist.co.uk/ http://www.physicsandmathstutor.com/biology-revision/						

