Highclare School

L5 Curriculum Plan

This curriculum plan includes an outline of the topics and themes studied in each subject throughout the year. L5 pupils study 9 or 10 GCSE subjects (dependent on Science option); in addition they have recreational PE lessons and PSHCE.

The table below shows the time allocated to each subject per week:

Subject	Hours
English Language & Literature	4
Mathematics	4

Subject	Hours
Science: Biology Chemistry Physics	6

Subject	Hours
Option A	2.5
Option B	2.5
Option C	2.5
Option D	2.5

Subject	Hours
Physical Education	1.5
PSHCE	0.5

L5 pupils have internal school examinations in all GCSE subjects in the first week of the summer term. All GCSE examinations are taken at the end of the U5. For subjects with non-examination assessment (NEA) this will be referred to in the plan if it is completed during L5.

Subjects students will take at GCSE

Core Subjects (courses to be followed by all):

- Maths
- English Language & English Literature (taught in parallel in English lessons)
- Three Sciences (either in triple or combined science form)
- Modern Foreign Language* (French, German or Spanish)

  *Pupils who receive learning support, or for whom it can be argued that their interests are best served by not studying a language, may seek permission to be exempted from this expectation.

Plus a selection of 3 more options from the following list:

- Business Studies, History, Geography, Art, Craft & Design, Photography, D&T, Computer Science, Creative IMedia, RS, Food & Nutrition, Drama, GCSE PE

We hope that you find the plan informative and useful.

Mr M Coles
Deputy Head of Senior School: Acdemic

Subject	Autumn term	Spring term	Summer term
Art, Craft & Design	Introduction to GCSE Art Guided work exploring the theme 'Identity' Key skills: Structuring a sketchbook Mind mapping ideas / creating moodboards The assessment objectives in art Annotation and artist research Key techniques: Refining realistic pencil drawing skills Developing work in range of media including pen, watercolour and acrylic paint Basic Photography and Photoshop skills Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1)	Component 1- continuation of coursework Guided work exploring the theme 'Identity' Begin developing a personal response to project theme Focus on recording from primary observations Development of skills, materials and techniques including Photography and Photoshop Exploration of critical/contextual references and project theme/s Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1) Planning a mini outcome for mock examination	Assessment: Mock examination outcome - AO4 Component 1- continuation of coursework Continue developing a personal response to project theme, refining of techniques Exploration of critical/contextual references and project theme/s Writing a statement of Intent Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1)
Biology	**Organisation:** Stem cels, mitosis and plant tissues and transport are covered in this unit that builds on students prior Upper Fourth learning. **Communicable diseases:** This unit builds on the unit of cell biology and examines the diseases caused by bacteria, viruses, fungi and protists and their core method of control. The human defence system is also covered as well as the way vaccines and antibiotics work to reduce disease. GCSE Biologists also learn about monoclonal antibodies. **Bioenergetics:** This unit makes links to photosynthesis but looks at the differences between aerobic and anaerobic respiration and how exercise causes changes to the body as a result of the impact on metabolic reactions.	**Human coordination and response**; Students are introduced to homeostasis in relation to both chemical (hormones) and electrical (nervous system) responses. **Genes, Inheritance and evolution (pt 1):** This unit enables students to understand how variation occurs due to genetic and environmental differences, as they study the differences between sexual and asexual reproduction. **Biological organisation:** Having studied the organisation of human digestive and respiratory system in U4, students will learn in depth about the non-communicable diseases that affect these systems including the impact of a healthy lifestyle.	**Genes, Inheritance and evolution (pt 2):** Students will review sexual and asexual reproduction and look in more depth to the role of the gene in controlling characteristics (monohybrid). Students will look at a number of genetic disorders.
	GCSE required practicals are completed as appropriate throughout the course. GCSE examination questions are practised for each topic.		

Subject	Autumn term	Spring term	Summer term
Business	Business Enterprise Entrepreneurship Risk and reward Dynamic nature of business Added value Customer needs Market research Market segmentation Impact of competition	Aims and objectives Revenue, Costs & Profit Break even Cash flow Sources of finance Limited liability Ownership Location Marketing mix Business plans Stakeholders Technology	Legislation The economy External influences Business growth Changes in aims and objectives
Chemistry	**Chemical bonding:** Unit enables students to learn a on ionic and covalent bonding and study covalent and metallic bonding. The units will also examine metallic bonding and the structure of alloys, diamond and graphite. **Quantitative chemistry (pt 1):** Using and advancing their understanding of atomic and molecular structure, students look at atomic and formula mass, the conservation of mass during chemical reactions and finally learn about the 'mole' as a quantity **Energy changes**: This unit looks at exothermic and endothermic reactions and their profiles.	**Chemical changes**: This expansive unit allows students to study chemical reactions in terms of oxidation, reduction, displacement and the reactivity series. Students also look at reactions involving acids and bases (neutralisation) before looking at the role of electrolysis as a method of separation. **Quantitative chemistry (pt 2):** Students build on term 1's learning of the mole and learn about reactant quantities in reactants and products and use the conservation of mass as an underlying principle. Students will learn the procedure for carrying out titrations as well as percentage yield.	**Rates of reactions:** Students investigate the factors that affect the rate of chemical reactions including the role of catalysts. **Organic chemistry:** This unit looks at the role of carbon and hydrogen in the structure, properties and reactions of alkanes and alkenes. Students will then look at how organic molecules can be separated through fractional distillation.

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GCSE examination questions are practised for each topic.

Subject	Autumn term	Spring term	Summer term
Combined Science: Biology	**Organisation:** Stem cels, mitosis and plant tissues and transport are covered in this unit that builds on students prior Upper Fourth learning. **Communicable diseases:** This unit builds on the unit of cell biology and examines the diseases caused by bacteria, viruses, fungi and protists and their core method of control. The human defence system is also covered as well as the way vaccines and antibiotics work to reduce disease. **Bioenergetics:** This unit makes links to photosynthesis but looks at the differences between aerobic and anaerobic respiration and how exercise causes changes to the body as a result of the impact on metabolic reactions.	**Human coordination and response**; Students are introduced to homeostasis in relation to both chemical (hormones) and electrical (nervous system) responses. **Genes, Inheritance and evolution (pt 1):** This unit enables students to understand how variation occurs due to genetic and environmental differences, as they study the differences between sexual and asexual reproduction. **Biological organisation:** Having studied the organisation of human digestive and respiratory system in U4, students will learn in depth about the non-communicable diseases that affect these systems including the impact of a healthy lifestyle. **Revision** Consolidation time is given to enable students to prepare well for their end of year exams.	**Genes, Inheritance and evolution (pt 2):** Students will review sexual and asexual reproduction and look in more depth to the role of the gene in controlling characteristics (monohybrid). Students will look at a number of genetic disorders

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Subject	Autumn term	Spring term	Summer term
Combined Science: Chemistry	**Chemical bonding:** Unit enables students to learn a on ionic and covalent bonding and study covalent and metallic bonding. The units will also examine metallic bonding and the structure of alloys, diamond and graphite. **Quantitative chemistry (pt 1):** Using and advancing their understanding of atomic and molecular structure, students look at atomic and formula mass, the conservation of mass during chemical reactions and finally learn about the 'mole' as a quantity. **Energy changes**: This unit looks at exothermic and endothermic reactions and their profiles	**Chemical changes**: This expansive unit allows students to study chemical reactions in terms of oxidation, reduction, displacement and the reactivity series. Students also look at reactions involving acids and bases (neutralisation) before looking at the role of electrolysis as a method of separation. **Quantitative chemistry (pt 2):** Students build on term 1's learning of the mole and learn about reactant quantities in reactants and products and use the conservation of mass as an underlying principle. **Revision** Consolidation time is given to enable students to prepare well for their end of year exams. **Revision** Consolidation time is given to enable students to prepare well for their end of year exams.	**Rates of reactions:** Students investigate the factors that affect the rate of chemical reactions including the role of catalysts. **Organic chemistry:** This unit looks at the role of carbon and hydrogen in the structure, properties and reactions of alkanes and alkenes. Students will then look at how organic molecules can be separated through fractional distillation

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Subject	Autumn term	Spring term	Summer term
Combined Science: Physics	**Electricity:** Students learn about current in a circuit in relation to the rate of charge flow and how resistance reduces this flow. Students investigate different resistors and their affects on a circuit. **Particle model of matter:** Building on the topic of energy and KS3 forces, students learn about density and changes of state and internal energy of molecules. This topic also looks at specific latent heat. **Atomic structure (pt 1)**: In this topic, students look at ionising radiation types of alpha, beta and gamma. Students learn about their relative ionising abilities and their penetrative properties. How particles cause contamination and how unstable atoms decay is also covered.	**Forces:** This unit examines contact and non-contact forces in relation to vector and scalar properties and students learn how to resolve forces acting on an object. **Electricity (pt 2):** The concepts of electrical power and electricity generation and delivery via the national grid. **Revision** Consolidation time is given to enable students to prepare well for their end of year exams.	**Atomic structure (pt 2)**: This unit follows on from term 1 and defines the term half-live and uses this to problem solve situations regarding isotopic decay. **Forces:** This unit examines contact and non-contact forces in relation to vector and scalar properties and students learn how to resolve forces acting on an object. This comprehensive unit also looks at Newton's Laws of motion in depth. This term will also be used to secure understanding of units covered throughout the year.

GCSE required practicals are completed as appropriate throughout the course.
GCSE examination questions are practised for each topic.

Subject	Autumn term	Spring term	Summer term
Computer Science	**1.1 – Systems architecture** 1.1.1 Architecture of the CPU 1.1.2 CPU performance 1.1.3 Embedded systems **1.2 – Memory and storage** 1.2.1 Primary storage (Memory) 1.2.2 Secondary storage 1.2.3 Units Python Programming Techniques	**1.3 – Memory and storage** 1.2.4 Data storage 1.2.5 Compression **1.3 – Computer networks, connections and protocols** 1.3.1 Networks and topologies 1.3.2 Wired and wireless networks, protocols and layers **2.1 – Algorithms** 2.1.1 Computational Thinking 2.1.2 Designing, creating and refining algorithms Python Programming Techniques	**1.4 – Network security** 1.4.1 Threats to computer systems and networks 1.4.2 Identifying and preventing vulnerabilities **2.1 – Algorithms** 2.1.3 Searching and sorting algorithms **2.2 – Programming Fundamentals** 2.2.1 Programming Fundamentals 2.2.2 Data types

Subject	Autumn term	Spring term	Summer term
Creative iMedia	**Unit R093: Creative iMedia in the media industry** **Topic Area 1:** The media industry 1.1 Media industry sectors and products **Topic Area 2:** Factors influencing product design 2.1 How style, content and layout are linked to purpose 2.3 Audience demographics and segmentation 2.5 Media codes used to convey meaning, create impact and/or engage audiences **Topic Area 3:** Pre-production planning 3.1 Work planning 3.2 Documents used to support ideas generation 3.3 Documents used to design and plan media products **Unit R094: Visual identity and graphics** **Topic Area 1:** Develop visual identity 1.1 Purpose, elements and design of visual identity **Topic Area 2:** Plan digital graphics for products 2.1 Graphic design and conventions 2.2 Properties of digital graphics and assets	**Unit R094: Visual identity and graphics** **Topic Area 2:** Plan digital graphics for products 2.3 Techniques to plan visual identity and digital graphics **Topic Area 3:** Create visual identity and digital graphics 3.1 Tools and techniques of imaging editing software used to create digital graphics 3.2 Technical skills to source, create and prepare assets for use within digital graphics 3.3 Techniques to save and export visual identity and digital graphics **Unit R093: Creative iMedia in the media industry** **Topic Area 4:** Distribution considerations Working on the NEA for R094	Working on the NEA for R094 Submit NEA for R094 **Unit R096: Animation with audio** **Topic Area 1:** Plan animation with audio 1.1 Features and conventions of animation with audio 1.2 Resources required to create animation with audio Pre-production and planning documentation and techniques for animation with audio

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Design & Technology	<u>Materials and their working properties</u> - Paper and board - Timber - Metals and alloys - Polymers - Textiles <u>Common specialist technical principles</u> - Forces and stresses - Functionally - Social footprint - 6 R's - Scale of production <u>Designing principles</u> - Primary and secondary sources - The work of others- designers - The work of others- companies - Design strategies - Communicating design ideas <u>Mini research project</u>	<u>Selection of materials and components</u> - Selection of materials - Tolerances and allowances - Materials and marking out. - Tools and equipment - Surfaces and finishes. <u>New and emerging technology</u> - Industry and enterprise. - Sustainability and the environment - People, culture and society. - Production techniques and systems <u>Mini NEA</u> - Design and make project	<u>Energy, material, systems and devise</u> - Energy generation - Energy storage - Modern and smart materials - Composite materials and technical textiles - Systems approach - Electronic systems - Mechanical devices <u>Introduction to NEA – (starts June 1st)</u> - How to write a design brief - How to write a design specification - Generating imaginative and creative designs - Using primary and secondary data to understand client and/or user needs. - Market research, interviews, human factors - Constraints that are presented to designers
Drama	Introduction to GCSE Drama Workshops on acting technique. Stage management, Characterisation Vocal technique Confidence Performing for camera Performing for an audience.	Devising Unit 1 (Mock) How to use a stimulus to create ideas. Research Bertolt Brecht Stanislavski Devising a 15 minute performance using a stimulus. Mock Working Record.	Studying set text – Woman in Black Stephen Mallatrat and how he stages his play – The Woman in Black. Lighting Costume Proxemics Characterisation

Subject	Autumn term	Spring term	Summer term
English	Baseline spelling assessment. AQA Power and Conflict poetry GCSE English Language paper 1 Q5 skills: creative writing *The Sign of Four* by Arthur Conan Doyle	*The Sign of Four* by Arthur Conan Doyle School examinations AQA Power and Conflict poetry GCSE English Language paper 1 skills. GCSE English Language paper 2 skills.	NEA spoken language assessment *An Inspector Calls* by J B Priestley GCSE English Language paper 2 skills.
	Learning key quotations of the set texts. Language skills. Examination practice.		
Food & Nutrition	Introduction to GCSE Protein Fat Carbohydrates Vitamins and minerals Eat well guide 8 Healthy eating tips Nutrition different life stages Diet related health risks	Why food is cooked Heat transfer Cooking methods Denaturation/coagulation Gelatinisation/caramelisation Chemical properties of fats and oils Mechanical raising agents Biological raising agents Bacterial growth Buying / storing food Preparation and cooking food Personal hygiene	Food choice Labelling and marketing British / international cuisine Sensory evaluation Medical conditions Seasonal foods Food waste Food miles Food packaging Food sources (GM/Organic) Food security
	High-level practical skills, practice investigation and food-preparation tasks and examination questions carried out throughout the year.		

Subject	Autumn term	Spring term	Summer term
French	**Free-time activities:** Events in the francophone world Life online What you do to stay active Tv programmes and films Making plans to go out Wjhat you did last weekend **Personal identity, family and friends:** Your identity Weekend routines Friends and friendship Favourite celebrities Positive role models Family celebrations and traditions	**School life:** School life in Francophone countries School subjects School life Opinions about rules Describing a past event at school Describing what your school used to be like **Healthy lifestyles:** Meals and mealtimes Talking about good mental health Describing unhealthy lifestyle choices Lifestyle changes	Travel and tourism: Holidays and accommodation Ideal holiday What you can see and do on holiday Francophone festivals Reviewing and booking accommodation Staycation activities
German	Me , my family and friends – relationships and marriage Technology in everyday life	Freetime activities Customs and festivals Home, town, neighbourhood and region	Travel and tourism
Geography	**Physical Landscapes in the UK** Coastal landscapes **Urban Challenges** The global pattern of urban change Urban growth in Nigeria	**Physical landscapes in the UK** Rivers **Urban challenges** Urban change in the UK Sustainable urban development **Field visit to The Cranedale Centre**, Yorkshire for completion of compulsory human and physical fieldwork.	**The Living World Tropical** Ecosystems Tropical rainforests Ecosystems **Resources and Food** Resource management; global distribution of resources Provision of food, water and energy in the UK and water management.

Subject	Autumn term	Spring term	Summer term
History	Henry VIII and his Ministers This includes a study of: Henry VIII's character and inheritance His treatment of his wives and ministers The Reformation and its impact The rise, fall and execution of key figures such as Anne Boleyn and Cardinal Wolsey	Germany 1918-1939 The impact of World War One on Germany The creation and flaws of the Weimar Republic The Golden Years The Wall Street Crash, the Depression and the rise of Hitler Hitler's consolidation of power Hitler as dictator	Germany 1918-1939 Hitler as dictator, including: His policies towards youth and women His treatment of minorities The Holocaust In the final weeks of term we will start the next unit – the Cold War - which will be studied in depth next year in U5
	Examination style questions will be set as homework throughout the year.		
Mathematics Higher tier	Unit 1: Powers, decimals, HCF and LCM, positive and negative, roots, rounding, reciprocals, standard form, indices and surds Unit 2: Expressions, substituting into simple formulae, expanding and factorising, equations, sequences and inequalities, simple proof Unit 3: Averages and range, collecting data, representing data Unit 4: Fractions, percentages, ratio and proportion	Unit 5: Angles, polygons, parallel lines; Right-angled triangles: Pythagoras and trigonometry Unit 6: Real-life and algebraic linear graphs, quadratic and cubic graphs, the equation of a circle, plus rates of change and area under graphs made from straight lines Unit 7: Perimeter, area and volume, plane shapes and prisms, circles, cylinders, spheres, cones; Accuracy and bounds"	Unit 8: Transformations; Constructions: triangles, nets, plan and elevation, loci, scale drawings and bearings Unit 9: Algebra: Solving quadratic equations and inequalities, solving simultaneous equations algebraically
Foundation tier	Unit 1: Number, powers, decimals, HCF and LCM, roots and rounding Unit 2: Expressions, substituting into simple formulae, expanding and factorising Unit 3: Drawing and interpreting graphs, tables and charts Unit 4: Fractions and percentages	Unit 5: Equations, inequalities and sequences Unit 6: Angles, polygons and parallel lines Unit 12: Right-angled triangles: Pythagoras and trigonometry" Unit 7: Statistics, sampling and averages	Unit 8: Perimeter, area and volume Unit 9: Real-life and algebraic linear graphs Unit 10: Transformations

Subject	Autumn term	Spring term	Summer term
Music	Back to basics – Music theory and the musical elements revisited A History of Western Music Begin Set Work Study – Music for stage and screen Complete a series of starter Composition projects Introductory performance skills	Continue with Set Work Study Conventions of the Baroque period Compile Wider Listening Resources Begin work on Composition 1	Complete and submit Composition 1 by the end of the Summer term Begin preparation for Solo performance with instrumental teacher Continue with Set Work Analysis – Classical/ Romantic Period and Wider Listening
Photography	Introduction to GCSE Photography Key skills: Importing and organising photos, and creating contact sheets Structuring a sketchbook The assessment objectives in art Annotation and photographer research Mind mapping ideas / creating moodboards Key techniques: Using digital SLR cameras Setting aperture, shutter speed and ISO Rules of composition Developing Photoshop skills and editing Guided work exploring the theme 'Opposites' Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1)	Component 1- continuation of coursework Guided work exploring the theme 'Opposites' Development of photographic techniques and Photoshop Experimentation with mixed media and material manipulation Exploration of critical/contextual references and project theme/s Begin developing a personal response to project theme Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1) Planning a mini outcome for mock examination	Assessment: Mock examination outcome - AO4 Component 1- continuation of coursework Continue developing a personal response to project theme, refining of techniques Exploration of critical/contextual references and project theme/s Writing a statement of Intent Assessment: A3 sketchbook – AO1, 2 & 3 (All work in counts towards grade for Component 1)

Subject	Autumn term	Spring term	Summer term
Physical Education GCSE	The structure and function of the skeletal system The structure and function of the muscular system Movement analysis The cardiovascular system Components of fitness Principles of training	The respiratory system Short term effects of exercise Long term effects of exercise Applying the principles of training Types of training Preventing injury in physical activity and training	Diet and nutrition Engagement patterns of different social groups in physical activities and sports Commercialisation of physical activity and sport AEP introduction and planning
	Practical performance in selected activities		
Physical Education (recreational)	Netball Hockey Badminton Football Rugby Basketball	Netball Hockey Volleyball Health and Fitness Football Rugby Basketball	Athletics – Track and Field Rounders Cricket Softball Tennis
Physics	**Electricity:** Students learn about current in a circuit in relation to the rate of charge flow and how resistance reduces this flow. Students investigate different resistors and their affects on a circuit. **Particle model of matter:** Building on the topic of energy and KS3 forces, students learn about density and changes of state and internal energy of molecules. This topic also looks at specific latent heat. **Atomic structure (pt 1)**: In this topic, students look at ionising radiation types of alpha, beta and gamma. Students learn about their relative ionising abilities and their penetrative properties. How particles cause contamination and how unstable atoms decay is also covered.	**Forces:** This unit examines contact and non-contact forces in relation to vector and scalar properties and students learn how to resolve forces acting on an object. **Electricity (pt 2):** The concepts of electrical power and electricity generation and delivery via the national grid. Triple scientists will also study static electricity.	**Atomic structure (pt 2)**: This unit follows on from term 1 and defines the term half-live and uses this to problem solve situations regarding isotopic decay. Triple science physicists will also look at nuclear equations. **Forces:** This unit examines contact and non-contact forces in relation to vector and scalar properties and students learn how to resolve forces acting on an object. This comprehensive unit also looks at Newton's Laws of motion in depth. Triple science physicists will also look at momentum. This term will also be used to secure understanding of units covered throughout the year.
	GCSE required practicals are completed as appropriate throughout the course. GCSE examination questions are practised for each topic.		

Subject	Autumn term	Spring term	Summer term
PSHCE	Confidence and self-worth - Building confidence about the way we look and the way we conduct ourselves in everyday life Body image and celebrating difference Gangs and implications on life; E safety - What is a digital footprint and how this may impact on school life	The Legal system in the United Kingdom Asylum seekers – identity; ethnicity; cultural issues such as 'banning the burqua' Violent extremism - the Prevent strategy; groups of extremists and the implications of discrimination because of ethnicity and religion Being Me' - Understanding my unique identity	Relationships and appropriate behaviour Arranged marriage; FGM;CSE Abortion - Ethics and awareness Cascaid Kudos – personal attributes, skills, likes and dislikes. Exploring careers.
Religious Studies	Christian Beliefs and Teachings Nature of God Problem of evil/suffering Trinity beliefs Creation beliefs Afterlife – judgement and heaven and hell Incarnation beliefs Crucifixion Salvation Resurrection and ascension Christian practices Forms of worship Prayer Sacraments Baptism Eucharist	Christian practices continued Places of pilgrimage Christmas celebrations Easter Church in the local community Persecution Reconciliation Poverty and Christian charities Religious, philosophical and ethical studies Theme E: Religion, crime and punishment Religion, crime and causes of crime Religion and punishment	Theme D: Religion, peace and conflict Religion, violence, terrorism and war Religion and belief in the 21st century conflict Islamic Beliefs and Teachings Key beliefs Sunni and Shi'as and beliefs Nature of Allah Beliefs today

Subject	Autumn term	Spring term	Summer term
Spanish	**Free-time activities** Spanish-speaking sports stars Digital life Sports and free-time activities Arranging to go out What you did at weekend **Holidays and travel plans** Discover Andalucia Travel plans Hispanic festivals Holidays in three tenses accommodation	**Personal identity, Family and relationships** Different types of families Describing people Favourite celebrities Friendships and relationships Problems and advice Family celebrations **Healthy lifestyles** Typical foods in Spanish-speaking countries Describing healthy daily routines Mealtimes and food trends Comparing old and new habits Illness and injuries Future plans for health and well being	**School life** Schools in Spain Typical school day Opinions about subjects Ideal school Students and teachers Describing a school trip in the past