GCSE Sciences Curriculum Map

Subject/Term	Year 10 and 11 Knowledge									
Science *Skills: Scientific thinking; Experimental skills; Analysis and evaluation; Scientific vocabulary*	Organisation, non-communicable diseases, plants. Energy (2), electricity. Organic chemistry 1, chemistry of the atmosphere, energy changes.	Bioenergetics, infection and response. Particle model, atomic structure. Energy changes, rate and extent of chemical change, quantitative chemistry 1.	Ecology. Atomic structure, Forces 1. (Chemical changes 1 for separate Chemistry).	Ecology (2), homeostasis and response. Forces (2), waves. Chemical changes 2, quantitative chemistry 2, (chemical analysis for separate Chemistry).		Homeostasis and response, inheritance and variation. Magnetism and electromagnetism, (space physics for separate Physics). Organic chemistry 2, Earth's resources.				
Geography *Skills: Knowledge; Comprehension; Application; Cartographic; Graphical; Numerical and statistical*	**Living in the UK Today (30%)** Landscapes People Threats				**The World Around Us (30%)** Ecosystems People Threats		**Geographical Skills (40%)** Knowledge from Living in the UK and The World Around Us units			
Maths *Red = higher* *Skills: Use and apply standard technique; Reason, interpret and communicate mathematically; Solve problems within mathematics and in other contexts*	<u>Number</u> Powers and roots Reciprocals Laws of indices Negative and Fractional Indices Standard form conversions and calculations <u>Algebra</u> Writing algebraic expressions Simplifying algebraic expressions	<u>Geometry</u> Basic angle fact Angles on parallel lines Angles in polygons Bearings Loci and constructions Circle theorems <u>Number</u> Currency conversion Fraction, decimal and percentage equivalence Percentage of amount Percentage increase/decrease Percentage change Reverse	<u>Geometry</u> Units of measurement Perimeter and area (rectangle, triangle, parallelogram, trapezium) Area of compound shapes Circumference and area of a circle <u>Number</u> Simplifying surds Surds calculations Rationalising the	<u>Number</u> Simplifying Ratios Sharing in a ratio Unitary Method Scale drawings Proportion Direct and inverse proportion algebraically	<u>Algebra</u> Solving linear equations (include fractions, negatives, brackets and unknowns on both sides) Solving quadratic equations Rearranging formulae – basics Rearranging formulae - advanced Completing the square	<u>Algebra</u> Generating sequences Nth term of linear sequences Nth term of quadratic sequences	<u>Geometry</u> Pythagoras Right-angled trigonometry Further trigonometry <u>Algebra</u> Plotting straight line graphs Plotting quadratic graphs y = mx + c Gradient Equation of a line – gradient and a point) Equation of line – 2 coordinates	<u>Geometry</u> Nets Properties of 2D shapes Properties of 3D shapes Plans and elevations Surface area and volume of prisms Surface area and volume of non-prisms (pyramid, cone, sphere) Compound measures <u>Data</u> Revision of Data Handling	<u>Algebra</u> Solving linear simultaneous equations Solving non-linear simultaneous equations Linear inequalities Graphical and quadratic inequalities <u>Data</u> Probability of a single event Relative frequency Expectation Systematic listing strategies	<u>Geometry</u> Symmetry All transformations Translation and basic vectors Reflection Rotation Enlargement Similarity and congruence <u>Algebra</u> Equation of a circle Graphs of trigonometric functions Functions Transformation of functions Iteration

	Expanding single and double brackets Expanding triple brackets Factorising into single and double brackets Substitution into formulae	percentages Compound and simple interest Growth and decay	denominator		Algebraic fractions Algebra Vectors		Parallel and perpendicular lines Other graphs Real life graphs Data Revision of Data Handling work covered in Term Six of Year Nine	work covered in Term Six of Year Nine Averages and Range Collecting Data Bar charts, pictograms, line graphs Pie Charts Scatter graphs Cumulative Frequency diagrams Box and Whisker Diagrams Histograms	Probability of combined events (mutually exclusive and independent) Probability with Venn diagrams Frequency trees Tree Diagrams	Estimating area under a curve Estimating gradient of curves Algebraic proof
Computing *Skills: Technical Literacy; Computational Thinking; Analysis, Evaluation and Implementation; Subject Related Mathematics*	**COMP 1** Systems Architecture Boolean Logic Memory and Storage devices Creating and Refining Algorithms Data Types Representing data First Programming Project					**COMP 2** Common Algorithms Systems Software Wider Context (ethical, legal, environmental, and cultural impacts) Software Development Tools and Methodologies Networking Threats and vulnerabilities Second Programming Project				
GCSE PE *Skills: Demonstrate; Analyse; Apply; Evaluate*	**Theory exam (60%)** A range of key facts and ideas under the main unit headings of: Anatomy and physiology Movement analysis Physical training Sports psychology Socio-cultural influences Health, fitness and well being Data analysis			**Practical (30%)** Key areas of knowledge vary based on the practical focus - see success criteria in the specification for each specific sport.		**Coursework (10%)** A range of key facts and ideas which include: Identify what makes a good performance and explain how it is measured. Training methods Components of fitness Theory content overlap			
Cambridge National Sports Studies *Skills: Research; Teamwork*	Contemporary Issues R184 Issues that affect participation sport The role of sport in promoting values Implications of hosting a major sporting event The role of NGB's in sport and the impact of technology in sport.			Performance & Leadership in Sports Activities R185 Strength & Weaknesses of your performances How to organise a planned sports activity How to apply practice methods to support improvement in a sports session and How to lead a sports session.			Sport and the Media R186 The different sources of media that cover sport Positive effects of the Media Negative effects of the Media		

DTA *Skills: Investigate/ Identify; Possibilities; Develop; Refine/Realise; Analyse*	**Introduction/ Communication of Design Ideas** Health and Safety. Materials and their working properties. Classification & Categorisation of types. Anthropometrics and Ergonomics Material management Specialist tools and equipment Design Strategies		**Design strategies and contexts** The work of others Sustainability and the environmental challenge Material sources & stock forms Specialist processes New and emerging technologies Developments in new materials Materials and their working properties		**Technological perspective** Energy and storage Ecological and social footprint Mechanical devices Systems approach to designing Forces and stresses	**NEA Exploring the Contexts** Designing and making principles Design Strategies	**NEA Coursework (35 hours)** Specialist Technical principles Designing and making principles Material stock forms		**Examination- Paper 1** Core Technical principles Specialist Technical principles Designing and making principles See Specification Content*	
FPN *Skills: Demonstrate knowledge and understanding; Apply knowledge and understanding; Plan, prepare and make; Analyse; Evaluate*	**Basic Preparation & Principles of Nutrition** Macro/micro nutrients and their sources Dietary reference values Energy balance	**Using the Hob & Diet & Good Health** Eatwell guide Specific dietary needs Nutritional values	**Making Sauces & Science of Food** Effect of cooking on food Heat transference Food spoilage	**Making Dough & Where Food Comes From** Food provenance Food manufacturing	**Higher Skills and NEA Practise** Food groups Value in diet Correct storage Origins of each commodity	**NEA1 & Principles of Nutrition** Macro/micro nutrients and their sources Dietary reference values Energy balance	**NEA2 & Diet & Good Health** Eatwell guide Specific dietary needs Nutritional values	**NEA2 & Science of Food** Effect of cooking on food Heat transference Food spoilage	**NEA2 & Where Food Comes From** Food provenance Food manufacturing	**Food Commodities and Exam Practise** Food groups Value in diet Correct storage Origins of each commodity
Business *Skills: Identify; State; Explain; Calculate; Complete; Analyse; Discuss; Evaluate; Recommend*	**Business activity** The role of business enterprise and entrepreneurship, Revenue, costs, profit and loss Business ownership, Stakeholders in business, Business aims and objectives, Business planning Business growth.		**Marketing** The role of marketing, market research, market segmentation, the marketing mix.		**People** The role of human resources, organisational structures and ways of working, communication in business, recruitment and selection, training and development, motivation and retention, employment law.	**Operations** Production processes, Quality of goods and services, The sales process and customer service, Consumer law, Business location, Working with suppliers	**Finance** The role of the finance function, Sources of finance, Revenue, costs, profit and loss, Break-even, Cash and cash flow		**Influences on Business and the Interdependent Nature of Business** Ethical and environmental considerations, The economic climate, Globalisation	