

## GCSE Sciences Curriculum Map

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

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|                                                                                                         | expressions<br>Expanding single and double brackets<br>Expanding triple brackets<br>Factorising into single and double brackets<br>Substitution into formulae                                                                                                             | change<br>Reverse percentages<br>Compound and simple interest<br>Growth and decay | Rationalising the denominator                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                 | Completing the square<br>Algebraic fractions<br>Algebra<br>Vectors                                                                                               |                                                                                                                                                                                                                    | lines<br>Other graphs<br>Real life graphs<br>Data<br>Revision of Data<br>Handling work covered in Term Six of Year Nine                   | covered in Term Six of Year Nine<br>Averages and Range<br>Collecting Data<br>Bar charts, pictograms, line graphs<br>Pie Charts<br>Scatter graphs<br>Cumulative Frequency diagrams<br>Box and Whisker Diagrams<br>Histograms | strategies<br>Probability of combined events (mutually exclusive and independent)<br>Probability with Venn diagrams<br>Frequency trees<br>Tree Diagrams | Iteration<br>Estimating area under a curve<br>Estimating gradient of curves<br>Algebraic proof |
| GCSE PE<br>Skills:<br>Demonstrate;<br>Analyse; Apply;<br>Evaluate                                       | Theory exam (60%)<br>A range of key facts and ideas under the main unit headings of:<br>Anatomy and physiology<br>Movement analysis<br>Physical training<br>Sports psychology<br>Socio-cultural influences<br>Health, fitness and well being<br>Data analysis             |                                                                                   |                                                                                                                                                                                                                                                   | Practical (30%)<br>Key areas of knowledge vary based on the practical focus - see success criteria in the specification for each specific sport.                                                                                                                |                                                                                                                                                                  | Coursework (10%)<br>A range of key facts and ideas which include:<br>Identify what makes a good performance and explain how it is measured.<br>Training methods<br>Components of fitness<br>Theory content overlap |                                                                                                                                           |                                                                                                                                                                                                                             |                                                                                                                                                         |                                                                                                |
| Cambridge National Sports Studies<br>Skills:<br>Research;<br>Teamwork                                   | Contemporary Issues R184<br><br>Issues that affect participation sport<br>The role of sport in promoting values<br>Implications of hosting a major sporting event<br>The role of NGB's in sport and the impact of technology in sport.                                    |                                                                                   |                                                                                                                                                                                                                                                   | Performance & Leadership in Sports Activities R185<br><br>Strength & Weaknesses of your performances<br>How to organise a planned sports activity<br>How to apply practice methods to support improvement in a sports session and how to lead a sports session. |                                                                                                                                                                  |                                                                                                                                                                                                                    | Outdoor Adventurous Activities<br><br>The opportunity to engage in activities in a natural outdoor setting and develop leadership skills. |                                                                                                                                                                                                                             |                                                                                                                                                         |                                                                                                |
| DTA<br>Skills:<br>Investigate/<br>Identify;<br>Possibilities;<br>Develop;<br>Refine/Realise;<br>Analyse | Introduction/<br>Communication of Design Ideas<br>Health and Safety.<br>Materials and their working properties.<br>Classification & Categorisation of types. Anthropometrics and Ergonomics<br>Material management<br>Specialist tools and equipment<br>Design Strategies |                                                                                   | Design strategies and contexts<br>The work of others<br>Sustainability and the environmental challenge<br>Material sources & stock forms<br>Specialist processes<br>New and emerging technologies<br>Developments in new materials. Materials and |                                                                                                                                                                                                                                                                 | Technological perspective<br>Energy and storage<br>Ecological and social footprint<br>Mechanical devices<br>Systems approach to designing<br>Forces and stresses | NEA Exploring the Contexts<br>Designing and making principles<br>Design<br>Strategies                                                                                                                              | NEA Coursework (35 hours)<br>Specialist Technical principles<br>Designing and making principles<br>Material stock forms                   |                                                                                                                                                                                                                             | Examination- Paper 1<br>Core Technical principles<br>Specialist Technical principles<br>Designing and making principles<br>See Specification Content*   |                                                                                                |

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|                                                                                                                                                    |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                   | their working properties                                                                                                                                                                                               |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |
| <b>FPN</b><br><i>Skills: Demonstrate knowledge and understanding; Apply knowledge and understanding; Plan, prepare and make; Analyse; Evaluate</i> | <b>Basic Preparation &amp; Principles of Nutrition</b><br>Macro/micro nutrients and their sources<br>Dietary reference values<br>Energy balance                                                                                  | <b>Using the Hob &amp; Diet &amp; Good Health</b><br>Eatwell guide<br>Specific dietary needs<br>Nutritional values                                                                                                                | <b>Making Sauces &amp; Science of Food</b><br>Effect of cooking on food<br>Heat transference<br>Food spoilage                                                                                                          | <b>Making Dough &amp; Where Food Comes From</b><br>Food provenance<br>Food manufacturing                                                                                           | <b>Higher Skills and NEA Practise</b><br>Food groups<br>Value in diet<br>Correct storage<br>Origins of each commodity                                                              | <b>NEA1 &amp; Principles of Nutrition</b><br>Macro/micro nutrients and their sources<br>Dietary reference values<br>Energy balance                                                 | <b>NEA2 &amp; Diet &amp; Good Health</b><br>Eatwell guide<br>Specific dietary needs<br>Nutritional values                                                                          | <b>NEA2 &amp; Science of Food</b><br>Effect of cooking on food<br>Heat transference<br>Food spoilage                                                                               | <b>NEA2 &amp; Where Food Comes From</b><br>Food provenance<br>Food manufacturing                                                                                                   | <b>Food Commodities and Exam Practise</b><br>Food groups<br>Value in diet<br>Correct storage<br>Origins of each commodity                                                          |
| <b>Home Coking BTEC</b><br><i>Skills: Health &amp; safety; Knife skills; Use of appliances &amp; equipment</i>                                     | Course introduction and brief given.<br>Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Identify and use of Kitchen equipment.                 | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes and cook and serve meals.<br>Understanding the Eatwell Guide and balanced diets. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals.                                     | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. | Health and safety, safe handling of foods to stop cross contamination.<br>Knowledge of the 14 Allergens and safe food storage.<br>Follow recipes accurately, cook and serve meals. |
| <b>Business</b><br><i>Skills: Identify; State; Explain; Calculate; Complete; Analyse; Discuss; Evaluate; Recommend</i>                             | <b>Business activity</b><br>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. | <b>Marketing</b><br>The role of marketing, market research, market segmentation, the marketing mix.                                                                                                                               | <b>People</b><br>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. | <b>Operations</b><br>Production processes, Quality of goods and services, The sales process and customer service, Consumer law, Business location, Working with suppliers          | <b>Finance</b><br>The role of the finance function, Sources of finance, Revenue, costs, profit and loss, Break-even, Cash and cash flow                                            | <b>Influences on Business and the Interdependent Nature of Business</b><br>Ethical and environmental considerations, The economic climate, Globalisation                           |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |                                                                                                                                                                                    |