**Curriculum Plan - Overview**

The science curriculum is designed to be fully inclusive and specific to the students of Kingstone High School. The curriculum aims to stimulate, curiosity, interest and enjoyment in science for all learners. Learners are encouraged to engage with a wide range of scientific concepts, facts, theories and principals in order to understand their relevance to the world around them.

We want to enable our students to communicate their ideas about science by developing literacy in science and equip our students to use science to solve challenging problems. The curriculum will encourage the development of our students’ understanding of what it means to work scientifically by ensuring disciplinary content is carefully embedded within the framework of substantive knowledge. Practical work is considered prior to its execution, ensuring students have a robust understanding of the theory that underpins each practical, allowing them to maximise their learning. We want the curriculum to be dynamic so that it engages all of our learners ensuring it can prepare our students for the wider world of further study and careers.

To broaden and deepen scientific understanding at GCSE, the GCSE course begins in Year 9. The student gain early exposure to the disciplinary language used at GCSE and gain valuable experience and insight into science at this level. This supports and drives engagement in science in later years. In addition, the three year GCSE provides students with an early opportunity to truly engage with the wonders of science and supports them in making a more informed decision regarding the triple science course, one of several options available for selection during the Year 9 options process.

**Assessment Opportunities**

In years 7 and 8, students will be have summative assessments at the end of each half term, and term. In years 9, 10 and 11 students will complete end of module assessments. These assessments will assess students’ ability to apply the knowledge and understanding they have learnt. The papers will also include questions based on previous units to test how deeply embedded the learning and understanding. The assessments include questions to assess their numeracy skills and their ability to work scientifically.

The curriculum overview provides broad timings of the learning sequences throughout the year. Rotations of topics occur, across the different disciplines, to maximise practical work, ensuring all students have opportunities to engage will science fully.

**Autumn 1 (8 weeks)**

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|  | **Term** | **Duration/wks.** | **Topic** | **Key Skills, Content or Knowledge** | **Summative Assessment** | **Blended Learning** | **Links** |
| **Year 7** | **A1** | **2** | **7A Biology** | * Cells Tissues, Organs and Systems. | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE B1, B2. |
| **A1** | **2** | **7E Chemistry** | * Mixtures and Separation | End of half term assessment- interleaved topics | * Educake online learning platform.   Seneca Learning | GCSE C2, 9G |
|  |
| **A1** | **2** | **7I Physics** | * Energy | End of half term assessment- interleaved topics | * Educake online learning platform.   Seneca Learning | GCSE P3 |
|  |
| **Year 8** | **A1** | **2** | **8B Biology** | * Plants and their reproduction | End of half term assessment- interleaved topics | * Educake online learning platform.   Seneca Learning | GCSE CB2 |
|  |
| **A1** | **2** | **8E Chemistry** | * Combustion | End of half term assessment- interleaved topics | * Educake online learning platform.   Seneca Learning | GCSE C16 |
|  |
| **A1** | **2** | **8I Physics** | * Fluids | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE C12 |
|  |
| **Year 9** | **A1** | **8** | **CB1/ SB1 Biology** | * Overarching concepts in Biology | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7A, 8A |
|  |
| **A1** | **8** | **CC1/ SC1 Chemistry**  **CC2/ SC2 Chemistry** | * States of Matter | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8I, 7E |
| * Methods of separation and purifying substances |
| **A1** | **8** | **CP3/ SP3 Physics** | * Conservation of Energy | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7I |
|  |
| **Year 10** | **A1** | **7** | **CB4/ SB4 Biology** | * Natural Selection and Genetic Modification | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7D, 9A |
|  |
| **A1** | **7** | **CC5/ CC6/ CC7 SC5/SC6/SC7 Chemistry** | * Ionic Bonding * Covalent Bonding * Types of Substance | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8F |
|  |
| **A1** | **7** | **CP1/ SP1 Physics** | * Motion | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 9I |
|  |
| **Year 11** | **A1** | **7** | **CB7/SB7 Biology** | * Animal Coordination, Control and Homeostasis | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7C, 9D |
|  |
| **A1** | **7** | **CC8/SC8 Chemistry** | * Acids | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7F |
|  |
| **A1** | **7** | **CP9/ SP10 Physics**  **SP11 Physics** | * Electricity | End off module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7J, 9J |
| * Static Electricity (Phys) |

**Autumn 2 (7 weeks)**

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| **Year 7** | **A2** | **2** | **7B Biology** | * Sexual Reproduction in Animals | End of half term assessment- interleaved topics | * Educake online learning platform * Seneca Learning | GCSE CB3, 9C |
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| **A2** | **2** | **7F Biology** | * Acids & Alkalis | End of half term assessment- interleaved topics | * Educake online learning platform * Seneca Learning | GCSE CC8, 8G |
|  |
| **A2** | **2** | **7J Physics** | * Current & Electricity | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC9, 9J |
|  |
| **Year 8** | **A2** | **2** | **8C Biology** | * Breathing & Respiration | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CB8, 9C |
|  |
| **A2** | **2** | **8G Chemistry** | * Metals and their uses | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC10, CC11, 9E |
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| **A2** | **2** | **8J Physics** | * Light | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | CP4, CP5 |
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| **Year 9** | **A2** | **7** | **CB1/ SB1 Biology** | * Overarching concepts in Biology | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7A, 8A |
|  |
| **A2** | **7** | **CC1/ SC1 Chemistry**  **CC2/ SC2 Chemistry** | * States of Matter | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | CP12, 8I, 7G |
| * Methods of separation and purifying substances |
| **A2** | **7** | **CP3/ SP3 Physics** | * Conservation of Energy | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7I |
|  |
| **Year 10** | **A2** | **7** | **CB4/ SB4 Biology** | * Natural Selection and Genetic Modification | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7D, 9A |
|  |
| **A2** | **7** | **CC5/ CC6/ CC7 SC5/SC6/SC7 Chemistry** | * Ionic Bonding * Covalent Bonding * Types of Substance | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8F |
|  |
| **A2** | **7** | **CP2/ SP2 Physics** | * Forces & Motion | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7K, 9I |
|  |
| **Year 11** | **A2** | **7** | **CB8/SB8 Biology** | * Exchange & transport in animals | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8C,8A, 9C |
|  |
| **A2** | **7** | **CC13/ SC17 Chemistry**  **CC14/ SC18 Chemistry** | * Groups of the periodic table * Rates of reaction | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8F, 9G |
|  |
| **A2** | **7** | **CP9/ SP10 Physics**  **SP11 Physics**  **CP10/ SC12 Physics**  **CP11/ SP13 Physics** | * Electricity * Static Electricity (Phys) * Magnetism & the motor effect * Electromagnetic induction | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7J, 9J, 7L |
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**Spring 1 (7 weeks)**

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| **Year 7** | **Sp1** | **2** | **7C Biology** | * Muscles & Bones | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CB1 |
|  |
| **Sp1** | **2** | **7G Chemistry** | * The Particle Model | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP12, 8I |
| **Sp1** | **2** | **7K Physics** | * Forces | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP2 |
| **Year 8** | **Sp1** | **2** | **8D Biology** | * Unicellular organisms | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7A, GCSE CB1 |
| **Sp1** | **2** | **8H Chemistry** | * Rocks | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC10, CC11, CC17, 9G |
| **Sp1** | **2** | **8K Physics** | * Energy transfers | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP3 |
| **Year 9** | **Sp1** | **7** | **CB2/ SB2 Biology** | * Cells & Control | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7A |
| **Sp1** | **7** | **CC3/ SC3 Chemistry** | * Atomic Structure | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP6, 8F, 7H |
| **Sp1** | **7** | **CP4/ SP4 Physics** | * Waves | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 9K, 8J, 7L |
| **Year 10** | **Sp1** | **7** | **CB5/ SB5 Biology** | * Health, disease and the development of medicines. | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8D, 8A, 9D |
| **Sp1** | **7** | **CC9/ SC9 Chemistry**  **CC10 Chemistry** | * Calculations involving masses * Electrolytic processes | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 9H, 7H |
| **Sp1** | **7** | **CP6/ SP6 Physics** | * Radioactivity | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC3, CP5, 8F |
| **Year 11** | **Sp1** | **7** | **CB9/ SB9 Biology** | * Ecosystems & material cycles | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7D, 8B, 9D |
| **Sp1** | **7** | **CC16/ SC20 Chemistry** | * Fuels | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP3, 8E, |
| **Sp1** | **7** | **CP12/ SC14 Physics**  **CP13/ SP15** | * The particle model * Forces & Matter | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7G, 8I |

**Spring 2 (6 weeks)**

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| **Year 7** | **Sp2** | **2** | **7D Biology** | * Ecosystems | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CB4, 9D |
|  | **2** | **7H Chemistry** | * Atoms, Elements & Molecules | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP1, CP3, 8F |
| **Sp2** | **2** | **7L Physics** | * Sound | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP3, CP4 |
| **Year 8** | **Sp2** | **2** | **8L Physics** | * Earth & Space | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7H, GCSE CC17 |
| **Sp2** | **2** | **9A Biology** | * Genetics & Evolution | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CB3, 9A |
| **Sp2** | **2** | **9E Chemistry** | * Making Materials | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC16 |
| **Year 9** | **Sp2** | **6** | **CB5/ SB5 Biology** | * Health, disease and the development of medicines. | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8D, 8A |
| **Sp2** | **6** | **CC4/SC4 Chemistry** | * The periodic table | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8F |
| **Sp2** | **6** | **CP4/ SP4** | * Waves | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7L, 8J |
| **Year 10** | **Sp2** | **6** | **CB5/ SB5 Biology** | * Health, disease and the development of medicines. | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8D, 8A, 9D |
| **Sp2** | **6** | **CC10/ SC10 Chemistry**  **SC16 Chemistry** | * Electrolytic processes * Chemical cells and fuel cells (Chem) | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7H, 7J |
| **Sp2** | **6** | **CP7/ SP8 Physics**  **SP7 Physics** | * Energy – Forces doing work * Astronomy (Phys) | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP3, 7K  8L |
| **Year 11** | **Sp2** |  | **GCSE exam revision programme Biology** | * Paper 1 topics * Paper 2 topics | GCSE EXAMS | * Educake online learning platform. * Seneca Learning |  |
| **Sp2** |  | **GCSE exam revision programme Chemistry** | * Paper 1 topics * Paper 2 topics | GCSE EXAMS | * Educake online learning platform. * Seneca Learning |  |
| **Sp2** |  | **GCSE exam revision programme Physics** | * Paper 1 topics * Paper 2 topics | GCSE EXAMS | * Educake online learning platform. * Seneca Learning |  |

**Summer 1 (5 weeks)**

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| **Year 7** | **Su1** | **2** | **8A Biology** | * Food & Nutrition | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CB1 |
| **Su1** | **2** | **8E Chemistry** | * Combustion | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC16 |
| **Year 8** | **Su1** | **2** | **9I Physics** | * Forces & Motion | End of half term assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP2 |
| **Su1** | **2** | **9B Biology** | * Plant Growth | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8B, GCSE CB6 |
|  | **Su1** | **2** | **9J Physics** | * Force field & electromagnets | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP10 |
| **Year 9** | **Su1** | **5** | **CB3/SB3 Biology** | * Genetics | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 9A, 7D |
| **Su1** | **5** | **CC15/SC19 Chemistry**  **CC17/ SC21 Chemistry** | * Heat changes in chemical reactions * Earth & atmospheric sciences | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CC16, 8E |
| **Su1** | **5** | **CP5/ SP5 Physics** | * Light & the electromagnetic spectrum | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8J |
| **Year 10** | **Su1** | **55** | **CB6 Biology** | * Plant structures & their functions | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 8B, 9B |
| **Su1** |  | **CC11/ SC11 Chemistry** | * Obtaining & using metals | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | 7H, 8G |
| **Su1** | **5** | **CP7/ SP7 Physics** | * Energy – Forces doing work | End of module assessment- interleaved topics | * Educake online learning platform. * Seneca Learning | GCSE CP3, 7K |
| **Year 11** | **Su1** |  | **GCSE exam revision programme Biology** | * Paper 1 topics * Paper 2 topics | GCSE Exams | * Educake online learning platform. * Seneca Learning |  |
| **Su1** |  | **GCSE exam revision programme Chemistry** | * Paper 1 topics * Paper 2 topics | GCSE Exams | * Educake online learning platform. * Seneca Learning |  |
| **Su1** |  | **GCSE exam revision programme Physics** | * Paper 1 topics * Paper 2 topics | GCSE Exams | * Educake online learning platform. * Seneca Learning |  |

**Summer 2 (6 weeks)**

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| **Year 7** | **Su2** | **2** | **8I Physics**  **Summer exam revision** | * Fluids | End of Year Assessment all topics | * Educake online learning platform. * Seneca Learning | GCSE C12 |
| **Year 8** | **Su2** | **2** | **9F Chemistry**  **Summer Exam Revision** | * Reactivity | End of Year Assessment all topics | * Educake online learning platform * Seneca Learning | GCSE CC10, CC11, 8G |
| **Year 9** | **Su2** | **6** | **CB3/SB3 Biology**  **Summer exam revision** | * Genetics | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | 9A, 7D |
| **Su2** | **6** | **CC17/ SC21 Chemistry**  **Summer exam revision** | * Earth & atmospheric sciences | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | 7H, 8E |
| **Su2** | **6** | **CP5/ SP5 Physics**  **Summer exam revision** | * Light & the electromagnetic spectrum | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | 8J |
| **Year 10** | **Su2** | **6** | **CB6 Biology**  **Summer exam revision** | * Plant structures & their functions | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | 8B, 9B |
| **Su2** | **6** | **CC12/SC12 Chemistry**  **SC15 Chemistry**  **SC13 Chemistry**  **SC14 Chemistry**  **Summer exam revision** | * Reversible reactions * Dynamic Equilibria Calcs (Chem) * Transition Metals (CHEM) * Quantitative Analysis (Chem) | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | GCSE CP4, 8F |
| **Su2** | **6** | **CP8/ SP8 Physics**  **Summer exam revision** | * Energy – Forces & matter. | End of Year assessment- All topics taught. Mixed paper H/F | * Educake online learning platform. * Seneca Learning | 7K, 7I |