**Year 8 Science**

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|  | Autumn 1 | Autumn 2 | | Spring 1 | Spring 2 | | | Summer 1 | | Summer 2 |
| Big Ideas | Biology A – \*Organisms | Chemistry A – \*Matter | | Physics A – \*Energy and forces | Biology B – \*Ecosystem & genes | | | Chemistry B –\*Reactions | | Physics B – \*Electromagnetism |
| Topics | Movement, cells, breathing, digestion, respiration  How does exercise affect the body? (HSW) | Elements, Particle model, Periodic Table, separating mixtures  How does particle size affect how quickly water travels through calcium carbonate? (HSW) | | Energy costs, energy transfer, work, heating & cooling, contact forces, speed, pressure  Which insulation will affect the rate of cooling the most? (HSW) | Interdependence, photosynthesis, variation, evolution, inheritance  Does the size of a seed affect the size of a plant? (HSW) | | | Chemistry in our world: Metals & non-metals, acids & alkalis, chemical energy, types of reactions, earth resources,  Which metal is the most reactive? (HSW) | | Electricity, magnetism, and waves: voltage and resistance, current, electromagnets, magnetism  How does the number of coils affect the strength of an electromagnet? (HSW) |
| Skills | ANALYSE  - Analyse patterns  - Discuss limitations  -Draw conclusions  -Present data | | COMMUNICATE  - Communicate ideas  - Construct explanation  - Justify opinions | | | ENQUIRE  -Collect data  -Devise methods  -Plan variables  -Test hypotheses | | | SOLVE  -Examine consequences  -Review theories  -Evaluate risks | |
| Assessment | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and synoptic end of unit assessment. | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and end of unit assessment. | | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and end of unit assessment. | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and end of unit assessment. | | | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and end of unit assessment. | | Formative assessment every lesson.  Range of learning & skill-based homework.  Practical and end of unit assessment.  END OF YEAR SKILLS EXAM |
| Linked learning | Prior knowledge of life processes, habitats, particles, and energy. End of unit assessments are synoptic assessing content taught throughout the year. Learning components at the start of lessons remind students of prior learning and highlight links to previous topics.  Links with other subjects: Maths – fractions, percentages, graphs, calculating means, use of equations. Food – following methods, importance of nutrition. English – comprehension and literacy skills. PE – the benefits of exercise and organ systems. | | | | | | | | | |
| \*SMSC Links | 253 Provision for the spiritual development of pupils includes developing their:  - sense of enjoyment and fascination in learning about themselves, others, and the world around them,  - Use of imagination and creativity in their learning  254 Provision for the moral development of pupils includes developing their: understanding of the consequences of their behaviour and actions | | | | | | | | | |
| Literacy | Define keywords for basic concepts or scientific terms that relate to phenomena, objects, and their properties.  Write in a style to fit purpose and audience.  Use scientific vocabulary, clear language and well-formed sentences  Read and comprehend scientific methods and text | | | | Numeracy | | Calculate a mean  Read values from graphs  Select relevant data and perform calculations  Estimate values of data  Present data in tables and graphs  Interpret relationships | | | |
| Enrichment | STEM Ambassadors will make visits to school. Themed activities for British Science Week. Space extravaganza week held in collaboration with Science and Technology Facilities Council. | | | | | | | | | |
| Impact | Students will have made a successful transition into secondary science, working independently, with practical dexterity, good organisation, and efficient time management. Students will have developed a solid foundation relating to the fundamental ideas and working scientifically. Science will help students to become logical thinkers and problem solvers with a better understanding of the world around them. Demonstrating resilience and the ability to consider moral and ethical implications of scientific development. | | | | | | | | | |

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| Ways to support student learning in this subject |
| * Encourage the completion of homework. * Encourage discussion of science issues that arise in the news. * Watch science documentaries together. * Discuss science lessons and their progress. * Encourage a positive attitude towards science. |