

**OVERVIEW**

Students follow the AQA GCSE Combined Science course and will gain a thorough grounding in each of the three sciences. Not only will students develop their knowledge and understanding of biology, chemistry and physics but they will enrich their experience by completing practical activities and learning through discovery. Students continue to build on the knowledge and understanding gained from Year 9, studying topics that build in complexity. Lessons include regular retrieval practice and past paper questions to build up recall and application skills. Students are taught by two teachers, each taking 4 lessons a fortnight.

**Autumn**

**Biology**  
*B2 Organisation*  
Digestive system, Enzymes, Practical, Circulatory System, Heart, Blood & Blood vessels, Respiratory System, Adaptations of the lungs.

**Chemistry**  
*C1 Atomic Structure*  
Atomic Structure, development of atomic model, history of periodic table, group 1 elements, group 7 elements.  
*C2 Bonding*  
Ionic Bonding, Reactivity of Metals, Covalent Bonding, Metallic Bonding, Simple molecules, allotropes of carbon.  
*C3 Quantitative Chemistry*  
Relative Formula Mass, Reacting Masses, Balancing equations

**Assessment:**  
End of topic test for each unit.

**Physics**  
*P1 Energy*  
Energy pathways & transfers, Kinetic Energy, Gravitational Potential Energy, Elastic Energy, Renewable and non-renewable energy sources.

**Spring**

**Biology**  
*B3 Infection*  
Pathogens, communicable Diseases, Viruses, Bacteria, Fungi and Protists, Immune Response, Vaccinations, Clinical Trials, Monoclonal antibodies, Plant disease

**Chemistry**  
*C4 Chemical Changes*  
Reactivity of metals, Reactions of acids, Displacement, forming salts, Electrolysis

**Physics**  
*P2 Electricity*  
Circuits & symbols, series circuits, parallel circuits, resistance equation, resistance of a wire investigation, wiring a plug, National Grid

**Assessment:**  
Mid-Year exam paper based on topics covered so far.  
End of topic test for each unit.

**Summer**

**Biology**  
*B4 Bioenergetics*  
Photosynthesis, Adaptations of a leaf, Respiration, Effects of exercise on the body.  
*B7 Biodiversity*  
Abiotic and biotic factors, adaptations, estimating populations, sustainability, nutrient cycles and global warming.

**Chemistry**  
*C5 Energy Changes*  
Exothermic and endothermic reactions, energy change investigations, energy level diagrams, calculating bond energy.

**Physics**  
*P4 Atomic Structure*  
Atomic Structure, History of the atom, Alpha, Beta and Gamma radiation, Half life, irradiation & contamination.  
*P7 Magnetism*  
Magnetic fields, Motor effect, Electric motors.

**Assessment:**  
End of Year exam will be 3 x Paper 1  
End of topic test for each unit.

- Useful resources for supporting your child at home:**
- CGP Combined Science Revision Guide
  - BBC Bitesize revision pages
  - Youtube: Cognito Science lessons

**Homework:**  
Weekly Carousel Quiz will be set and emailed to all students and parents/carers email address'.