Department Title:

Science

Department Vision:

The aim of the department is to provide the foundations of the material world.. The role of scientific understanding and its impact on our lives. All learners are taught essential aspects of the knowledge, methods, process and uses of science. The application of key in science and they can be applied in its wider context in the complex and diverse world around us.

Year 7:

The students follow the Activate Scheme of Work in Year 7. The curriculum is designed to encourage an enjoyment and passion for science; encourage independent thinking; challenge scientific misconceptions; develop scientific method skills, and introduce key scientific concepts that can be developed in Year 8 and expanded upon in KS4.

Year 8:

The students follow the Activate Scheme of work in Year 8. The curriculum is designed to: encourage an enjoyment and passion for science; encourage independent thinking; challenge scientific misconceptions; further develop scientific method skills, and expand upon key scientific concepts from Year 7. Students are also introduced to more advanced topics towards the end of Year 8 to help prepare them for the rigor of KS4.

Year 9:

Students study OCR GCSE Gateway Science Suite(9-1) Specifications A:J247-J250.

Biology(9-1) J247

Unit 1: Cell Structures, Cell Activity, Respiration and Photosynthesis. Unit 2: Supplying the cells and the challenges of size.

Chemistry(9-1) J248

Unit 1: Particle Model and Atomic Structure. Unit 2: Bonding, Properties of Materials and Purity and Separating mixtures.

Physics(9-1) J249

Unit 1: Particle Model, Changes of State and Pressure. Unit 2: Motion, Newton's Laws, and Forces in Action.

Teaching of practical skills is integrated with the theoretical topics and they are assessed through the written papers.

Year 10:

Biology(9-1) J247

Unit 3: Nervous system, Endocrine system and Homeostasis. Unit 4: Ecosystems. Unit 5: Inheritance, Natural Selection and Evolution.

Chemistry(9-1) J248

Unit 3: Chemical Reactions, Energetics, Types of Chemical Reactions and Electrolysis. Unit 4: Predicting and Identifying Reactions and Products. Unit 5: Monitoring and Controlling Chemical Reactions.

Physics(9-1) J249

Unit 3: Electricity. Unit 4: Magnetism. Unit 5: Waves in Matter.

Teaching of practical skills is integrated with the theoretical topics and they are assessed through the written papers.

Year 11:

Students continue to study GCSE courses in Biology, Chemistry, Physics and Combined Sciences.

Biology(9-1) j247

Unit 6: Monitoring and Maintaining Health, Feeding the Human Race, Monitoring and Maintaining the Environment.

Chemistry(9-1)248

Unit 6: Global Challenges Including Organic Chemistry

Physics(9-1)249

Unit 6: Radioactivity. Unit 7: Energy. Unit 8: Global Challenges

Teaching of practical skills is integrated with the theoretical topics and they are assessed through the written papers.

Sixth Form:

A-Levels are offered in Biology (Salter-Nuffield/9BN0), OCR A Chemistry (H432) and OCR A Physics (H556)

Biology: Four topics are taught in Year 12 (Lifestyle, Health and Risk, Genes and Health, Voice of the Genome and Biodiversity) followed by a further four in Year 13 (Run for Your Life, Grey Matter, On the Wild Side, Immunity, Forensics and Grey Matter).

Chemistry: In Y12, the modules are Practical Skills, Foundation in Chemistry, and the Periodic Table and Energy, Core Organic Chemistry. In Y13, they are Physical Chemistry and Transition Elements, Organic Chemistry and Analysis are covered.

Physics: The modules taught in Y12 are Foundations of Physics, Forces & Motion and Electrons, Waves & Photons. In Y13, the modules are Newtonian World & Astrophysics and Particles & Medical Physics.

Assessment:

KS3: There is a test at the end of each unit and there are tests at the end of Year 7 and 8.

KS4: Students are assessed at least half-termly in each of the separate subjects and there is a trial exam in the autumn term of Year 11.

KS5: Students are assessed throughout and at the end of each module and there is a trial exam at the end of Year 12 for each of the subjects.

Related Careers:

Biology: Biotechnology, food industry, nutrition, medicine, dentistry, nurse, veterinarian, research, teacher, lecturer.

Chemistry: Courses that require chemistry, include: medicine, dentistry, chemical engineering, pharmaceutical sciences, pharmacology, fine chemicals, as well as numerous other industries (e.g. metallurgy, paints, glass, cement, fabrics, catalysts, fuel and petrochemicals).

Physics: Architecture, astrophysics, aeronautics, nuclear physics, electronics, computing, engineering, pilot, sports scientist, banker, geologist.