Craig Ormerod Associates Ltd.

Subject Overview: Science (KS4)

For KS4 Science pupils, one of two curriculum pathways is chosen based on which is most appropriate. Pupils' performance during KS3 will be the most reliable indicator for this selection. The two pathways are *Combined Science* and *Triple Science*, each of which has been designed to allow students to develop greater insight into how science works and to give them a greater appreciation of its relevance to their daily lives.

Each pathway follows its respective AQA Examination Board curriculum:

- *Combined Science* pupils follow the GCSE Combined Science: Trilogy Specification (Course Code: 8464) and will achieve two GCSE grades at the end of the course when successful.

- *Triple Science* pupils sit individual GCSE exams in Biology (8461), Chemistry (8462) and Physics (8463) and will receive a separate GCSE for each.

All pupils receive a minimum of five hours of curriculum time per week. *Triple Science* pupils in Year 10 receive six. Pupils receive regular feedback from teachers and peers, both verbal and written. Pupils are encouraged to self-assess and peer-assess their work during lessons, and the information gleaned is used to inform future planning. Pupils are also guided to review test outcomes in terms of their respective strengths and weaknesses when measured against their course's *assessment objectives*, which are:

AO1: To demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.

AO2: To apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.

AO3: To analyse information and ideas in order to: interpret and evaluate; make judgements and draw conclusions; develop and improve experimental procedures.

All GCSE examinations are taken at the end of Year 11. The content is as follows:

COMBINED SCIENCE *(all exams are 1 hour and 15 minutes long):*

Biology Paper 1:

- Cell biology
- Organisation
- Infection and response
- Bioenergetics

Chemistry Paper 1:

- Atomic structure and the periodic table
- Bonding, structure and the properties of matter
- Quantitative chemistry
- Chemical changes
- Energy changes

Physics Paper 1:

- Energy
- Electricity
- Particle model of matter
- Atomic structure

Biology Paper 2:

- Homeostasis and response
- Inheritance
- Variation and evolution
- Ecology

Chemistry Paper 2:

- Rate and extent of chemical change
- Organic chemistry
- Chemical analysis
- Chemistry of the atmosphere
- Using resources

Physics Paper 2:

- Forces
- Waves
- Magnetism and electromagnetism

TRIPLE SCIENCE *(all exams are 1 hour and 45 minutes long):*

GCSE Biology Paper 1:

- Cell biology
- Organisation
- Infection and response
- Bioenergetics

GCSE Biology Paper 2:

- Homeostasis and response
- Inheritance
- Variation and evolution

- Ecology

GCSE Chemistry Paper 1:

- Atomic structure and the periodic table
- Bonding, structure and the properties of matter
- Quantitative chemistry
- Chemical changes
- Energy changes

GCSE Chemistry Paper 2:

- Rate and extent of chemical change
- Organic chemistry
- Chemical analysis
- Chemistry of the atmosphere
- Using resources

GCSE Physics Paper 1:

- Energy
- Electricity
- Particle model of matter
- Atomic structure

GCSE Physics Paper 2:

- Forces
- Waves
- Magnetism and electromagnetism

Questions in *GCSE Physics Paper 2* may draw on pupils' understanding of energy changes and transfer due to heating, mechanical and electrical operations, as well as the concept of energy conservation as covered by the *Energy* and *Electricity* topics in *GCSE Physics Paper 1*.