

Department.....Science.....

<u>Year 7</u>
<p>In year 7 students develop both knowledge and skills essential for their progress in Science. Students study across the three subjects of Biology, Chemistry and Physics, covering topics such as cells and organs, sound, acid and alkali reactions and forces.</p> <p>Students are given opportunities to explore and investigate independently, for example, in planning, carrying out and analysing results from experiments, and undertaking research tasks.</p>
<u>Year 8</u>
<p>In year 8, students build on their understanding and skill development in year 7. Students study a wide range of Science topics, such as microbes and disease, elements and compounds, and light and sound. Students are given opportunities to develop higher skills such as analysis, evaluation and reasoning, through the use of varied activities, including experiment investigations. We push students to ask 'why?', so that they cannot just describe scientific ideas, but explain them too.</p>
<u>Year 9</u>
<p>This course is focused on scientific and cognitive skills to bridge the gap between KS3 and KS4. Students' development will enable them to competently conduct a complete scientific investigation from research through to analysis of data and evaluation. CREST awards <a href="http://www.britishtscienceassociation.org/crest">http://www.britishtscienceassociation.org/crest</a> and AQA GCSE Investigative Skills Assessments will assess progress while boosting each students' record of achievement.</p>
<u>Year 10 Core Science</u>
<p>Syllabus website link: <a href="http://filestore.aqa.org.uk/subjects/AQA-4405-W-SP-14.PDF">http://filestore.aqa.org.uk/subjects/AQA-4405-W-SP-14.PDF</a> Past papers web link: <a href="http://www.aqa.org.uk/subjects/science/gcse/science-a-4405/past-papers-and-mark-schemes">http://www.aqa.org.uk/subjects/science/gcse/science-a-4405/past-papers-and-mark-schemes</a></p> <p>Students in Year 10 All follow Science GCSE subjects from AQA. This may be Core Science (Science A) or Triple Science – Starting with Biology Chemistry or Physics. In Core Science Biology1, Chemistry 1, Physics 1 and the Controlled Assessment (Unit 4).Each are worth 25% of the year 10 Science GCSE.</p>
<u>Year 11 – Additional Science</u>
<p>Syllabus website link: <a href="http://filestore.aqa.org.uk/subjects/AQA-ADDSCI-W-SP-14.PDF">http://filestore.aqa.org.uk/subjects/AQA-ADDSCI-W-SP-14.PDF</a> Past papers web link: <a href="http://www.aqa.org.uk/subjects/science/gcse/additional-science-4408/past-papers-and-mark-schemes">http://www.aqa.org.uk/subjects/science/gcse/additional-science-4408/past-papers-and-mark-schemes</a></p> <p>Students in Year 11 All follow Science GCSE subjects from AQA. This may be Core Science (Science A) Additional Science or Triple Science –Biology Chemistry or Physics Biology2, Chemistry 2, Physics 2 and the Controlled Assessment (Unit 4).Each are worth 25% of the year 11 Science GCSE.</p>
<u>Year 12 - Physics</u>
<p>The Edexcel specification and past papers can be found here: <a href="http://www.edexcel.com/quals/gce/gce08/physics/pages/default.aspx">http://www.edexcel.com/quals/gce/gce08/physics/pages/default.aspx</a></p> <p>The AS Physics course includes topics such as mechanics, materials, electricity, light and waves. You will develop your understanding of these areas through frequent class practical work, study of current applications and independent consolidation. Your coursework will involve an experiment based on a contemporary case-study in physics. An enthusiasm for researching physics concepts is essential, and problem solving and resilience are great assets as tasks become open-ended.</p>
<u>Year 13 - Physics</u>
<p>The Edexcel specification and past papers can be found here: <a href="http://www.edexcel.com/quals/gce/gce08/physics/pages/default.aspx">http://www.edexcel.com/quals/gce/gce08/physics/pages/default.aspx</a></p> <p>In A2 Physics you will build on your skills and knowledge from AS through learning about electric and magnetic fields, fundamental particles, earthquakes and seismic waves, and space. The coursework in this year requires further investigative skills through planning, implementing</p>

and analysing an experiment. The department has recently increased to our inventory of data logging equipment and has organised the re-design of a room specifically for your independent study.

#### Year 12 Chemistry

Syllabus website link [www.ocr.org.uk/qualifications/by-subject/chemistry](http://www.ocr.org.uk/qualifications/by-subject/chemistry)

Past papers web link [www.ocr.org.uk/i-want-to/download-pastpapers/index.aspx](http://www.ocr.org.uk/i-want-to/download-pastpapers/index.aspx)

AS Units: Unit F321: *Atoms, Bonds and Groups*, Atoms and reactions, Electrons, bonding and structure, The Periodic Table. Unit F322: *Chains, Energy and Resources*, Basic concepts and hydrocarbons, Alcohols, halogenoalkanes and analysis, Energy, Resources, Unit F323: *Practical Skills in Chemistry 1* This AS (practical skills) unit is teacher assessed and externally moderated by OCR. Candidates are assessed on one task from each of the following categories: qualitative, quantitative and evaluative tasks.

#### Year 13

Syllabus website link <http://www.ocr.org.uk/>

Past paper web link: <http://www.ocr.org.uk/qualifications/as-a-level-gce-chemistry-a-h034-h434/>

A2 builds upon the chemical concepts that have been developed during AS Chemistry.

This unit consists of three teaching modules: Module 1: Rings, Acids and Amines

Arenes, Carbonyl Compounds, Carboxylic Acids and Esters, Amines. Module 2: Polymers and Synthesis. Amino Acids and Proteins, Polyesters and Polyamides Synthesis Module 3: Analysis, Chromatography Spectroscopy

Candidates are expected to apply knowledge, understanding and other skills gained in this unit to new situations and/or to solve related problems.

#### Year 12 Biology

Syllabus website link: <http://www.edexcel.com/quals/gce/gce08/biology/Pages/default.aspx>

Past papers web link: <http://www.edexcel.com/quals/gce/gce08/biology/Pages/default.aspx>

We subscribe to a website (<http://www.snabonline.com>) that accompanies the course and we have set up an ID for anyone who would like to look at this: Username: guest3xar Password: Biology.

In AS we study topics such as Cystic Fibrosis, Heart and Circulation, Cardiovascular Disease, Genetics and Biodiversity.

#### Year 13 Biology

Syllabus website link: <http://www.edexcel.com/quals/gce/gce08/biology/Pages/default.aspx>

Past paper web link: <http://www.edexcel.com/quals/gce/gce08/biology/Pages/default.aspx>

We subscribe to a website (<http://www.snabonline.com>) that accompanies the course and we have set up an ID for anyone who would like to look at this: Username: guest3xar Password: Biology.

In A2 we study topics such as Ecosystems, Adaptations, Infection, Immunity, Forensics, Muscle Structure and Grey Matter.

For more information please e-mail: [kwhiteh@ravensbourne.info](mailto:kwhiteh@ravensbourne.info)