



**Sir John Cass Red Coat School Programme of Study – Key Stage 5**

**Subject: Biology**

Year 12	Year 13
<p><b><u>Topics Covered/ Areas of Focus:</u></b></p> <p><b>Paper 1: The Natural Environment and Species Survival (Paper code: 9BN0/01)</b></p> <ul style="list-style-type: none"> <li>● Topic 1: Lifestyle, Health and Risk</li> <li>● Topic 2: Genes and Health</li> <li>● Topic 3: Voice of the Genome</li> </ul> <p>Topic 4: Biodiversity and Natural Resources</p>	<p><b><u>Topics Covered/ Areas of Focus:</u></b></p> <ul style="list-style-type: none"> <li>● Topic 5: On the Wild Side</li> <li>● Topic 6: Immunity, Infection and Forensics</li> <li>● Topic 7: Run for your Life</li> <li>● Topic 8: Grey Matter.</li> </ul>
<p><b><u>Skills Development &amp; Expected Progress:</u></b></p> <p>Development of practical competency for Biology. Skills of planning, implementing, analysis and evaluation. Pupils will develop quantitative techniques, including use of volumetric apparatus. Pupils develop arguments on ethical issues. Pupils must meet or exceed their minimum target grades in the End-of-Year 1 Exam in order to progress to Year 13.</p>	<p><b><u>Skills Development &amp; Expected Progress:</u></b></p> <p>Skills of planning, implementing, analysis and evaluation are continued and further developed in Year 13. More advanced practical activities will allow pupils to enhance these essential skills in preparation for undergraduate studies. Pupils develop analytical skills using various statistical tests. Pupils must meet or exceed their minimum target grades in the End-of-Year Mock Exams in order to be entered for the External Exams.</p>
<p><b><u>Assessment:</u></b></p> <p>Internal assessment</p> <p>Baseline entry test into first year</p> <p>Modular end of topic tests and assessed homework</p> <p>Core practical assessments</p> <p>End of year test</p>	<p><b><u>Assessment:</u></b></p> <p><b><u>Paper 1: The Natural Environment and Species Survival (Paper code: 9BN0/01)</u></b> Externally assessed Availability: May/June First assessment: 2017 33.33% of the total qualification</p> <ul style="list-style-type: none"> <li>● Assessment is 2 hours.</li> <li>● The paper consists of 100 marks.</li> <li>● The paper may include multiple-choice, short open, open-response, calculations and extended writing questions.</li> </ul>

The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6 in specification: Mathematical skills and exemplifications*).

**Paper 2: Energy, Exercise and Co-ordination (Paper code: 9BN0/02)**

Externally assessed

Availability: May/June

First assessment: 2017

33.33% the total qualification

- Assessment is 2 hours.
- The paper consists of 100 marks.
- The paper may include multiple-choice, short open, open-response, calculations and extended writing questions.

The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6 in specification: Mathematical skills and exemplifications*).

**Paper 3: General and Practical Applications in Biology**

Externally assessed

Availability: May/June

First assessment: 2017

33.33% of the total qualification

- Assessment is 2 hours.
- The paper consists of 100 marks.
- The pre-released scientific article will underpin one section of the paper.
- The paper will include synoptic questions that may draw on two or more different topics.

The paper will include questions that target mathematics at Level 2 or above (see *Appendix 6: Mathematical skills and exemplifications*).

**Science Practical Endorsement (Paper code: 9BN0/04)**

Internally assessed and externally moderated by Pearson Edexcel. Availability: May/June

First assessment: 2017

Performance will be assessed by teachers against common

	<p>assessment criteria that will be consistent across exam boards.</p> <p>Exam boards have developed draft common practical assessment criteria; these are set out on pages 29-30. These criteria will be trialled in the autumn of 2014 and spring 2015 to ensure they can be applied consistently and effectively.</p> <p>Specifications will be updated to include the final version of common practical assessment criteria in spring 2015.</p>
<p><b><u>Literacy:</u></b></p> <p>Access, manage, integrate, evaluate, construct and communicate, Extended writing, practical reports</p>	
<p><b><u>Numeracy:</u></b></p> <ul style="list-style-type: none"> <li>• Geometry and trigonometry- calculating the circumferences surface areas and volume of regular shapes.</li> <li>• Drawing graphs</li> <li>• Standard form, percentage, decimal, fractions and using ratios</li> <li>• Constructing and interpreting frequency tables and diagrams, bar charts and histograms.</li> <li>• Data handling</li> <li>• Algebra/ solving equations/ re-arranging formulas</li> </ul>	<p><b><u>Numeracy:</u></b></p> <ul style="list-style-type: none"> <li>• Drawing graphs of two variables</li> <li>• Algebra/ solving equations/ re-arranging formulas</li> <li>• Standard form, percentage, decimal, fractions and using ratios.</li> <li>• Geometry and trigonometry- calculating the circumferences, surface areas and volumes of regular shapes.</li> <li>• logarithmic functions</li> <li>• Significant figures</li> <li>• Constructing and interpreting frequency tables and diagrams, bar charts and histograms.</li> <li>• Data handling.</li> </ul>
<p><b><u>ICT:</u></b></p> <p>Presentations, animations, access, manage, integrate, evaluate, construct and communicate</p>	
<p><b><u>Life in Modern Britain:</u></b></p> <p>Genetic screening for genetic conditions.</p> <p>Relationship-building skills – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.</p>	<p><b><u>Life in Modern Britain:</u></b></p> <p>Development of personalised medicine and the social, moral and ethical issues this raises.</p> <p>Relationship-building skills – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.</p>

<p><b><u>SMSC:</u></b></p> <p>The social and ethical issues surrounding the genetic screening for genetic conditions.</p> <p>Is it ethical to use stem cells for medical purposes?</p>	<p><b><u>SMSC:</u></b></p> <p>Ethical positions relating to whether the use of performance-enhancing substances by athletes is acceptable.</p> <p>Ethical issues raised by the Human Genome Project and the risks and benefits of using genetically modified organisms</p> <p>Moral and ethical issues relating to the use of animals in medical research</p> <p>Development of personalised medicine and the social, moral and ethical issues this raises.</p>
<p><b><u>Meeting the needs of individual students &amp; Additional Support:</u></b></p> <p>Extension class, one-to-one sessions with academic tutors.</p>	
<p><b><u>Extra-Curricular Activities &amp; Club:</u></b></p> <p>Extension classes</p> <p>Saturday booster sessions</p> <p>Lecture at imperial college London, UCL, Kings college London.</p> <p>Work experience/ voluntary work at hospitals. Taster courses in medicine at Kings college London. Practice interview and tips for medical school at Imperial college London (POTMED workshop). Opportunities at Eton College.</p>	
<p><b><u>Independent Study/ Homework:</u></b></p> <p>Assessed tasks using online interactive software, weekly assessed homework topic and skill based</p>	
<p><b><u>Resources for Learning Support and VLE:</u></b></p> <p>Resources and tasks shared on Firefly</p>	