



## Year 9 Curriculum Guide

Subject: **Science**

Subject Leader: **Mr Singh**

### Method of assessment

Students will have formal assessments throughout the course to cover contents and skills at the end of every topic. There will be regular homework which will have opportunities to read up on topics, to review and consolidate on the concepts covered in topics. There will be termly assessments, and these will comprise of exam-style questions. At the end of the year all students will have a final assessment to ascertain their levels for the subject in terms of their understanding, application of concepts and analytical skills.

### Overview

	Autumn Term	Spring Term	Summer Term
1st Half	<b>Biology:</b> <b>Cells and organisation</b> <b>B1 – Cell structure and transport</b> <ul style="list-style-type: none"> <li>- What are cells and how are they organised?</li> <li>- How are cells specialised?</li> <li>- How do cells transport and exchange substances?</li> </ul> <b>Chemistry:</b> <b>Atoms, bonding and moles</b> <b>C1 – Atomic structure</b> <ul style="list-style-type: none"> <li>- What is the structure of atoms?</li> <li>- How atoms were discovered</li> <li>- How substances can be separated</li> <li>- Using chemical equations</li> </ul>	<b>Biology:</b> <b>Cells and organisation</b> <b>B3 – Organisation and the digestive system</b> <ul style="list-style-type: none"> <li>- The interaction between tissues and organs</li> <li>- How the digestive system is organised and how it works</li> <li>- The action of enzymes</li> </ul> <b>Chemistry:</b> <b>Atoms, bonding and moles</b> <b>C3 – Structure and Bonding</b> <ul style="list-style-type: none"> <li>- What are the states of matter?</li> <li>- The types of bonding between atoms and ions</li> <li>- Bonding in metals</li> <li>- Giant covalent structures</li> </ul> <b>P2 – Energy transfer by heating</b> <ul style="list-style-type: none"> <li>- How energy is transferred</li> <li>- What is Specific Heat Capacity?</li> <li>- How insulation is used in buildings</li> </ul>	<b>Chemistry:</b> <b>Atoms, bonding and moles</b> <b>C4 – Chemical calculations</b> <ul style="list-style-type: none"> <li>- Calculations of relative masses</li> <li>- Working out concentrations</li> </ul> <b>P4 – Electrical circuits</b> <ul style="list-style-type: none"> <li>- Calculating current, charge, Voltage and Resistance</li> <li>- Relationship between Potential difference and resistance</li> <li>- Differences in parallel and series circuits</li> </ul>

2nd half	<p><b>Biology:</b>  <b>Cells and organisation</b>  <b>B2 – Cell division</b></p> <ul style="list-style-type: none"> <li>- How and why cells divide?</li> </ul> <p><b>Chemistry:</b>  <b>Atoms, bonding and moles</b>  <b>C2 – The Periodic Table</b></p> <ul style="list-style-type: none"> <li>- How the Periodic table was developed</li> <li>- How atoms are arranged in the table</li> <li>- Trends in Group 1 and 7 elements</li> </ul> <p><b>Physics:</b>  <b>P1</b>  <b>Energy and energy resources</b></p> <ul style="list-style-type: none"> <li>- What is energy?</li> <li>- Relationship between Energy and work</li> <li>- Gravitational and kinetic energy</li> <li>- Energy and efficiency</li> <li>- Energy and power</li> </ul>	<p><b>Biology:</b>  <b>Cells and organisation</b>  <b>B4 – Organising animals and plants</b></p> <ul style="list-style-type: none"> <li>- What constitutes the circulatory system</li> <li>- How are plants adapted for transport</li> <li>- How plants lose water</li> </ul> <p><b>P3 – Energy resources</b></p> <ul style="list-style-type: none"> <li>- What are the big issues with energy?</li> <li>- What are alternative energy resources?</li> <li>- Environmental effects from energy production</li> </ul>	<p><b>Biology:</b>  <b>Cells and organisation</b>  <b>B5 – Communicable diseases</b></p> <ul style="list-style-type: none"> <li>- What are pathogens?</li> <li>- Viral, bacterial and fungal diseases</li> <li>- How the body defends against invaders</li> <li>- How are immune responses initiated?</li> </ul>
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**Text Book/Reference/Resource guide:**

- [www.kerboodle.com](http://www.kerboodle.com) – access to digital book and other resources
- CGP Revision guides for Science (AQA)
- AQA examination board (<http://www.aqa.org.uk/subjects/science/gcse>) for sample materials and syllabus
- <http://www.bbc.co.uk/education/subjects/zk26n39>
- <http://www.s-cool.co.uk/>
- AQA GCSE Biology/Chemistry/Physics Text books

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