



**Highsted Grammar School**  
**Spiritual, Moral, Social & Cultural Mapping**

**Subject: Chemistry**

**Year: 9**

<b>Strand</b>	<b>Explanation of provision</b>	<b>Term 1</b>	<b>Term 2</b>	<b>Term 3</b>	<b>Term 4</b>	<b>Term 5</b>	<b>Term 6</b>
<b>Spiritual</b>	<ul style="list-style-type: none"> <li>ability to be reflective about their own beliefs (religious or otherwise) and perspective on life</li> <li>knowledge of, and respect for, different people's faiths, feelings and values</li> <li>sense of enjoyment and fascination in learning about themselves, others and the world around them</li> <li>use of imagination and creativity in their learning</li> <li>willingness to reflect on their experiences</li> </ul>	<i>Atomic structure – the world around them</i>	<i>Periodic table – Different beliefs, creativity (design your own element)</i>	<i>Creativity – Making models of ionic compounds</i>	<i>Metals and nanoparticles – World around them &amp; reflecting on their experiences</i>	<i>Conservation of mass – The world around them</i>	<i>Gas calculations – the world around them &amp; reflecting on own experiences</i>
<b>Moral</b>	<ul style="list-style-type: none"> <li>ability to recognise the difference between right and wrong and to readily apply this understanding in their own lives, and to recognise legal boundaries and, in doing so, respect the civil and criminal law of England</li> <li>understanding of the consequences of their behaviour and actions</li> <li>interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues</li> </ul>	<i>Investigating different opinions on the models of the atoms. Scientific bias towards men in history</i>	<i>Investigating different opinions on structure of the periodic table. Scientific bias towards men throughout history. Risk assessment – consequences of behaviour.</i>	<i>Investigating different opinions on structure of the ionic compounds. Scientific bias towards men throughout history. Risk assessment – consequences of behaviour.</i>	<i>Behaviour &amp; actions – Why do we use particular metals for particular uses. Ethical issues with using nanoparticles in sun creams and cosmetics. Risk assessment – consequences of behaviour.</i>	<i>Risk assessment – consequences of behaviour.</i>	<i>Atom economy – less waste, morally why should we strive for high atom economy. Risk assessment – consequences of behaviour.</i>
<b>Social</b>	<ul style="list-style-type: none"> <li>use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds</li> <li>willingness to participate in a variety of communities and social settings, including by volunteering, cooperating well with others and being able to resolve conflicts effectively</li> <li>acceptance of and engagement with the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs. They will develop and demonstrate skills and attitudes that will allow them to participate fully in and contribute positively to life in modern Britain</li> </ul>	<i>Working in groups to create atomic structures</i>	<i>Working in groups to carry out separation techniques practicals and challenge</i>	<i>Working in groups to create models</i>	<i>Working in groups to complete structure determination challenge</i>	<i>Working in groups to carry out practical work</i>	<i>Working in groups to carry out practical work</i>



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<b>Cultural</b>	<ul style="list-style-type: none"> <li>• understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and that of others</li> <li>• understanding and appreciation of the range of different cultures in the school and further afield as an essential element of their preparation for life in modern Britain</li> <li>• ability to recognise, and value, the things we share in common across cultural, religious, ethnic and socio-economic communities</li> <li>• knowledge of Britain’s democratic parliamentary system and its central role in shaping our history and values, and in continuing to develop Britain</li> <li>• willingness to participate in and respond positively to artistic, musical, sporting and cultural opportunities</li> <li>• interest in exploring, improving understanding of and showing respect for different faiths and cultural diversity and the extent to which they understand, accept, respect and celebrate diversity. This is shown by their respect and attitudes towards different religious, ethnic and socio-economic groups in the local, national and global communities</li> </ul>	<i>Different cultures influencing development of the model of the atom</i>	<i>Periodic table – symbols of elements deriving from different languages. Use of it as a universal language to be accessible to different cultures.</i>	<i>The international language of scientific discovery</i>	<i>Cultural – development and uses of nanoparticles to suit modern day life &amp; technology in Britain</i>	<i>Cross-cultural awareness of universal truths in conservation of mass</i>	<i>Peer-to-peer review of gas calculations in the scientific community</i>



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**Subject: Chemistry**

**Year: 10**

Strand	Explanation of provision	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
<b>Spiritual</b>	<ul style="list-style-type: none"> <li>ability to be reflective about their own beliefs (religious or otherwise) and perspective on life</li> <li>knowledge of, and respect for, different people's faiths, feelings and values</li> <li>sense of enjoyment and fascination in learning about themselves, others and the world around them</li> <li>use of imagination and creativity in their learning</li> <li>willingness to reflect on their experiences</li> </ul>	<i>Chemical changes – World around them – acids &amp; alkalis in household items &amp; reactivity of metals</i> <i>Imagination – Mining business activity</i>	<i>Electrolysis – World around them – extracting aluminium</i> <i>Creativity – electroplating coins</i>	<i>Energy changes – Reflect on experiences of using chemical cells.</i> <i>Fascination – making handwarmers.</i>	<i>Rates – Fascination – practical work.</i> <i>Reflect on experiences of surface area and temperature affecting rates of reactions in daily life.</i>	<i>Equilibrium – Reflect on their own experiences of reversible reactions</i>	<i>Organic – Fascination – learning about the world around them where petrol comes from, crude oil etc.</i> <i>Reflect on own uses of hydrocarbons.</i>
<b>Moral</b>	<ul style="list-style-type: none"> <li>ability to recognise the difference between right and wrong and to readily apply this understanding in their own lives, and to recognise legal boundaries and, in doing so, respect the civil and criminal law of England</li> <li>understanding of the consequences of their behaviour and actions</li> <li>interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues</li> </ul>	<i>Ethical issues with the mining industry.</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Is it right to extract metals from the Earth still? Or should we recycle.</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Risk assessment – consequences of behaviour.</i> <i>Consequences of using reusable versus disposable handwarmers.</i> <i>Incomplete combustion in boilers.</i>	<i>Risk assessment – consequences of behaviour.</i>	<i>Ethical issues with compromising conditions in Haber process to help environment and for safety</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Risk assessment – consequences of behaviour.</i> <i>Ethical issues behind using crude oil for fuels or are there alternatives.</i> <i>Incomplete combustion in boilers – should all homes have carbon monoxide detectors?</i>
<b>Social</b>	<ul style="list-style-type: none"> <li>use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds</li> <li>willingness to participate in a variety of communities and social settings, including by volunteering, cooperating well with others and being able to resolve conflicts effectively</li> <li>acceptance of and engagement with the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs. They will develop and demonstrate skills and attitudes that will allow them to participate fully in and contribute positively to life in modern Britain</li> </ul>	<i>Socio-economic – conditions of miners.</i> <i>Working in groups to make salts.</i>	<i>Working in groups to carry out electrolysis.</i>	<i>Working in groups to carry out practicals.</i>	<i>Working in groups to complete practical work</i>	<i>Working in groups to carry out practical work</i>	<i>Working in groups to carry out practical work</i>



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<b>Cultural</b>	<ul style="list-style-type: none"> <li>• understanding and appreciation of the wide range of cultural influences that have shaped their own heritage and that of others</li> <li>• understanding and appreciation of the range of different cultures in the school and further afield as an essential element of their preparation for life in modern Britain</li> <li>• ability to recognise, and value, the things we share in common across cultural, religious, ethnic and socio-economic communities</li> <li>• knowledge of Britain's democratic parliamentary system and its central role in shaping our history and values, and in continuing to develop Britain</li> <li>• willingness to participate in and respond positively to artistic, musical, sporting and cultural opportunities</li> <li>• interest in exploring, improving understanding of and showing respect for different faiths and cultural diversity and the extent to which they understand, accept, respect and celebrate diversity. This is shown by their respect and attitudes towards different religious, ethnic and socio-economic groups in the local, national and global communities</li> </ul>	<p><i>Gold rush in America.</i></p> <p><i>Countries with mines and how they are affected by these industries.</i></p>	<p><i>Why do we extract metals in modern Britain.</i></p> <p><i>Why are we developing techniques to extract metals from lower grade ores.</i></p>	<p><i>Where we use endo and exothermic reactions in modern British life i.e. to heat our homes and cook our food.</i></p>	<p><i>Response of science across cultures to similar chemical processes</i></p>	<p><i>Haber process to aid the production of fertilisers, use and importance of fertilisers in modern Britain</i></p>	<p><i>The uses of hydrocarbons in modern Britain i.e. petrol, diesel, kerosene.</i></p>



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<b>Spiritual</b>	<ul style="list-style-type: none"> <li>ability to be reflective about their own beliefs (religious or otherwise) and perspective on life</li> <li>knowledge of, and respect for, different people's faiths, feelings and values</li> <li>sense of enjoyment and fascination in learning about themselves, others and the world around them</li> <li>use of imagination and creativity in their learning</li> <li>willingness to reflect on their experiences</li> </ul>	<i>Organic chemistry</i> <i>Reflect on own uses of chemical compounds</i> <i>Fascination – being a 'nose' and making esters</i>	<i>Chemical analysis</i> <i>Fascination – fireworks and flame tests.</i> <i>Carrying out gas tests.</i>	<i>Chemistry of the atmosphere</i> <i>Reflection of own carbon footprint and how it can be reduced.</i>	<i>Using resources</i> <i>Reflection on own use of resources.</i> <i>How is our water treated.</i>	<i>Revision</i> <i>Reflecting on own experiences – where are gaps.</i>	
<b>Moral</b>	<ul style="list-style-type: none"> <li>ability to recognise the difference between right and wrong and to readily apply this understanding in their own lives, and to recognise legal boundaries and, in doing so, respect the civil and criminal law of England</li> <li>understanding of the consequences of their behaviour and actions</li> <li>interest in investigating and offering reasoned views about moral and ethical issues and ability to understand and appreciate the viewpoints of others on these issues</li> </ul>	<i>Ethical issues - Why methylated spirits have to be coloured and have an off-putting smell.</i> <i>Uses of alcohols.</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Why do we need to be able to test for gases. Drug testing, forensics.</i> <i>Horse meat scandal and use of chemical analysis.</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Ethical issues with creating greenhouse gases and contributing to climate change.</i> <i>Responsibility of individuals and governments to reduce carbon footprints and how to tackle climate change.</i> <i>Impact of climate change more on countries who contribute to it least – ethics.</i>	<i>Why we need to reduce, reuse, recycle – Is it right?</i> <i>Risk assessment – consequences of behaviour.</i>	<i>Consequences of revision.</i>	
<b>Social</b>	<ul style="list-style-type: none"> <li>use of a range of social skills in different contexts, for example working and socialising with other pupils, including those from different religious, ethnic and socio-economic backgrounds</li> <li>willingness to participate in a variety of communities and social settings, including by volunteering, cooperating well with others and being able to resolve conflicts effectively</li> <li>acceptance of and engagement with the fundamental British values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs. They will develop and demonstrate skills and attitudes that will allow them to participate fully in and contribute positively to life in modern Britain</li> </ul>	<i>Methylated spirits – why people would drink them.</i> <i>Uses of alcohols.</i> <i>Working in groups to complete practical work.</i>	<i>Working in groups to complete practical work.</i>	<i>Impact climate change is having on the world.</i> <i>Different ethnic backgrounds coming together to fight a common goal.</i> <i>Importance of democracy.</i>	<i>Working in groups to complete practical work.</i>	<i>Working in groups to revise different topics.</i>	



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