



	KS2	KS3	KS4
<b>Matter</b>	<p>Compare, group together and give reasons for the use of everyday materials on the basis of their properties</p> <p>Describe the properties of solids, liquids and gases</p> <p>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</p>	<p>Yr7 : Know that properties of solids, liquids and gases are related to the particles in them</p> <p>Yr7: Describe how to separate various mixtures</p> <p>Yr8: Describe elements and compounds in terms of the particles in them</p> <p>Yr8: Describe basic features of the periodic table</p> <p>Yr8: Use chemical formulae to represent the particles in substances</p> <p>Yr8: Relate a material's use to its properties</p>	<p>C1: Describe the differences between atoms of different elements and how this affects their properties (Groups 1,7 and 0)</p> <p>C1: Describe how atomic structure is related to the periodic table</p> <p>C2: Relate bonding to different particle types and the forces between them</p> <p>C2: Explain substances' physical properties in terms of their structure and bonding</p> <p>C3: Describe amount of matter in terms of the mole</p> <p>C7 (chem): Categorise organic chemicals in terms of homologous series and functional group</p> <p>C8: Describe the properties of pure substances and formulations</p> <p>C8: Relate separation techniques to the properties of the constituent substances</p> <p>C8: Describe techniques and results for identifying gases (Chem: and ions)</p> <p>C10: (Chem) Describe the properties of ceramics, polymers and composites</p>
<b>Reactions</b>	<p>explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda</p>	<p>Yr7: Describe the properties and reactions of metals and acids</p> <p>Yr8: Describe the products of various reactions and how products can be isolated and tested</p> <p>Yr 8 : Describe reactions using word equations</p>	<p>ALL: Write balanced symbol and ionic equations</p> <p>C1: Describe the reactions of different elements</p> <p>C4: Describe the products of a range of chemical reactions including electrolysis</p> <p>C4: Describe methods for making pure salt samples</p> <p>C4: Explain in terms of electron transfer how reactions are oxidation or reduction</p> <p>C3: Apply the idea of conservation of mass to chemical calculations</p> <p>C3: Perform calculations using the concept of the mole (HT only)</p> <p>C5: Describe and explain energy changes when reactions occur</p> <p>C6: Use kinetic and collision theory to explain reaction rate and equilibrium</p> <p>C7 (chem): Describe the reactions of a variety of organic compounds</p> <p>C9: Describe the chemical reactions occurring in the atmosphere</p> <p>C10 (chem): Describe rusting and ammonia production</p>

Earth

Describe changes of state in the water cycle

Yr8: Know that the Earth's crust is motion which leads to the formation of different rock types

C3 (chem): describe how high atom economy is important for sustainable development  
C4: Describe how metals are extracted  
C6: Explain the role of catalysts in reducing use of polluting and non-renewable fossil fuels  
C7: Describe the formation, separation and cracking of crude oil and its fractions to produce useful materials  
C9: Describe the evolution of the Earth's atmosphere  
C9: Describe the effect of human activities on the Earth and it's atmosphere including acid rain and climate change and consider future action to minimise the effects  
C10: Explain the role of chemistry in assessing the impact of materials and human activities to increase sustainability (life cycle assessments)