

Chemistry Separate Science Paper 1, Higher

Chemistry Unit 1 – Atomic Structure and the Periodic Table

Major focus topic area	BBC Bitesize Websites	Video links	Revision guide page numbers (CPG GCSE Chemistry Higher)
<p><u>The Periodic Table</u> (Spec reference 4.1.2)</p> <ul style="list-style-type: none"> • Structure of the Periodic Table (Groups, Periods, positions of metals and non-metals) • Development of the Periodic Table (Mendeleev) • Metals and Non-Metals – Comparing properties of transition and Group 1 metals • Group 0 – Properties, Group trends • Group 7 – Properties, trends, displacement reactions 	<p>The Periodic Table https://www.bbc.co.uk/bitesize/guides/zg923k7/revision/1</p> <p>Groups in the Periodic Table https://www.bbc.co.uk/bitesize/guides/zqwtcj6/revision/1</p> <p>Transition Metals https://www.bbc.co.uk/bitesize/guides/z97yw6f/revision/1</p>	<p>Cognito https://www.youtube.com/watch?v=IdS9roW7IzM</p> <p>https://www.youtube.com/watch?v=Rc2JBp91V7o</p> <p>https://www.youtube.com/watch?v=dZGDUKQa_6g</p> <p>https://www.youtube.com/watch?v=HT1zAPQIBAQ</p> <p>Free Science https://www.youtube.com/watch?v=uwzXfZoCP_k</p> <p>https://www.youtube.com/watch?v=VhiieTJWYHs</p> <p>https://www.youtube.com/watch?v=-qlnXrhrhY</p> <p>https://www.youtube.com/watch?v=aORsl-2dwnY&t=1s</p> <p>https://www.youtube.com/watch?v=QAUwi0LQgZY&t=1s</p>	<p style="text-align: center;">21-26</p>

<ul style="list-style-type: none"> Group 1 -Properties, trends, reactions with water Transition elements – Properties and Uses 		https://www.youtube.com/watch?v=kNPthLiM8T4 https://www.youtube.com/watch?v=fyA7qtPq7QY&t=2s https://www.youtube.com/watch?v=WB9X1-oTbGU&feature=emb_logo https://www.youtube.com/watch?v=ia2sILs5Qkk&t=1s	
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Chemistry Unit 2 – Bonding, Structure and the Properties of Matter

Major focus topic area	BBC Bitesize Websites	Video links	Revision guide page numbers
<p><u>Chemical bonds, ionic, covalent and metallic</u></p> <p>(Spec reference 4.2.1)</p> <ul style="list-style-type: none"> Ionic Bonding – How they form between metal and non-metal atoms, Dot and Cross diagrams, Representing in 2D and 3D models Covalent Bonding – How they form between non-metal atoms, Dot and 	<p>Ionic Compounds https://www.bbc.co.uk/bitesize/guides/zyydng8/revision/1</p> <p>Small Covalent Molecules https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1</p> <p>Metallic Bonding https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1</p>	<p><u>Cognito</u></p> <p>https://www.youtube.com/watch?v=PCZtnbxtXqE</p> <p>https://www.youtube.com/watch?v=6DtrrWA5nkE</p> <p>https://www.youtube.com/watch?v=5l_1jRGSr9E&feature=emb_imp_woyt</p> <p>https://www.youtube.com/watch?v=b1y2Q6YX1bQ</p> <p><u>Free Science</u></p>	<p>28-32 and 35</p>

<p>Cross diagrams, Representing in 2D and 3D models</p> <ul style="list-style-type: none"> • Limitations of 'dot-and cross' and 2D and 3D models of structures • Metallic Bonding – Description of Structure 		<p>https://www.youtube.com/watch?v=Biq-e9hsbil&t=1s</p> <p>https://www.youtube.com/watch?v=-DZR00LQC9w&t=2s</p> <p>https://www.youtube.com/watch?v=lenvZEcMc60</p> <p>https://www.youtube.com/watch?v=lhEm7aAKIDg&t=2s</p> <p>https://www.youtube.com/watch?v=Lp3Rlfq_udM&t=3s</p> <p>https://www.youtube.com/watch?v=0khrZnl9CIQ&t=2s</p>	
<p><u>How bonding and structure are related to the properties of substances</u></p> <p>(Spec reference 4.2.2)</p> <ul style="list-style-type: none"> • Three States of Matter (Solid, Liquid Gas) – Draw particle diagrams, explain how changes of states depend on forces between particles • State symbols – (s), (l), (g), (aq) 	<p>Three States of Matter https://www.bbc.co.uk/bitesize/guides/z93jfcw/revision/1</p> <p>Ionic Compounds https://www.bbc.co.uk/bitesize/guides/zyydng8/revision/1</p> <p>Small Covalent Molecules https://www.bbc.co.uk/bitesize/guides/zcpjfcw/revision/1</p> <p>Giant Covalent Molecules (Slide 1) https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1</p>	<p>Cognito https://www.youtube.com/watch?v=hkBrw2fG75U&feature=emb_logo</p> <p>https://www.youtube.com/watch?v=kShlflsvWbQ&t=7s</p> <p>https://www.youtube.com/watch?v=d2ogZgGmMDY&t=2s</p> <p>https://www.youtube.com/watch?v=b1y2Q6YX1bQ&t=1s</p> <p>Free Science</p>	<p>30, 32, 33, 35-37</p>

<ul style="list-style-type: none"> • Properties of substances – Ionic, Small covalent molecules, Large covalent molecules, Metals • Polymers and Alloys 	<p>Metallic Bonding https://www.bbc.co.uk/bitesize/guides/z8db7p3/revision/1</p>	<p>https://www.youtube.com/watch?v=Ku0oTu8ZWqk&feature=emb_logo</p> <p>https://www.youtube.com/watch?v=leVxy7cjZMU&t=1s</p> <p>https://www.youtube.com/watch?v=DECGNyC-x_s&t=1s</p> <p>https://www.youtube.com/watch?v=QWoxwCJZ8j0</p> <p>https://www.youtube.com/watch?v=A-wTpLPICd0&t=3s</p>	
<p><u>Structure and bonding of Carbon</u> (Spec reference 4.2.3)</p> <ul style="list-style-type: none"> • Diamond – Structure and properties • Graphite – Structure and properties • Graphene and Fullerenes – Structure and properties 	<p>Giant Covalent Molecules (Slides 2-4) https://www.bbc.co.uk/bitesize/guides/z9twsrd/revision/1</p>	<p><u>Cognito</u> https://www.youtube.com/watch?v=tGH0mXCcEFU&t=2s</p> <p>https://www.youtube.com/watch?v=4ZEtS5qLOHs&t=1s</p> <p><u>Free Science</u> https://www.youtube.com/watch?v=ge7PB9aP-Wc&t=1s</p> <p>https://www.youtube.com/watch?v=dEZItwgZeFU</p> <p>https://www.youtube.com/watch?v=6jCJXhusl2M&t=1s</p>	<p>33-34</p>

YOU WILL NOT BE ASSESSED ON

- Bulk and surface properties of matter including nanoparticles (Spec ref 4.2.4)

Chemistry Unit 3 – Quantitative Chemistry

Major focus topic area	BBC Bitesize Websites	Video links	Revision guide page numbers
<p><u>Use of amount of substance in relation to masses of pure substances</u></p> <p>(Spec reference 4.3.2)</p> <ul style="list-style-type: none"> Moles – What they are, Avogadro's number Calculating moles when given a mass of an element or compound Calculating masses of product in a balanced equation when given reactant Limiting reactants Concentration of solutions in g/dm^3 – Work out mass of solute dissolved to from different concentrations 	<p>Calculations in Chemistry https://www.bbc.co.uk/bitesize/guides/zgcyw6f/revision/2</p> <p>Calculations in Chemistry (Higher) (Slides 1-4 only) https://www.bbc.co.uk/bitesize/guides/z3kg2nb/revision/1</p>	<p>Cognito https://www.youtube.com/watch?v=wPGVQu3UXpw&t=1s</p> <p>https://www.youtube.com/watch?v=TKDOyR7WKQQ</p> <p>Free Science https://www.youtube.com/watch?v=-fNVmDwJk</p> <p>https://www.youtube.com/watch?v=Md4BQL91U6w&t=1s</p> <p>https://www.youtube.com/watch?v=kMak1TQ3YgU</p> <p>https://www.youtube.com/watch?v=4wTSLBBBMo0&t=18s</p> <p>https://www.youtube.com/watch?time_continue=1&v=3y8YDINeuRk&feature=emb_logo</p>	<p>42, 44, 45, 46 (2nd half)</p>

		https://www.youtube.com/watch?v=l1vf1z8OM&t=1s https://www.youtube.com/watch?v=TV6n5MFH6IU&t=1s https://www.youtube.com/watch?v=5zOpoen0dV0 https://www.youtube.com/watch?v=MuzOmFhiE8o&t=1s https://www.youtube.com/watch?v=3G3KQJyoZDI&t=12s	
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Chemistry Unit 4 – Chemical Changes

Major focus topic area	BBC Bitesize Websites	Video links	Revision guide page numbers
<p><u>Reactivity of Metals</u> (Spec reference 4.4.1)</p> <ul style="list-style-type: none"> Metals + oxygen – Oxidation and Reduction Reactivity Series, Ordering of metals based on experimental results, displacement reactions 	<p>Reactions of Metals https://www.bbc.co.uk/bitesize/guides/zsm7v9q/revision/1</p>	<p><u>Cognito</u> https://www.youtube.com/watch?v=2i5Lm7BMtpo&t=1s https://www.youtube.com/watch?v=gvNuMpxqG7Q&t=1s https://www.youtube.com/watch?v=jyvcVjrZnJA&t=1s</p> <p><u>Free Science</u></p>	55-57

<ul style="list-style-type: none"> Extraction of metals from their oxides – heating with carbon Oxidation and reduction – gaining or losing electrons 		https://www.youtube.com/watch?v=Lk1V0buHEFs&t=1s https://www.youtube.com/watch?v=MDQr5QFVGkk https://www.youtube.com/watch?v=MXTSels6e2Y&t=1s https://www.youtube.com/watch?v=gnbuTl2aril&t=2s	
<p><u>Reactions of Acids</u> (Spec reference 4.4.2)</p> <ul style="list-style-type: none"> Reactions with metals Reactions of acids with alkalis or bases in neutralisation reactions – soluble making salts pH Scale Neutralising using titration Strong and Weak Acids <p><i>Required Practical 1 – Preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate</i></p>	<p>Acids, Alkalis and Salts https://www.bbc.co.uk/bitesize/guides/zcjjfcw/revision/1</p> <p>Titration https://www.bbc.co.uk/bitesize/guides/zx98pbk/revision/1</p>	<p>Cognito https://www.youtube.com/watch?v=vt8fB3MFzLk&t=1s https://www.youtube.com/watch?v=IBjwMchUyBY&t=2s https://www.youtube.com/watch?v=_gYBbzkqrmE&t=1s</p> <p>Free Science https://www.youtube.com/watch?v=ZWZTDiwOWil&t=1s https://www.youtube.com/watch?v=ofw6oHSYGFI&t=1s https://www.youtube.com/watch?v=iA4mk3CTkml&t=1s https://www.youtube.com/watch?v=QlSsle_jSQ8&t=1s</p>	<p>51-54</p>

<p><i>Required Practical 2 – Determination of the reacting volumes of solutions of a strong acid and a strong alkali by titration</i></p>		<p>https://www.youtube.com/watch?v=x8DLLCNMKAs&t=3s</p> <p>https://www.youtube.com/watch?v=ycC4oKteRJU&t=4s</p> <p>https://www.youtube.com/watch?v=4pIHhXfGZIE&t=1s</p> <p><i>Required Practical 1 – Making Soluble Salts</i></p> <p>https://www.youtube.com/watch?v=9GH95172Js8</p> <p><i>Required Practical 2 – Acid-base titrations</i></p> <p>https://www.youtube.com/watch?v=saRBT5oZfh8&t=1s</p>	
<p><u>Electrolysis</u></p> <p>(Spec reference 4.4.3)</p> <ul style="list-style-type: none"> • The process of electrolysis – key terminology • Electrolysis of molten ionic compounds • Extracting metals using electrolysis – Aluminium 	<p>Electrolysis</p> <p>https://www.bbc.co.uk/bitesize/guides/zcsyw6f/revision/1</p>	<p>Cognito</p> <p>https://www.youtube.com/watch?v=iINOpROacf0&t=1s</p> <p>https://www.youtube.com/watch?v=hOrGNtIN3sg&t=1s</p> <p>https://www.youtube.com/watch?v=GrgYXk_NCec&t=1s</p> <p>Free Science</p> <p>https://www.youtube.com/watch?v=AhTRiL6xjBA&t=1s</p> <p>https://www.youtube.com/watch?v=YcyMEIBEzAY&t=2s</p>	<p>58-59</p>

<ul style="list-style-type: none"> Electrolysis of aqueous ionic compounds Representing reactions at electrodes as half equations 		https://www.youtube.com/watch?v=6WjC_Vi4roA&t=1s https://www.youtube.com/watch?v=mL7mkqyLpSo&t=3s	
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Chemistry Unit 5 – Energy Changes

Major focus topic area	BBC Bitesize Websites	Video links	Revision guide page numbers
<p><u>Exothermic and Endothermic reactions</u> (Spec reference 4.5.1)</p> <ul style="list-style-type: none"> Endothermic and Exothermic reactions Reactions profiles Bond energies – Calculating energy changes in reactions using energy to break and make bonds <p><i>Required Practical 4 – Investigate the variables that affect temperature changes in reacting solutions</i></p>	<p>Exothermic and Endothermic reactions https://www.bbc.co.uk/bitesize/guides/zwfr2nb/revision/1</p>	<p><u>Cognito</u> https://www.youtube.com/watch?v=dstRL5xBOSk&t=4s https://www.youtube.com/watch?v=it0HGXhxD-s</p> <p><u>Free Science</u> https://www.youtube.com/watch?v=4HS6D0hTzdg https://www.youtube.com/watch?v=eExCBkp4jB4&t=1s https://www.youtube.com/watch?v=PdValXAVUOc&t=1s</p> <p><i>Required Practical 4 – Measuring energy changes</i></p>	<p>61-63</p>

		https://www.youtube.com/watch?v=rdI7xEq4Ew8&t=2s	
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