Chemistry Combined Science Paper 1, Foundation

Chemistry Unit 1 – Atomic Structure and the Periodic Table

Major focus topic area	BBC Bitesize Websites	Video links	Foundation Revision Guide Pages	Knowledge Organiser (F) pages
The Periodic Table **(Spec reference 5.1.2)** • 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 • Group 1 -Properties, trends, reactions with water	**The Periodic Table** https://www.bbc.co.uk/bitesize/guides/zwt2k2p/revision/1 **Groups in the Periodic Table** https://www.bbc.co.uk/bitesize/guides/ztrxdxs/revision/1	**Cognito** https://www.youtube.com/watch?v=IdS9roW7IzM https://www.youtube.com/watch?v=Rc2JBp91V7o https://www.youtube.com/watch?v=dZGDUKQa_6g https://www.youtube.com/watch?v=HT1zAPQIBAQ **Free Science** https://www.youtube.com/watch?v=uwzXfZoCP_k https://www.youtube.com/watch?v=VhiieTJWYHs https://www.youtube.com/watch?v=-qlnXrhrrhY https://www.youtube.com/watch?v=aORsI-2dwnY&t=1s https://www.youtube.com/watch?v=QAUwi0LQgZY&t=1s https://www.youtube.com/watch?v=kNPthLiM8T4	106-111	47-50

		https://www.youtube.com/watch?v=fyA7qtPq7QY&t=2s https://www.youtube.com/watch?v=WB9X1-oTbGU&feature=emb_logo		

Chemistry Unit 2 – Bonding, Structure and the Properties of Matter

Major focus topic area	BBC Bitesize Websites	Video links	Foundation Revision Guide Pages	Knowledge Organiser (F) pages
How bonding and structure are related to the properties of substances **(Spec reference 5.2.2)** • 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)	**Three States of Matter** https://www.bbc.co.uk/bitesize/guides/zwsdgdm/revision/1 **Ionic Compounds (Slides 1,3,4)** https://www.bbc.co.uk/bitesize/guides/ztc6w6f/revision/3 **Small Covalent Molecules (Slides 1,5)** https://www.bbc.co.uk/bitesize/guides/z373h39/revision/5 **Giant Covalent Molecules (Slide 1, 4)**	**Cognito** https://www.youtube.com/watch?v=hkBrw2fG75U&feature=emb_logo https://www.youtube.com/watch?v=kShlfIsvWbQ&t=7s https://www.youtube.com/watch?v=d2ogZgGmMDY&t=2s https://www.youtube.com/watch?v=b1y2Q6YX1bQ&t=1s **Free Science**	113, 115, top 116, bottom 117,top 118, 120-122	51-55

• Properties of substances – Ionic, Small covalent molecules, Large covalent molecules, Metals • Polymers and Alloys	https://www.bbc.co.uk/bitesize/guides/zgq8b82/revision/1 **Metallic Bonding** https://www.bbc.co.uk/bitesize/guides/ztgy6yc/revision/2	https://www.youtube.com/watch?v=Ku0oTu8ZWqk&feature=emb_logo https://www.youtube.com/watch?v=leVxy7cjZMU&t=1s https://www.youtube.com/watch?v=DECGNyC-x_s&t=1s https://www.youtube.com/watch?v=QWoxwCJZ8j0 https://www.youtube.com/watch?v=A-wTpLPICd0&t=3s		
Structure and bonding of Carbon **(Spec reference 5.2.3)** • Diamond – Structure and properties • Graphite – Structure and properties • Graphene and Fullerenes – Structure and properties	**Giant Covalent Molecules (Slides 2-4)** https://www.bbc.co.uk/bitesize/guides/zgq8b82/revision/1	**Cognito** https://www.youtube.com/watch?v=tGH0mXCcEFU&t=2s https://www.youtube.com/watch?v=4ZEtS5qLOHs&t=1s **Free Science** https://www.youtube.com/watch?v=ge7PB9aP-Wc&t=1s https://www.youtube.com/watch?v=dEZItwgZeFU https://www.youtube.com/watch?v=6jCJXhusI2M&t=1s	Bottom 118 119	53

Chemistry Unit 3 – Quantitative Chemistry

No Main Focus Content in this Unit

Chemistry Unit 4 – Chemical Changes

Major focus topic area	BBC Bitesize Websites	Video links	Foundation Revision Guide Pages	Knowledge Organiser (F) pages
Reactivity of Metals **(Spec reference 5.4.1)** • Metals + oxygen – Oxidation and Reduction • Reactivity Series, Ordering of metals based on experimental results, displacement reactions • Extraction of metals form their oxides – heating with carbon	**Reactions of Metals** https://www.bbc.co.uk/bitesize/guides/zy7dgdm/revision/1	**Cognito** https://www.youtube.com/watch?v=2i5Lm7BMtpo&t=1s https://www.youtube.com/watch?v=gvNuMpxqG7Q&t=1s **Free Science** 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	130-131	58

Reactions of Acids **(Spec reference 5.4.2)** • Reactions with metals • Reactions of acids with alkalis or bases in neutralisation reactions – soluble making salts • pH Scale • Neutralising using titration *Required Practical 8 – Preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate*	**Acids, Alkalis and Salts** https://www.bbc.co.uk/bitesize/guides/ztv2dxs/revision/1	**Cognito** https://www.youtube.com/watch?v=vt8fB3MFzLk&t=1s https://www.youtube.com/watch?v=lBjwMcHUyBY&t=2s **Free Science** https://www.youtube.com/watch?v=ZWZTDiwOWiI&t=1s https://www.youtube.com/watch?v=ofw6oHSYGFI&t=1s https://www.youtube.com/watch?v=iA4mk3CTkmI&t=1s https://www.youtube.com/watch?v=QlSsle_jSQ8&t=1s *Required Practical 8 – Making Soluble Salts* https://www.youtube.com/watch?v=9GH95172Js8	128-129	57
Electrolysis **(Spec reference 5.4.3)**	**Electrolysis** https://www.bbc.co.uk/bitesize/guides/z9h9v9q/revision/1	**Cognito** https://www.youtube.com/watch?v=ilNOpROacf0&t=1s	132-133	59

• The process of electrolysis – key terminology • Electrolysis of molten ionic compounds • Extracting metals using electrolysis – Aluminium • Electrolysis of aqueous ionic compounds • Representing reactions at electrodes as half equations *Required Practical 9 – Investigate what happens when aqueous solutions are electrolysed using inert electrodes*		https://www.youtube.com/watch?v=hOrGNtlN3sg&t=1s https://www.youtube.com/watch?v=GrgYXk_NCec&t=1s **Free Science** https://www.youtube.com/watch?v=AhTRiL6xjBA&t=1s https://www.youtube.com/watch?v=YcyMElBEzAY&t=2s https://www.youtube.com/watch?v=6WjC_Vi4roA&t=1s https://www.youtube.com/watch?v=mL7mkqyLpSo&t=3s *Required Practical 9 – Electrolysis of a Solution* https://www.youtube.com/watch?v=ukbtTTG1Kew		

Chemistry Unit 5 – Energy Changes

Major focus topic area	BBC Bitesize Websites	Video links	Foundation Revision Guide Pages	Knowledge Organiser (F) pages
Required Practical 10 – Investigate the variables that affect temperature changes in reacting solutions		*Required Practical 10 – Measuring energy changes* https://www.youtube.com/watch?v=rdI7xEq4Ew8&t=2s	135	-