TEACHER 1 (hours x 4)

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YEAR 12		Required practicals	HW, PRIVATE STUDY, PREP TIME: OTHER	EXAM PREP BOOKLET	VIDEO
3.1.1 Atomic structure	3.1.1.1 Fundamental particles			Q1-3, pages 1-3	**Atomic Structure and Electron Configuration**: https://www.youtube.com/watch?v=oH0tpyrlcSY&list=PL0yIQjy59R-C-ZUQvVP5NS8PtBczC1mE&index=1&t=16s
	3.1.1.2 Mass number and isotopes				**Ionisation Energies**: https://www.youtube.com/watch?v=PNZV862SN6Q&list=PL0yIQjy59R-C-ZUQvVP5NS8PtBczC1mE&index=2&t=6s
	3.1.1.3 Electron configuration				**TOF Mass Spectrometer**: https://www.youtube.com/watch?v=WoNzJUu3gKA&list=PL0yIQjy59R-C-ZUQvVP5NS8PtBczC1mE&index=3
3.1.3 Bonding	3.1.3.1 Ionic bonding			Q1-7, pages 9-16	**Bonding**: https://www.youtube.com/watch?v=EBcaw8SA5kw&list=PL0yIQjy59R-BaWJpzP0jukXe1Dxjxjt-8&index=1&t=1s
	3.1.3.2 Nature of covalent and dative covalent bonds				
	3.1.3.3 Metallic bonding				
	3.1.3.4 Bonding and physicial properties				
	3.1.3.5 Shapes of simple molecules and ions				**Shapes of Molecules**: https://www.youtube.com/watch?v=Tz4gzoqxvCQ&list=PL0yIQjy59R-BaWJpzP0jukXe1Dxjxjt-8&index=2
	3.1.3.6 Bond polarity				
	3.1.3.7 Forces between molecules				**Intermolecular Forces**: https://www.youtube.com/watch?v=6EePsoVMO_4&list=PL0yIQjy59R-BaWJpzP0jukXe1Dxjxjt-8&index=3
3.1.4 Energetics	3.1.4.1 Enthalpy change		Write up for RP2	Q1-4, pages 17-21	**Energetics Pt. 1 (Enthalpy & Bond Energies)**: https://www.youtube.com/watch?v=Ks1CtqsafSg&list=PL0yIQjy59R-DNSdCnW4rm7pJXwcHpkuK-&index=1
	3.1.4.2 Calorimetry	RP 2			**Energetics Pt. 2 (Calorimetry)**: https://www.youtube.com/watch?v=2mVR3cMZcE4&list=PL0yIQjy59R-DNSdCnW4rm7pJXwcHpkuK-&index=2
	3.1.4.3 Application of Hess's law				**Energetics Pt. 3 (Hess' Law)**: https://www.youtube.com/watch?v=pQAND6QILNQ&list=PL0yIQjy59R-DNSdCnW4rm7pJXwcHpkuK-&index=3
	3.1.4.4 Bond enthalpies				
3.1.5 Kinetics	3.1.5.1 Collision theory		Write up for RP3, F1-F3, I2 Isaac Chem	Q1-6, pages 22-28	**Kinetics**: https://www.youtube.com/watch?v=jctsM6I5VDA&list=PL0yIQjy59R-CF0cQ06dEuv-cxxzW1Vv5D&index=1
	3.1.5.2 Maxwell-Boltzmann distribution				
	3.1.5.3 Effect of temperature on reaction rate	RP 3			
	3.1.5.4 Effect if concentration and pressure				
	3.1.5.5 Catalysts				
3.1.6 Chemical equilibria, Le Chatelier's principle and K_c	3.1.6.1 Chemical equilibria and Le Chatelier's principle			Q1-5, pages 29-33	**Equilibria**: https://www.youtube.com/watch?v=vRxPMSGS1sI&list=PL0yIQjy59R-BqnCqPvceGaOC3b7tK2PHe&index=1
	3.1.6.2 Equilibrium constant Kc for homogenous systems				**Equilibrium Constant, Kc**: https://www.youtube.com/watch?v=kkKVY2vI3XM&list=PL0yIQjy59R-BqnCqPvceGaOC3b7tK2PHe&index=2
3.1.7 Oxidation, reduction and redox equations			Write up for RP4, K1-K4 Isaac Chem	Q1-6, pages 34-35	**Redox**: https://www.youtube.com/watch?v=imjB1D2Jgic&list=PL0yIQjy59R-BPjvbHYBTL1dtzc_CSUxAK

TEACHER 2 (hours x 5)

YEAR 12		Required practicals	HW, PRIVATE STUDY, PREP TIME: OTHER	EXAM PREP BOOKLET	VIDEO
3.1.2 Amount of substance	3.1.2.1 Relative atomic mass and relative molecular mass		Write up for RP1	Q1-5, pages 4-8	**Amount of Substance Pt. 1 (moles, concentrations and masses)**: https://www.youtube.com/watch?v=UQV9tLkQI3k&list=PL0yIQjy59R-D9oZFerw9hX0LfCGBgWLfC&index=1&t=7s
	3.1.2.2 The mole and the Avogadro constant				
	3.1.2.3 The ideal gas equation				**Amount of Substance Pt. 2 (ideal gas equation)**: https://www.youtube.com/watch?v=Wwu1o5IAMcQ&list=PL0yIQjy59R-D9oZFerw9hX0LfCGBgWLfC&index=2
	3.1.2.4 Empirical and molecular formula				
	3.1.2.5 Balanced equations and associated calculations	RP 1			
3.3.1 Introduction to organic chemistry	3.3.1.1 Nomenclature			Q1-6, pages 43-45	**Nomenclature**: https://www.youtube.com/watch?v=6mEO-3ogOA0&list=PL0yIQjy59R-AjARB7QthFphe4aR30Drzx&index=1
	3.3.1.2 Reaction mechanisms				
	3.3.1.3 Isomerism				
3.3.2 Alkanes	3.3.2.1 Fractional distillation of crude oil			Q1-6, pages 46-49	**Fractional Distillation and Cracking**: https://www.youtube.com/watch?v=D2Iz_oQT6wY&list=PL0yIQjy59R-A7wpxzjefe23WSoIHwLqKJ&index=1
	3.3.2.2 Modification of alkanes by cracking				
	3.3.2.3 Combustion of alkanes				**Fuels**: https://www.youtube.com/watch?v=dJBNfaZcVml&list=PL0yIQjy59R-A7wpxzjefe23WSoIHwLqKJ&index=2
	3.3.2.4 Chlorination of alkanes				**Halogenoalkane synthesis (free radical substitution)**: https://www.youtube.com/watch?v=NXZ1--ihc1c&list=PL0yIQjy59R-CZ1xQCSQYWKymtgGcAjoNL&index=2
3.3.3 Halogenoalkanes	3.3.3.1 Nucleophilic substitution			Q1-10, pages 50-56	**Nucleophilic Substitution**: https://www.youtube.com/watch?v=9mlBux7-sJM&list=PL0yIQjy59R-CZ1xQCSQYWKymtgGcAjoNL&index=3
	3.3.3.2 Elimination				**Elimination**: https://www.youtube.com/watch?v=5D7Ci-xns24&list=PL0yIQjy59R-CZ1xQCSQYWKymtgGcAjoNL&index=3
	3.3.3.3 Ozone depletion				
3.3.4 Alkenes	3.3.4.1 Structure, bonding and reactivity			Q1-10, pages 57-62	**Alkenes (inc. E-Z Isomerism & CIP priority)**: https://www.youtube.com/watch?v=3QGSShSKYeQ&list=PL0yIQjy59R-DXdNAkuXzCwkNCTrM1jzfU&index=1
	3.3.4.2 Addition reactions of alkenes				**Electrophilic Addition**: https://www.youtube.com/watch?v=iWnBE0OiZ1s&list=PL0yIQjy59R-DXdNAkuXzCwkNCTrM1jzfU&index=2
	3.3.4.3 Addition polymers				
3.3.5 Alcohols	3.3.5.1 Alcohol production		Write up for RP5	Q1-6, pages 63-66	**Alcohols**: https://www.youtube.com/watch?v=MX2IWFBO5fM&list=PL0yIQjy59R-B9gdCvZ8UgCLmui9WCCsDv&index=1
	3.3.5.2 Oxidation of alcohols				**Oxidation of Alcohols**: https://www.youtube.com/watch?v=zCTLURmrXZw&list=PL0yIQjy59R-B9gdCvZ8UgCLmui9WCCsDv&index=2
	3.3.5.3 Elimination	RP5			**Making Ethanol**: https://www.youtube.com/watch?v=xeoMZ2cGSEg&list=PL0yIQjy59R-B9gdCvZ8UgCLmui9WCCsDv&index=3
3.3.6 Organic analysis	3.3.6.1 Identification of functional groups by test-tube reactions		Write up for RP6	Q1-6, pages 67-71	**Organic Analysis**: https://www.youtube.com/watch?v=4G_RU51t_UM&list=PL0yIQjy59R-AEwx4m3wgTGDbORsQo2jbi&index=1
	3.3.6.2 Mass spectrometry				
	3.3.6.3 Infrared spectrometry	RP6			
3.2.1 Periodicity	3.2.1.1 Classification			Q1-5, pages 36-37	**Periodicity**: https://www.youtube.com/watch?v=VOcY9zGsSFs&list=PL0yIQjy59R-BOxpSS5Mf65BkHWf7I_2_&index=1&t=1s
	3.2.1.2 Physical properties of Period 3 elements				
3.2.2 Group 2, the alkaline Earth metals				Q1-6, pages 38-40	**The Alkaline Earth Metals (Gp. 2)**: https://www.youtube.com/watch?v=pUwoRy_iHlw&list=PL0yIQjy59R-AxEbYGbwZEI-Ujhwfujs5Z&index=1
3.2.3 Group 7 (17), the halogens	3.2.3.1 Trends in properties		Write up for RP4	Q1-5, pages 41-42	**The Halogens (Gp. 7)**: https://www.youtube.com/watch?v=XqAZgH6APcM&list=PL0yIQjy59R-DxAySwkCJVtnozgAmToHYd&index=1
	3.2.3.2 Uses of chlorine and chlorate (I)	RP4			

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A2

3.2.4 Properties of Period 3 elements and their oxides				Q1-2, pages 32-33	**Period 3 Elements - Reactions**: https://www.youtube.com/watch?v=msqQq3TNekg
3.2.5 Transition metals	*3.2.5.1 General properties of transition metals*			Q1-13, pages 34-41	**Catalysis**: https://www.youtube.com/watch?v=tZSdBZ3bhy8&list=PL0yIQjy59R-DkjB3MSz0tOyw7LJO5xboa
	3.2.5.2 Substitution reactions				
	3.2.5.3 Shapes of complex ions				
	3.2.5.4 Formation of coloured ions				
	3.2.5.5 Variable oxidation states				
	3.2.5.6 Catalysts				

3.3.7 Optical isomerism				Q1-6, pages 44-46	**Optical Isomerism**: https://www.youtube.com/watch?v=KBFJytBk0io&list=PL0yIQjy59R-A-DuUpx0zvQOhCCP8opoJK&index=1&t=7s
3.3.8 Aldehydes and ketones				Q1-5, pages 47-48	**Aldehydes and Ketones (inc. nucleophilic addition)**: https://www.youtube.com/watch?v=5fNihK9QbpU&list=PL0yIQjy59R-Bg5Vm1s4p-hcDnOOzudjjz&index=1

YR12 IPEs

WORK EXPERIENCE, SPORTS DAYS, UCAS REGISTRATION

SUMMER

YEAR 13		Required practicals	HW, PRIVATE STUDY, PREP TIME: OTHER	EXAM PREP BOOKLET	VIDEO
3.2.6 Reactions of ions in aqueous solutions		*RP 11*	Write up for RP11	Q1-4, pages 42-43	**Introduction to Aqueous Ion Reactions**: https://www.youtube.com/watch?v=wateu4swMuA&list=PL0yIQjy59R-BDtuBmmJ1_mqUpd0_luYOx&index=1
					Copper: https://www.youtube.com/watch?v=9iIqXACnDIo&list=PL0yIQjy59R-BDtuBmmJ1 mqUpd0 luYOx&index=2
					Iron: https://www.youtube.com/watch?v=KLSIOyk8r24&list=PL0yIQjy59R-BDtuBmmJ1 mqUpd0 luYOx&index=3
					Aluminium: https://www.youtube.com/watch?v=tPan8iubFfo&list=PL0yIQjy59R-BDtuBmmJ1 mqUpd0 luYOx&index=4
					Aqueous Ion Comparisons: https://www.youtube.com/watch?v=Ing1hSCkmpA&list=PL0yIQjy59R-BDtuBmmJ1 mqUpd0 luYOx&index=5
3.3.13 Amino acids, proteins and DNA	*3.3.13.1 Amino acids*			Q1-7, pages 66-71	**Amino Acids**: https://www.youtube.com/watch?v=-zwVTJuhtnA&list=PL0yIQjy59R-ClnhLVDnB2iBvoz7br7NaC
	3.3.13.2 Proteins				
	3.3.13.3 Enzymes				
	3.3.13.4 DNA				
	3.3.13.5 Action of anti-cancer drugs				
3.1.11 Electrode potentials and electrochemical cells	*3.1.11.1 Electrode potentials and cells*	*RP 8*	*Write up for RP8, L1 Isaac Chem*	Q1-6, pages 16-21	**Electrode Potentials**: https://www.youtube.com/watch?v=n61P_AaWuwk&list=PL0yIQjy59R-AaHSRcDgncdn7Qf_wRepIm&index=1
	3.1.11.2 Commercial applications of electrochemical cells				**Electrochemical Series**: https://www.youtube.com/watch?v=OEIvnqBruvc&list=PL0yIQjy59R-AaHSRcDgncdn7Qf_wRepIm&index=2
3.1.12 Acids and bases	*3.1.12.1 Bronsted-Lowry acid-base equilibria in aqueous solution*		Write up for RP9, J1-J3, J5 Isaac Chem	Q1-12, pages 22-31	**Acids, Bases & pH**: https://www.youtube.com/watch?v=iW3LwM_RBXY&list=PL0yIQjy59R-DaqV5r39mOnUBsIqvWQzvG&index=2
	3.1.12.2 Definition and determination of pH				
	3.1.12.3 The ionic product of water K_w				**Kw & Bases**: https://www.youtube.com/watch?v=fNGQ7E6mXQ8&list=PL0yIQjy59R-DaqV5r39mOnUBsIqvWQzvG&index=3
	3.1.12.4 Weak acids and bases K_a for weak acids				
	3.1.12.5 pH curves, titrations and indicators	*RP 9*			
	3.1.12.6 Buffer action				**Buffers**: https://www.youtube.com/watch?v=37bTWrKy4Ds&list=PL0yIQjy59R-DaqV5r39mOnUBsIqvWQzvG&index=3
3.1.9 Rate equations	*3.1.9.1 Rate equations*		Write up for RP7a&b, M1, M2, M4 Isaac Chem	Q1-6, pages 7-11	**Rate Equations**: https://www.youtube.com/watch?v=xDLYCsqZZoE&list=PL0yIQjy59R-DaRfL6TSM5XMhSA1ap7Vfv&index=1
	3.1.9.2 Determination of rate equation	*RP 7*			
3.1.10 Equilibrium constant Kp for homongenous systems				Q1-4, pages 12-15	**Equilibrium Constant, Kp**: https://www.youtube.com/watch?v=_xMPj9v-gUk&list=PL0yIQjy59R-Db1aTrP6XCbIZYNPvKLbWf&index=1

3.3.9 Carboxylic acids and derivatives	*3.3.9.1 Carboxylic acids and esters*		Write up for RP10	Q1-5, pages 49-54	**What are Carboxylic Acids?**: https://www.youtube.com/watch?v=gmM1jX-n7vg&list=PL0yIQjy59R-Cb8CIW92-driHVwAxk3wJ2&index=1&t=4s
	3.3.9.2 Acylation	RP 10			**What are Esters?**: https://www.youtube.com/watch?v=z9Kp8HR8oxE&list=PL0yIQjy59R-Cb8CIW92-driHVwAxk3wJ2&index=2&t=4s
3.3.10 Aromatic chemistry	*3.3.10.1 Bonding*			Q1-6, pages 55-58	**Aromatic Chemistry 1 (Benzene Structure)**: https://www.youtube.com/watch?v=X_pqKiHKL-w&list=PL0yIQjy59R-Awy3G8EVGehZXqXdVbDt37&index=2
	3.3.10.2 Electrophilic substitution				**Aromatic Chemistry 2 (Nitration)**: https://www.youtube.com/watch?v=LVciKdI70duU&list=PL0yIQjy59R-Awy3G8EVGehZXqXdVbDt37&index=3
					Aromatic Chemistry 3 (Friedel-Crafts Acylation): https://www.youtube.com/watch?v=kpoq3PUTkIE&list=PL0yIQjy59R-Awy3G8EVGehZXqXdVbDt37&index=4
3.3.11 Amines	*3.3.11.1 Preparation*			Q1-5, pages 59-62	**Amines**: https://www.youtube.com/watch?v=JGrS8nood8U&list=PL0yIQjy59R-Chth7ild4SYATxZ2eNUHor&index=1
	3.3.11.2 Base properties				
	3.3.11.3 Nucleophilic properties				
3.3.12 Polymers	*3.3.12.1 Condensation polymers*			Q1-5, pages 63-65	**Polymers**: https://www.youtube.com/watch?v=ge6lUsbSuxO&list=PL0yIQjy59R-A_OeFt8Qo_iZDBZhHVn4Vl&index=1
	3.3.12.2 Biodegradability and disposal of polymers				
3.3.14 Organic synthesis				Q1-6, pages 72-76	**Test Yourself A level Chemistry - Y13 Organic Synthesis 1**: https://www.youtube.com/watch?v=h099mrSCMP4
3.3.15 Nuclear magnetic resonance spectroscopy				Q1-8, pages 77-81	**Carbon-13 NMR**: https://www.youtube.com/watch?v=r4u3Vi2Af1c&list=PL0yIQjy59R-DoLXhu65vBeJWN_e8bBZO4&index=1
					Proton NMR: https://www.youtube.com/watch?v=ZeTbWAqtLos&list=PL0yIQjy59R-DoLXhu65vBeJWN_e8bBZO4&index=2
3.3.16 Chromatography		RP 12	Write up for RP12	Q1-2, pages 82-85	**Chromatography**: https://www.youtube.com/watch?v=V9jrWuR8LxQ
3.1.8 Thermodynamics	3.1.8.1 Born-Haber cycles			Q1-5, pages 1-6	**Entropy**: https://www.youtube.com/watch?v=2ruYJvDVISE&list=PL0yIQjy59R-BSGOWMu9ft4rQ-CSe6pCtD&index=1
	3.1.8.2 Gibbs free-energy change ΔG, and entropy change ΔS				**Born-Haber**: https://www.youtube.com/watch?v=IM2IubP3agE&list=PL0yIQjy59R-BSGOWMu9ft4rQ-CSe6pCtD&index=2

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