Year 12 – Applied Science

Topics	Exam preparation	Learning aim C – unit 9
Prior knowledge / skills	Students will prepare for their Unit 1 exam by consolidating their learning and applying knowledge to exam questions.	Female and male reproductive system
Key concepts / knowledge / skills covered this half term		● Structure and function of reproductive anatomy ● Reproductive process ● Stages in the interactions of hormones ● Gamete development and release ● Hormonal changes in the menstrual cycle ● Processes leading to conception ● Contraceptive methods
Assessment	UCAS exams will be in June	
Personal Development opportunities	Students understand the organisation and function of waves in the world around us and the maintenance of homeostatic mechanisms in the human body.	
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification. Students should also be working on their coursework for Unit 9 independently to meet the requirements for a pass, merit or distinction.	

Year 12 – Biology

Topics	Exam questions and walkthroughs
Prior knowledge / skills	Students have completed the content for Modules 1-4. To consolidate their learning, students will be sitting regular topic tests in lessons as well as going through exam questions to prepare for their assessments in June.
Key concepts / knowledge / skills covered this half term	
Assessment	UCAS exams will take place at the end of June
Personal Development opportunities	Scientific investigations require thorough practice and planning. Students will conduct practicals and follow them up with write-ups in a scientific manner.
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification.

Year 12 – Chemistry

Topics	Organic synthesis	Analytical techniques	Alcohols
Prior knowledge / skills	● Rates of reactions and activation energy	● Molar masses	● Functional group of alcohols. ● Primary, secondary and tertiary carbon structures.
Key concepts / knowledge / skills covered this half term	● Techniques and procedures used for the preparation and purification of organic solids involving use of a range of techniques ● Organic preparation; use of Quickfit apparatus; distillation & heating under reflux (ii) purification of an organic solid; filtration under reduced pressure; recrystallisation; measurement of melting points ● Learn synthetic routes for several functional groups	● Use of an infrared spectrum of an organic compound to identify: (i) an alcohol from an absorption peak of the O–H bond; (ii) an aldehyde or ketone from an absorption peak of the C=O bond; (iii) a carboxylic acid from an absorption peak of the C=O bond and a broad absorption peak of the O–H bond ● Interpretations & predictions of an infrared spectrum of familiar or unfamiliar substances using supplied data ● Use of a mass spectrum of an organic compound to identify the molecular ion peak and hence to determine molecular mass ● Analysis of fragmentation peaks in a mass spectrum to identify parts of structures	● Properties of alcohols – polarity of alcohols & an explanation of water solubility in terms of hydrogen bonding ● Classification of alcohols into primary, secondary and tertiary ● Reactions of alcohols: combustion and oxidation ● Elimination of water from alcohols in the presence of an acid catalyst ● Substitution with halide ions in presence of acid to form haloalkanes
Assessment	UCAS exams in June & students will be assessed regularly in-class with 20 minute tests.		
Personal Development opportunities	Industrial uses of chemistry concepts to maximise yield whilst also considering costs and safety of workers. Benefits to the environment of improved sustainability weighed against toxicity of some catalysts.		
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification.		

Year 13 – Applied Science (Unit 2)

Topics	Unit 2
Prior knowledge / skills	Students will be working through and amending their Unit 2 coursework now that they have completed their exams for Unit 3. Students who have opted for a resit of previous exam units will need to spend independent time preparing for these exams.
Key concepts / knowledge / skills covered this half term	
Assessment	N/A
Personal Development opportunities	Scientific investigations require thorough practice and planning. Students will conduct practicals and follow them up with write-ups in a scientific manner.
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification.

Year 13 – Biology

Topics	Exam questions and walkthroughs
Prior knowledge / skills	Students have completed the content for Modules 1-6. To consolidate their learning, students will be sitting regular topic tests in lessons as well as going through exam questions to prepare for their assessments in June.
Key concepts / knowledge / skills covered this half term	
Assessment	Paper 1: 5th June Paper 2: 14th June Paper 3: 19th June
Personal Development opportunities	Scientific investigations require thorough practice and planning. Students will conduct practicals and follow them up with write-ups in a scientific manner.
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification.

Year 13 – Chemistry

Topics	Lattice enthalpy	Exam questions and walkthroughs
Prior knowledge / skills	● Enthalpy cycles ● Ionic compounds	Students have completed the content for Modules 1-6. To consolidate their learning, students will be sitting regular topic tests in lesson as well as going through exam questions to prepare for their assessments in June
Key concepts / knowledge / skills covered this half term	● Explanation of the term lattice enthalpy ● Born-Haber and related enthalpy cycles ● Use of lattice enthalpy of simple ionic solid & relevant energy terms ● Explanation & use of the terms enthalpy change of solution and enthalpy change of hydration ● Use of enthalpy change of collusion of simple ionic solids & construction of enthalpy cycles with related calculations ● Qualitative explanation of the effect of ionic charge & ionic radius on the exothermic value of lattice enthalpy & enthalpy change of hydration	
Assessment	Paper 1: 10th June Paper 2: 18th June Paper 3: 21st June	
Personal Development opportunities	The instrumentation methods of analysis studied during the A-Level course provide learners with an important base of knowledge, understanding and awareness for further study in Higher Education and in many areas of employment in the broad scientific field.	
Homework requirements	Homework will be set on Google Classroom every week and will take 5 hours. Students should undertake individual independent study tasks by completing exam practice equations and making notes from their specification.	