Topic CP1 Motion	motion?	2. What are three examples of scalar quantities? 3. What are three examples of vector quantities? 4. What is the connection between speed, velocity and acceleration? 5. How do you use the equation relating average speed, distance and time? 6. In metres per second, what are the typical speeds that someone might move at during the course of a day? 7. How do you interpret distance-time graphs? 8. How do you calculate acceleration? 9. How are acceleration, initial velocity and final velocity related? 10. What is meant by uniform acceleration? 11. What is the acceleration of freefall? 12. How is deceleration identified on a velocity/time graph? 13. How is distance determined from a velocity/time graph? 14. How do you calculate and compare accelerations on a velocity-time graph?	by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC1 States of Matter	How does arrangement of particles affect a substance and its properties?	1. What are particles like in substances in the solid, liquid and gas states? 2. What changes happen to particles during the different changes of state? 3. How do you decide what state a substance will be in at a given temperature?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC2 Separating Mixtures	What are the ways of separating and purifying mixtures?	1. What is the difference between a pure substance and a mixture? 2. What happens to its particles when a solid melts? 3. How do melting points allow you to spot the difference between pure substances and mixtures? 4. How can filtration be used to separate mixtures? 5. How can crystallisation be used to separate mixtures? 6. What are the hazards and risks when separating mixtures by filtration and crystallisation? 7. How can chromatography be used to separate mixtures? 8. What are the differences between mixtures and pure substances on a chromatogram? 9. How do you calculate Rf value? 10. What is distillation? 11. How do simple distillation and fractional distillation differ? 12. How would you reduce risks when carrying out a distillation experiment? **13.** How would you choose which method to use to separate a mixture? 14. How is drinking water produced? 15. Why must water used in chemical analysis be pure?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Topic CB1 Key concepts in biology	development of the microscope allowed us to find out more about sub - cellular structures found in plant, animal and bacterial cells?	2. What's the difference between a light and electron microscope? 3. What's the difference between magnification and resolution? 4. What are the sub-cellular parts and function of an animal cell? 5. What are the sub-cellular parts and function of a plant cell? 6. What are the three differences between animal and plant cells? 7. What is a eukaryotic cell? 8. How are gametes adapted to their function? 9. How is a ciliated cell adapted for its function? 10. How are the epithelial cell in the small intestine adapted to its function? 11. What is a prokaryotic cell? 12. How is a bacterial cell adapted for its function? 13. Which kind of large organic molecule are enzymes? 14. Why is an enzyme a biological catalyst? 15. How do enzymes work? 16. What are the role of enzymes in the digestive system? **17.** How is enzyme activity affected by temperature, pH and substrate concentration? 18. How would you calculate the rate of enzyme activity? 19. Which tests are used to identify the main substances in food? 20. What is diffusion, osmosis and active transport?	by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP2 Motion and Forces	What affects motion?	1. What is the difference between the speed of an object and its velocity? 2. How do we represent all of the forces acting upon an object? 3. What are resultant forces and how do you calculate them? 4. What happens to the motion of an object when the forces on it are balanced? What if they are unbalanced? (Newton's First Law) **5. What is centripetal force? (H)** 6. What is the difference between mass and weight? 7. What are the factors that determine the weight of an object? 8. How do you calculate weight? 9. What factors affect the acceleration of an object and how do you calculate them? (Newton's Second Law) **10. What is inertial mass and how is it defined? (H)** 11. What is Newton's Third Law and how does it apply to stationary objects? **12. How do objects affect each other when they collide? (H)** **13. How is momentum calculated? (H)** **14. How is momentum related to force and acceleration? (H)** **15. What happens to momentum in collisions? (H)** 16. How do we measure and calculate human reaction times? 17. What are the factors that affect stopping distances? 18. What is work done and how is it calculated? 19. What is kinetic energy and how is it calculated? 20. How are work done and kinetic energy related to breaking distances? 21. What are the dangers caused by large decelerations and how can these be reduced? **22. How can you use momentum to calculate the forces involved in crashes? (H)**	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB2 Cells and Control	What is mitosis and its importance in growth, repair and asexual reproduction?	1)What are stem cells, where are they found and what can they be used for? 2)What are the benefits and risks of using stem cells in medical treatments? 3)How do animals grow? 4)How are percentile charts used to monitor growth? 5)Why is differentiation of cells important in animals? And can you give any examples? 6)How do plants grow? 7)How are some plant cells adapted to their function? 8)Why is differentiation important in plants? 9)Why is mitosis important? 10)What happens in the different stages of mitosis? 11)How do cancer tumours occur? 12)What is the structure and function of the 3 types of neurones? 13)How is the sensory neurone adapted to its function? 14)How does the nervous system allow the body to respond to stimuli? 15)How are the relay neurone and motor neurone adapted to their function? 16)How does the structure of the reflex arc allow faster reactions to stimuli? 17)How does an impulse travel across a synapse? 18)How do you calculate neurotransmission speed?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC3 Structure of the atom	How does an elements place in the periodic table relate to its atomic structure?	1. How has the model of the atom changed over the last 200 years? 2. How do parts of atoms compare with each other 3. Why do atoms have no overall charge? 4. Why is most of the mass of an atom found in the nucleus? 5. What does the atomic number tell you about an element? 6. How can you calculate the numbers of protons, neutrons and electrons in atoms? 7. How can you describe an identify isotopes of elements? 8. Why are the relative atomic masses for some elements not whole numbers? 9. How do you calculate the relative atomic mass of an element?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC4 Periodic table	How does an elements place in the periodic table relate to its atomic structure?	1. What are the symbols of some common elements? 2. How did Mendeleev arrange elements into a periodic table? 3. How did Mendeleev use his table to predict the properties of undiscovered elements? 4. Why was Mendeleev right to alter the order of some elements in his table? 5. What is an elements atomic number? 6. How are the elements arranged in the modern periodic table? 7. What information does an electronic configuration give? 8. How do you work out and show the electronic configuration of an element? 9. How is the electronic configuration of an element related to its position in the periodic table?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP3 Conservation of energy	How do we transfer and use energy?	How is energy transferred between different stores? How can we represent energy transfers in diagrams? What happens to the total amount of energy when energy is transferred? What is efficiency and how do we calculate it? How can we reduce unwanted energy transfers? What does thermal conductivity mean and what factors affect it? How can we reduce unwanted energy transfers? What factors affect the gravitational potential energy stored in an object? How do you calculate gravitational potential energy? How do you calculate the amount of kinetic energy stored in a moving object? What non-renewable resources can we use? How do we use them? How is the use of non-renewable energy resources changing?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB4 Natural Selection and Genetic Modification	How has the theory of evolution developed? What are the benefits and risks of selective breeding and genetic engineering? Why are tissue culture, GMOs, fertilisers and biological control used in agriculture?	1)What is evolution? 2)How do fossils, stone tools and genetic analysis provide evidence for evolution? 3)What is natural selection and how has it lead to evolution? 4)How did Darwin and Wallace come up with the idea of natural selection? 5)How does antibiotic resistance in bacteria provide evidence to support Darwin's theory? 6)How are organisms classified as five kingdoms? 7)How has genetic analysis changed our understanding of evolution? 8)How are organisms classified as three domains? 9)How are organisms classified as five kingdoms? 10)How has genetic analysis changed our understanding of evolution? 11)How are organisms classified as three domains? 12)What is the difference between breeds and varieties? 13)How is selective breeding carried out? 14)What are the benefits and risks of selective breeding? 15)How AND why do we genetically engineer organisms? 16)What are the benefits and risks of genetic engineering?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB3 Genetics	How does genes produce our features and allow features to be passed on from parents to their offspring?	1. What is meiosis? 2. Why is meiosis necessary for sexual reproduction? 3. What is a gamete? 4. What is the structure of DNA? 5. What is an allele? 6. How is the sex of offspring determined in humans? 7. How do we use family pedigrees to show inheritance? 8. What is a mutation and how do they cause variation? (H) 9. What is the difference between genetic and environmental variation? (H) 10. What is the difference between continuous and discontinuous variation? (H)	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC5 Ionic Bonding	Can you link the properties of ionic compounds to their formation and structure?	How are ions formed? How can the numbers of subatomic particles in an ion be calculated? What is an ionic bond? What is an ionic lattice? What holds the ions together? How can we work out the formula of an ionic compound? What particles and forces are present in ionic compounds? Why do ionic compounds have high melting points and boiling points? Why do ionic compounds conduct electricity when they are liquids or dissolved in water but not when they are solids?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP4 Waves	What are the characteristics of waves?	1. What do waves transfer? 2. How can we describe waves? 3. What is the difference between a longitudinal wave and a transverse wave? 4. How can we calculate the speed (or velocity) of a wave? 5. How can we measure the speed of sound in air? 6. How can we measure the speed of waves on water? 7. What happens when waves refract? 8. When does refraction occur? 9. How does a change in the speed of a wave affect its direction? (H) 10. What happens when waves are reflected or refracted? 11. What happens when waves are transmitted or absorbed? 12. How are changes in velocity, frequency and wavelength related?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP5 Light and the electromagnetic spectrum	How do EM waves behave, and how are they used?	**1.** What are some examples of electromagnetic waves? 2. What do all electromagnetic waves have in common? 3. Which electromagnetic waves can our eyes detect? 4. What are the main groupings of waves in the electromagnetic spectrum? 5. What characteristics of electromagnetic waves are used to group them? 6. What are some of the differences in the behaviour of waves in different parts of the electromagnetic spectrum? (H) 7. What are some uses of radio waves, microwaves and infrared? 8. How are radio waves produced and detected? (H) 9. How do different substances affect radio waves, microwaves and infrared? (H) 10. How does the radiation emitted by a body depend on its temperature? 11. How does the temperature of a body depend on the amount of power it absorbs and radiates? (H) 12. How is the temperature of the Earth affected by different factors? (H) 13. What are some uses of ultraviolet waves? 14. What are some uses of X-rays and gamma rays? 15. How do different substances affect ultraviolet, X-rays and gamma rays?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB5 Health, Disease and the Development of Medicines	What can impact health?	1)What is health? 2)What is the difference between a communicable and non-communicable disease? 3)Why can having one disease increase the chance of getting another? 4)What do non-communicable diseases have in common? 5)How can diet affect malnutrition? 6)Why does alcohol cause problems for people and for society? 7)What is obesity? 8)How do you calculate BMI? 9)What does waist to hip ratio tell you? 10)What is cardiovascular disease? 11)What effect do smoking and obesity have on the risk of developing CVD? 12)What are the range of treatments for CVD? 13)What are pathogens? 14)Which pathogens cause some common infections? 15)What are the symptoms of some common infections? 16)How can pathogens spread? 17)How can the spread of pathogens be reduced or prevented? 18)How do physical and chemical barriers of the body protect against infection? 19)How can you spread of sexually transmitted infection be reduced or prevented? 20)What is the function of the immune system? 21)What is the difference between a phagocyte and lymphocyte? 22)How does the immune system attack a pathogen? 23)How does immunisation protect the body from disease?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC8 Acids and Alkalis	What happens in reactions between acids and alkalis and how can these reactions be useful?	1. What are the effects of some acids and alkalis on indicators? 2. What does the pH tell us about some ions in solutions? 3. What is the difference between dilute and concentrated solutions? 4. What is the difference between strong and weak acids? 5. Why are metal oxides bases? 6. What happens during neutralisation? 7. How can a soluble salt be prepared from an acid and an insoluble base? 8. What are alkalis? 9. What happens when alkalis react with acids? 10. How do we balance chemical equations? 11. What happens to the ions from acids and alkalis during neutralisation? 12. What is titration? 13. How do we make a soluble salt using titration? 14. What happens when an acid reacts with a metal? 15. What happens when an acid reacts with a metal carbonate? 16. What are the tests for hydrogen and carbon dioxide? 17. What are the rules for solubility of common substances in water? 18. How do you prepare a sample of a pure, dry insoluble salt? 19. How do you predict whether a precipitate will be formed in a reaction?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC6 Covalent Bonding	How can non-metals form simple molecules?	What are the names of some simple covalent molecules? How are covalent bonds formed? How can dot and cross diagrams be used to explain the formation of covalent molecules?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC7 Types of substance	How does the structure of compounds affect their properties?	Why do simple molecular compounds have low boiling and melting points? Why are simple molecular compounds poor conductors of electricity? What is a polymer? How are simple molecular structures different from giant covalent structures? What are the differences in structure between the different allotropes of carbon? How do we explain the properties and uses of graphite, diamond and fullerenes? What are the typical physical properties of metals and non-metals? How are the particles arranged in metals? How can we explain the properties of a metal in terms of its bonding and structure?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC10 Electrolysis	How can ionic compounds be separated using electricity?	What is an electrolyte? What happens to ions during electrolysis? How do you represent the reactions taking place at the electrodes during electrolysis? How do you predict the products formed in the electrolysis of molten zinc chloride? How do you explain the products formed in the electrolysis of sodium chloride solution? How is copper purified using electrolysis?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC11 Obtaining and using metals	How are metals extracted and how does this link to reactivity?	What are the similarities and differences in the way different metals react with water, acids and salt solutions? What happens to metal atoms when they react with water and acids? How do you explain displacement reactions as redox reactions? Which metals are found uncombined in the Earth's crust? How is the method of extraction of a metal related to its position in the reactivity series? How are biological methods used to extract some metals? (H) How do you explain oxidation and reduction in terms of oxygen? What types of reaction happen to ores when metals are extracted? How is the position of a metal in the reactivity series related to its resistance to corrosion? What are the advantages of recycling a metal? When might recycling a material not be worthwhile? What are the factors to consider in a life cycle assessment?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB6 Plant Structures and their functions	How are plants adapted to survive?	What happens during photosynthesis and why is it important? How is the leaf adapted for photosynthesis? What are the limiting factors of photosynthesis and how do they affect the rate of photosynthesis? How is the rate of photosynthesis related to light intensity? How do we find out how light intensity affects photosynthesis? How are root hairs adapted for their function? How do plant roots use diffusion, osmosis and active transport? what are stomata and how do they work? How are the xylem and phloem adapted for their function? What is transpiration? What factors affect the rate of transpiration? How is sucrose translocated around the plant?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB9 Ecosystems and Material Cycles	How are organisms interlinked within ecosystems?	1)What is an ecosystem, community, population and habitat? 2)Why is interdependence in communities important? 3)How do you calculate abundance? 4)How can population size be estimated using a quadrat? 5)What are abiotic factors and how do they affect communities? 6)How does pollution affect communities? 7)How are belt transects used to measure the effect of abiotic factors on the distribution of organisms? 8)What are biotic factors? 9)How can competition and predation affect communities? 10)How are some organisms dependent on other species? 11)How does parasitism affect the survival of some organisms? 12)How does mutualism affect the survival of some organisms? 13)How does fish farming affect ecosystems? 14)How does the introduction of a new species affect biodiversity? 15)What is eutrophication and how does it affect ecosystems? 16)How can animal species be conserved? 17)How can animal conservation protect biodiversity? 18)How can reforestation protect animal biodiversity? 19)How does water cycled through an ecosystem? 20)How is potable drinking water produced? 21)How are fossil fuels formed? 22)How is carbon cycled through an ecosystem? 23)What is the role of decomposers in the carbon cycle? 24)Why do plants need nitrates? 25)How do farmers increase the amount of nitrates in the soil? 26)What is the role of bacteria in the nitrogen cycle?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP10 Magnetism and the Motor effect	What are magnetic forces and how are they used?	1. How are magnets used? 2. What shape are magnetic fields and how can they be plotted? 3. What is the evidence that the Earth has a magnetic field? 4. How is a magnetic field around a wire related to the current? 5. What factors affect the strength of the magnetic field around the wire? 6. How does the magnetic field around a wire change when the wire is made into a coil? 7. How can electricity and magnetism combine to produce forces? (H) 8. How is the force on a wire in a magnetic field used to make an electric motor turn? (H) 9. How can we calculate the size of the force produced by a current in a magnetic field? (H)	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC9 Calculations involving masses	How can maths in chemistry explain equations and formulae?	How do you calculate the relative formula mass of a compound? What is the difference between an empirical formula and a molecular formula? How do you determine the empirical formula of a compound? How do you calculate the concentration of a solution? How does the law of conservation of mass explain why magnesium increases in mass when it is burned? How do you calculate the masses of reactants and products in a reaction? How do you calculate the number of moles and number of particles of a substance? What controls the mass of product formed in a reaction? How do you work out a balanced equation from the masses of reactants and/or products?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP6 Radioactivity	What is radioactivity, and how is it used?	What particles make up atoms? How big are atoms? How has our model of the atom changed over time? What are the relative charges and masses of the particles which make up atoms? What are isotopes of an element? How can isotopes be represented using symbols? How are electrons arranged in an atom? What happens to atoms when they absorb or emit electromagnetic radiation? How do atoms become ionised? What is meant by background radiation? What are the sources of background radiation? How is radioactivity detected and measured? What are alpha particles, beta particles and gamma radiation? How do the different kinds of radiation compare in their ability to ionise atoms? How do the different kinds of radiation compare in their ability to penetrate materials? How does beta decay occur? How are atomic and mass numbers affected by different kinds of decay? How can radioactive decays be represented in nuclear equations? How does the activity of a substance change over time? What does the half-life of a radioactive substance describe? How can the half-life be used to work out how much of a substance decays? What are the dangers of ionising radiation? What precautions should be taken to protect people using radiation? What is the difference between contamination and irradiation effects?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC12 Reversible reactions and equilibria	What is dynamic equilibrium and how do different factors affect the position of equilibrium?	What is meant by dynamic equilibrium How do changes in temperature, pressure and concentration affect the equilibrium position?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP7 Energy – Forces doing work	How is energy transferred by doing work on an object?	How can energy of a system be changed? What is work done and how can it be measured and calculated? What is power and how is it calculated?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP8 Forces and their effects	How do objects affect each other?	What forces are there when two objects are touching? How can objects affect each other without touching? How are pairs of forces represented? What is a free body force diagram? How and why do we resolve forces? How do all of the forces acting on a single body combine to affect it? How do you calculate the turning effect of a force? How can you use moment calculations to work out if two rotational forces will balance? How do levers and gears transmit the rotational effects of forces?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC14 Rate of Reaction	How can different factors affect the speed of a reaction?	1. What changes can occur as a reaction proceeds? 2. How can we investigate rates of reaction? 3. How are graphs used to show rates of reaction? 4. What has to happen for two particles to react? 5. How does the speed of particles affect the rate of reaction? 6. Why do changes in temperature, concentration, surface area and pressure affect rates of reaction? 7. What is a catalyst? 8. How do catalysts work? 9. What are enzymes used for?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB7 Animal Coordination and Control	How do our bodies regulate our internal environment?	1. What are hormones and where are they produced? 2. What are the names of the target organs? 3. What is a positive feedback mechanism? 4. How does adrenaline prepare the body for fight or flight? 5. What is a negative feedback mechanism? 6. How does thyroxine affect metabolic rate? 7. What is the menstrual cycle? 8. What are the roles of oestrogen, progesterone, LH and FSH in the menstrual cycle? 9. How can hormones and barrier methods be used as contraception? 10. How can hormones increase the chance of pregnancy? 11. How is IVF carried out? 12. What is homeostasis? 13. How is glucose concentration measured? 14. How is blood glucose regulated? 15. How is type 1 diabetes caused and controlled? 16. How is type 2 diabetes caused and controlled? 17. What is the correlation between body mass and type 2 diabetes?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC13 Groups in the periodic table	How does the position of an element affect its chemical properties?	1. What are the main properties of alkali metals? 2. How do alkali metals react with water? 3. Why do alkali metals have different reactivities? 4. How do the physical properties of halogens change down group 7? 5. How do you test for chlorine? 6. How do halogens react with metals? 7. How can displacement reactions be used to work out the reactivity of halogens? 8. How can we explain the reactivity of halogens? 9. What happens to halogen atoms and halide ions during displacement? 10. Why are Noble gases unreactive? 11. How can Noble gases be used? 12. What trends are there in the physical properties of the Noble gases?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP9 Electricity and Circuits	How is electricity used in everyday life?	1. How does the structure of the atom affect the flow of electric current? 2. What are the names and symbols of components used in electric circuits? 3. What are the differences between series and parallel circuit? 4. What is charge and how does it link to current? 5. How is electric current measured? 6. What happens to the electric current in a series circuit and in a parallel circuit? 7. What is potential difference and how do you measure it? 8. What happens to the potential difference in a series circuit and in a parallel circuit? 9. What is electrical resistance? 10. What is the connection between potential difference, current and resistance? 11. How does adding resistors in series and parallel affect the resistance of the circuit? 12. How does the potential difference affect the current and resistance in fixed resistors, lamps and diodes? 13. How does light intensity and temperature affect light dependent resistors and thermistors? 14. How are circuits used to explore resistance in lamps, thermistors and LDRs? 15. What are the advantages and disadvantages of the heating effect of a current? 16. How can the energy transfer that causes the heating effect be explained? **17. How can unwanted energy transfer be reduced in wires? (H)** 18. What is power and what units are used to measure it? 19. How is power related to the energy used in joules? 20. How can you calculate power when you know current, potential	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CB8 Exchange and transport in animals	How and why are substances transported around our bodies?	1)What substances need to be transported into and out of the body? 2)Why is the surface area: volume ratio important for exchange of substances? 3)How are the lungs adapted for gas exchange? 4)What are the components of blood? 5)How are the components of blood adapted for their function? 6)What are the components of the circulatory system? 7)How are blood vessels adapted for their function? 8)What is the structure of the heart? 9)How does the heart pump blood? 10)How do you calculate cardiac output? 11)Why do organisms need to respire? 12)What is the word equation for respiration and why is it an exothermic reaction? 13)What is the difference between aerobic and anaerobic respiration?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC16 Fuels	What is Crude oil and how is it used?	1. What are Hydrocarbons? 2. Why is Crude oil so useful? 3. Why is crude oil non-renewable? 4. How is crude oil separated? 5. What are the names and uses of the main fractions from crude oil? 6. What are the differences in the molecules found in different fractions from crude oil? 7. What is the main type of hydrocarbon found in crude oil? 8. What are the features of a homologous series of compounds? 9. Why do alkanes form a homologous series? 10. What happens during the complete combustion of a hydrocarbon? 11. What happens during the incomplete combustion of a hydrocarbon? 12. What problems does incomplete combustion cause? 13. Why do some hydrocarbon fuels release sulfur dioxide when they are used? 14. Why are oxides of nitrogen produced by engines? 15. What problems are caused by acid rain? 16. Why is Cracking needed? 17. What happens during the cracking of crude oil fractions? 18. What are the advantages and disadvantages of hydrogen and petrol as vehicle fuels?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC17 Atmosphere	Why is our atmosphere changing and what are the consequences?	1. What are the names of some common gases produced by volcanoes? 2. What evidence is there for the composition of the Earth's early atmosphere? 3. How do scientists explain the formation of the oceans? 4. What are the names of some greenhouse gases? 5. How is the greenhouse effect caused? 6. What is the link between fossil fuel combustion and climate change?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CC15 Heat energy changes in chemical reactions	Why do some reactions release heat whilst some absorb heat?	1. What are exothermic and endothermic reactions? 2. What are some examples of exothermic and endothermic reactions? 3. How can heat changes in solution be investigated? 4. How can endothermic and exothermic reactions be explained in terms of bonds? 5. How are exothermic and endothermic reactions modelled? 6. How are energy changes in reactions calculated (H)	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. Feedback is live throughout the lesson. Teachers circulate during phases to offer feedback.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP11 Electromagnetic Induction	What is Electromagnetic Induction and how is it used?	**What is meant by electromagnetic induction? (H)** What is a transformer? **How does a transformer work? (H)** What is the National Grid? Why are transformers used to help transmit electricity around the country?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP12	How do we describe the motion of particles relating volume, pressure and temperature?	How do the particle arrangements in solids, liquids and gases explain their properties? What happens to the particles when a substance changes state? How can you calculate the density of a substance? How can you calculate the density of a substance of an unknown volume? Describe an experiment to find the volume of an irregular object What effect does heating a substance have on the substance? How can we reduce unwanted energy transfers What do specific heat capacity and specific latent heat mean? How is a change in thermal energy related to the mass, specific heat capacity and temperature difference? How can we calculate the energy needed to make a substance melt or evaporate? How can we calculate the energy released when a substance condenses or freezes?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.

Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Topic CP13 Forces and Matter	How do forces affect the energy within a stretched object?	1. How do forces cause object to change shape? 2. What is the difference between elastic and inelastic deformation? 3. What is the relationship between force and extension when an object is deformed? 4. How can you conduct an experiment to investigate the extension and work done when applying forces to a spring? 5. What is the spring constant? 6. What is the equation that links force, extension and the spring constant? 7. Can you calculate the energy transferred in a spring?	Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. Exam questions are obtained from ExamWizard. Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.	Students provided with a homework booklet. Previously taught topics are assessed through exam questions. Students are provided with the knowledge to help them access the exam questions. Homework is checked and fed back on a weekly basis.