Calendar	Big Question/Theme	Small Questions	Assessment Opportunities and Criteria. Teacher feedback point (TFP)	Homework
Year 10 Topic P3 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?	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.

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Year 10 Topic B3 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.

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Year 10 Topic P4 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.

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Year 10 Topic B4 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.

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Year 10 Topic B5 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.

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Year 10 Topic C5 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.

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Year 10 Topic P5 Waves	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.

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Year 10 Topic C6 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.

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Year 10 Topic C7 Types of substanc e	**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.

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Year 10 Topic C8 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	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.

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Year 10 Topic P6 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.

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Year 10 Topic C9 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.

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Year 10 Topic B6 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.

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Year 10 Topic C10 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.

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Year 10 Topic C12 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.

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Year 10 Topic C11 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.

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Year 10 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.

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Year 10 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.

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Year 10 Topic B9 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.