

<u>Calendar</u>	<u>Big Question/Theme</u>	<u>Small Questions</u>	<u>Assessment Opportunities and Criteria. Teacher feedback point (TFP)</u>	<u>Homework</u>
Term 1 Year 10 Topic SP7 Astronomy TRIPLE SCIENCE	How as our understanding of the universe changed using observations?	<p><u>TRIPLE SCIENCE ONLY</u></p> <p>What objects make up the Solar System and how are they arranged? How have ideas about the Solar System changed with time? How have methods of observing the Solar System changed over time? Why is gravity different on different bodies in the Solar System? What kinds of different orbit are there? Why does the speed of a satellite affect the radius of its orbit? How do stars with masses similar to the Sun change with time? How do stars with much larger masses than the Sun change with time? How does the balance between thermal expansion and gravity affect stars? How does the red shift of stars vary with their distance from the Earth? How does red shift provide evidence for the expansion of the Universe? What are the Steady State and Big Bang theories? What evidence supports the Big Bang theory? What is CMB radiation?</p>	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 1 Year 10 Topic P4 Waves	What are the characteristics of waves?	<ol style="list-style-type: none"> 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? <p>TRIPLE ONLY</p> <ol style="list-style-type: none"> 1. How do our ears work? (H) 2. How are sound waves converted to waves in solids? (H) 3. How does frequency affect the energy transferred to a solid? (H) 4. What is ultrasound? (H) 5. How is ultrasound used in sonar systems? (H) 6. How is ultrasound used to look inside our bodies? (H) 7. What is infrasound? (H) 8. How does infrasound travel through the Earth? (H) 9. How can infrasound tell us about the inside of the Earth? (H) 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 Year 10 Topic B3 Genetics	How does genes produce our features and allow features to be passed on from parents to their offspring?	<ol style="list-style-type: none"> 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) <p><u>TRIPLE SCIENCE ONLY</u></p> <ol style="list-style-type: none"> 1. What is the HGP? 2. What are the benefits of mapping the human genome? 3. How can sequencing a person's genome influence their medical treatments? 4. What is protein synthesis? 5. What happens in transcription 6. What is translation? 7. What is a mutation and how can it alter the function of a protein? 8. How is the triplet code used for the production of proteins? 9. What did Mendel's experiments show? 10. Before Mendel, why did scientists struggle to understand inheritance? 11. Can you use diagrams (punnett squares) to represent monohybrid inheritance and probable outcomes? 12. What is codominance? 13. How are blood groups inherited? 14. Why do more men than women suffer from sex linked genetic disorders? 15. What is a mutation and how do they cause variation? 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 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? TRIPLE ONLY 1)What has been the impact of evolution by natural selection on modern Biology? 2)How does evidence in changes in vertebrate limbs support evolution by natural selection? 3)What is tissue culture and how is it carried out? 4)What are the advantages of using tissue culture in medical research and plant breeding? 5)How can crop plants be modified to make them resistant to insects? 6)What are the advantages and disadvantages of producing GM organisms? 7)What is the difference between biological and chemical control? 8)What are the advantages and disadvantages of using chemical control? 9)What are the advantages and disadvantages of using biological control?	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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly /10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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<p>Term 1 and Term 2</p> <p>Year 10</p> <p>Topic B5</p> <p>Health, Disease and the Development of Medicines</p>	<p>What can impact health?</p>	<p>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? TRIPLE ONLY 1)What is a virus? 2)What happens in the lytic and lysogenic pathways of a virus' life cycle? 3)How can we compare the effects of viruses? 4)How do plants protect themselves using physical barriers and chemical substances? 5)How do we use some of the substances plants make to protect themselves? 6)Why is aseptic technique important when testing the activity of plant substances on bacteria? 7)How does observing visible symptoms help in the identification of a plant disease? 8)How do distribution analysis and diagnostic testing help in the identification of a plant disease? 9)How are medicines developed? 10)What are antibiotics and why are they useful? 11)What are monoclonal antibodies? 12)How are monoclonal antibodies produced? 13)How are monoclonal antibodies used?</p>	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 Year 10 Topic SC13 Transition Metals TRIPLE SCIENCE	What are the properties and uses of metals?	<p><u>TRIPLE SCIENCE ONLY</u></p> <p>Where are the transition metals found in the periodic table?</p> <p>What are the typical properties of transition metals?</p> <p>What properties of iron make it a transition metal?</p> <p>Why do metals corrode?</p> <p>How can the surface of iron be protected from rusting?</p> <p>How does sacrificial protection protect iron from rusting?</p> <p>What is electroplating?</p> <p>Why are metals electroplated?</p> <p>How is electroplating done?</p> <p>What is an alloy?</p> <p>Why is iron mixed with other metals to make alloy steels?</p> <p>Why are alloys often stronger than pure metals?</p> <p>What are some common uses for aluminium, copper and gold?</p> <p>What are some common alloys containing aluminium or copper?</p> <p>What are different metals or their alloys chosen for different uses?</p>	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 Year 9 Topic C4	How does an elements place in the periodic table relate to its atomic structure?	<ol style="list-style-type: none"> 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? 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 1 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 1 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 1 Year 10 Topic C7 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly /10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 1 and 2 Year 10 Topic SC14 Quantitative analysis TRIPLE SCIENCE	Why is quantitative analysis important in Chemistry?	<p><u>TRIPLE SCIENCE ONLY</u></p> <p>What is meant by the terms theoretical yield and actual yield of a reaction? How do you calculate the percentage yield of a reaction? What are some reasons for the actual yield being less than the theoretical yield? What is meant by atom economy of a reaction? How do you calculate the atom economy of a reaction? How is data used on the best way to manufacture a product? How do you calculate the concentration of a solution in g dm^{-3}? How do you calculate the concentration of a solution in mol d^{-3}? How do you convert a concentration in g dm^{-3} into mol dm^{-3}? What is Avogadro's law? What is the molar volume of a gas? How do you carry out an acid-alkali titration? How do you calculate the number of moles of solute in a given volume of solution? How do you calculate the concentration using the results of an acid-alkali titration?</p>	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 2 Year 10 Topic P5 Waves	How do EM waves behave, and how are they used?	<p>TRIPLE ONLY</p> <ol style="list-style-type: none"> 1. How can you use ray diagrams to show reflection and refraction? 2. What is the law of reflection? 3. What is total internal reflection? 4. What are specular and diffuse reflection? 5. Why do surfaces have different colours? 6. How do filters make coloured light? 7. What factors affect the power of a lens? 8. How do different shaped lenses refract light? 9. How do lenses produce real and virtual images? 10. What factors affect the power of a lens? 11. How do different shaped lenses refract light? 12. How do lenses produce real and virtual images? <p>COMBINED AND TRIPLE</p> <ol style="list-style-type: none"> 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? 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 2 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? <u>TRIPLE SCIENCE ONLY</u> What are some of the uses of radioactive substances in diagnosis? Why do isotopes used in PET scanners have to be produced nearby? How is radiation used to treat tumours? What different types of nuclear reactions are there? What are the advantages of using nuclear power to generate electricity? What are the disadvantages of nuclear power? What are the products of the fission of uranium-235? What is a chain reaction and how can it be controlled? How is fission used in nuclear power stations? How is nuclear fusion different to nuclear fission? What are the conditions needed for nuclear fusion? Why haven't practical fusion power stations been developed yet?	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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 2 Year 10 Topic C8 Acids and Alkalis	What happens in reactions between acids and alkalis and how can these reactions be useful?	<ol style="list-style-type: none"> 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 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 2 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 2 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 2 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 2 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?	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 2 Year 10 Topic SC15 Dynamic Equilibria TRIPLE SCIENCE	Why is the Haber process important and how are the conditions for the reaction chosen	<p><u>TRIPLE SCIENCE ONLY</u></p> <p>What are fertilisers?</p> <p>What are the similarities and differences between making a fertiliser in a laboratory and in a factory?</p> <p>How is the Haber process used in the manufacture of ammonium nitrate?</p> <p>How is the time taken to reach equilibrium affected by changes in condition?</p> <p>How are conditions chosen for industrial chemical reactions?</p> <p>How are reaction pathways chosen for industrial processes?</p>	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>

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Term 3 Year 10 Topic CP7/SP8 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 3 Year 10 Topic CP8/SP9 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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 2 and 3 Year 10 Topic SC16 Chemical Cells and Fuel Cells TRIPLE SCIENCE	How is electricity produced using cells?	<u>TRIPLE SCIENCE ONLY</u> Why do batteries go flat? What happens in a hydrogen-oxygen fuel cell? What are the strengths and weaknesses of fuel cells?	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.	Homework is revision of the topic's knowledge organiser. Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. Students will complete 2 high stakes quizzes in class per half term on current teaching topics. Student results will be recorded on a tracking sheet

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Term 3 Year 10 Topic B6 Plant Structures and their functions	How are plants adapted to survive?	<p> 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? </p> <p> <u>SEPARATE SCIENCE ONLY</u> How are plants adapted to survive in extreme environments? What are the names of some plant hormones? What are positive and negative phototropism and gravitropism? How do auxins cause tropisms in shoots and roots? What are the uses of plant hormones in agriculture? </p>	<p> Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic. </p> <p> Exam questions are obtained from ExamWizard. </p> <p> Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking. </p>	<p> Homework is revision of the topic's knowledge organiser. </p> <p> Students will be quizzed twice weekly / 10 on firefly. Often previously taught topics. </p> <p> Students will complete 2 high stakes quizzes in class per half term on current teaching topics. </p> <p> Student results will be recorded on a tracking sheet </p>

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Term 3 Year 11 Topic B7 Animal Coordination and Control	How do our bodies regulate our internal environment?	<ol style="list-style-type: none"> 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? <p>TRIPLE SCIENCE ONLY</p> <ol style="list-style-type: none"> 1)Why is it important to control core body temperature? 2)How is body temperature controlled? 3)What is the difference between vasoconstriction and vasodilation? 4)Why is osmoregulation important? 5)What is the structure of the urinary system? 6)How can kidney failure be treated? 7)What are the parts of the nephron? 8)How does filtration and reabsorption take place in the nephron? 9)How does ADH affect nephrons? 	<p>Each Ks4 module is followed by a common assessed task (CAT). This is comprised of a mixture of exam questions based on that topic.</p> <p>Exam questions are obtained from ExamWizard.</p> <p>Teacher will mark exam questions and provide a class feedback sheet. Students will NTG by responding to marking.</p>	<p>Homework is revision of the topic's knowledge organiser.</p> <p>Students will be quizzed twice weekly /10 on firefly. Often previously taught topics.</p> <p>Students will complete 2 high stakes quizzes in class per half term on current teaching topics.</p> <p>Student results will be recorded on a tracking sheet</p>