

<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>
Autumn 1 Year 10 Topic P4 Waves	What are the characteristics of waves?	<ol style="list-style-type: none"> <li>1. What do waves transfer?</li> <li>2. How can we describe waves?</li> <li>3. What is the difference between a longitudinal wave and a transverse wave?</li> <li>4. How can we calculate the speed (or velocity) of a wave?</li> <li>5. How can we measure the speed of sound in air?</li> <li>6. How can we measure the speed of waves on water?</li> <li>7. What happens when waves refract?</li> <li>8. When does refraction occur?</li> <li>9. How does a change in the speed of a wave affect its direction? (H)</li> <li>10. What happens when waves are reflected or refracted?</li> <li>11. What happens when waves are transmitted or absorbed?</li> <li>12. How are changes in velocity, frequency and wavelength related?</li> </ol> <p><b>TRIPLE ONLY</b></p> <ol style="list-style-type: none"> <li>1. How do our ears work? (H)</li> <li>2. How are sound waves converted to waves in solids? (H)</li> <li>3. How does frequency affect the energy transferred to a solid? (H)</li> <li>4. What is ultrasound? (H)</li> <li>5. How is ultrasound used in sonar systems? (H)</li> <li>6. How is ultrasound used to look inside our bodies? (H)</li> <li>7. What is infrasound? (H)</li> <li>8. How does infrasound travel through the Earth? (H)</li> <li>9. How can infrasound tell us about the inside of the Earth? (H)</li> </ol>	<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 weekly /10</p> <p>Student results will be recorded on a tracking sheet.</p>

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Autumn 1 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"> <li>1. How can you use ray diagrams to show reflection and refraction?</li> <li>2. What is the law of reflection?</li> <li>3. What is total internal reflection?</li> <li>4. What are specular and diffuse reflection?</li> <li>5. Why do surfaces have different colours?</li> <li>6. How do filters make coloured light?</li> <li>7. What factors affect the power of a lens?</li> <li>8. How do different shaped lenses refract light?</li> <li>9. How do lenses produce real and virtual images?</li> <li>10. What factors affect the power of a lens?</li> <li>11. How do different shaped lenses refract light?</li> <li>12. How do lenses produce real and virtual images?</li> </ol> <p>COMBINED AND TRIPLE</p> <ol style="list-style-type: none"> <li>1. What are some examples of electromagnetic waves?</li> <li>2. What do all electromagnetic waves have in common?</li> <li>3. Which electromagnetic waves can our eyes detect?</li> <li>4. What are the main groupings of waves in the electromagnetic spectrum?</li> <li>5. What characteristics of electromagnetic waves are used to group them?</li> <li>6. What are some of the differences in the behaviour of waves in different parts of the electromagnetic spectrum? (H)</li> <li>7. What are some uses of radio waves, microwaves and infrared?</li> <li>8. How are radio waves produced and detected? (H)</li> <li>9. How do different substances affect radio waves, microwaves and infrared? (H)</li> <li>10. How does the radiation emitted by a body depend on its temperature?</li> <li>11. How does the temperature of a body depend on the amount of power it absorbs and radiates? (H)</li> <li>12. How is the temperature of the Earth affected by different factors? (H)</li> <li>13. What are some uses of ultraviolet waves?</li> <li>14. What are some uses of X-rays and gamma rays?</li> <li>15. How do different substances affect ultraviolet, X-rays and gamma rays?</li> </ol>	<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 weekly /10</p> <p>Student results will be recorded on a tracking sheet.</p>

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Autumn 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? <b>TRIPLE ONLY</b> 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 weekly /10  Student results will be recorded on a tracking sheet.

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Autumn 1 Year 10 Topic B5 Health, Disease and the Development of Medicines	What can impact health?	<ol style="list-style-type: none"> <li>1)What is health?</li> <li>2)What is the difference between a communicable and non-communicable disease?</li> <li>3)Why can having one disease increase the chance of getting another?</li> <li>4)What do non-communicable diseases have in common?</li> <li>5)How can diet affect malnutrition?</li> <li>6)Why does alcohol cause problems for people and for society?</li> <li>7)What is obesity?</li> <li>8)How do you calculate BMI?</li> <li>9)What does waist to hip ratio tell you?</li> <li>10)What is cardiovascular disease?</li> <li>11)What effect do smoking and obesity have on the risk of developing CVD?</li> <li>12)What are the range of treatments for CVD?</li> <li>13)What are pathogens?</li> <li>14)Which pathogens cause some common infections?</li> <li>15)What are the symptoms of some common infections?</li> <li>16)How can pathogens spread?</li> <li>17)How can the spread of pathogens be reduced or prevented?</li> <li>18)How do physical and chemical barriers of the body protect against infection?</li> <li>19)How can you spread of sexually transmitted infection be reduced or prevented?</li> <li>20)What is the function of the immune system?</li> <li>21)What is the difference between a phagocyte and lymphocyte?</li> <li>22)How does the immune system attack a pathogen?</li> <li>23)How does immunisation protect the body from disease?</li> </ol> <p><b>TRIPLE ONLY</b></p> <ol style="list-style-type: none"> <li>1)What is a virus?</li> <li>2)What happens in the lytic and lysogenic pathways of a virus' life cycle?</li> <li>3)How can we compare the effects of viruses?</li> <li>4)How do plants protect themselves using physical barriers and chemical substances?</li> <li>5)How do we use some of the substances plants make to protect themselves?</li> <li>6)Why is aseptic technique important when testing the activity of plant substances on bacteria?</li> <li>7)How does observing visible symptoms help in the identification of a plant disease?</li> <li>8)How do distribution analysis and diagnostic testing help in the identification of a plant disease?</li> <li>9)How are medicines developed?</li> <li>10)What are antibiotics and why are they useful?</li> <li>11)What are monoclonal antibodies?</li> <li>12)How are monoclonal antibodies produced?</li> <li>13)How are monoclonal antibodies used?</li> </ol>	<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 weekly /10</p> <p>Student results will be recorded on a tracking sheet.</p>

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Autumn 1 Year 10 Topic C8	What happens in reactions between acids and alkalis and how can these reactions be useful?	<ol style="list-style-type: none"> <li>1. What are the effects of some acids and alkalis on indicators?</li> <li>2. What does the pH tell us about some ions in solutions?</li> <li>3. What is the difference between dilute and concentrated solutions?</li> <li>4. What is the difference between strong and weak acids?</li> <li>5. Why are metal oxides bases?</li> <li>6. What happens during neutralisation?</li> <li>7. How can a soluble salt be prepared from an acid and an insoluble base?</li> <li>8. What are alkalis?</li> <li>9. What happens when alkalis react with acids?</li> <li>10. How do we balance chemical equations?</li> <li>11. What happens to the ions from acids and alkalis during neutralisation?</li> <li>12. What is titration?</li> <li>13. How do we make a soluble salt using titration?</li> <li>14. What happens when an acid reacts with a metal?</li> <li>15. What happens when an acid reacts with a metal carbonate?</li> <li>16. What are the tests for hydrogen and carbon dioxide?</li> <li>17. What are the rules for solubility of common substances in water?</li> <li>18. How do you prepare a sample of a pure, dry insoluble salt?</li> <li>19. How do you predict whether a precipitate will be</li> </ol>	<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 weekly /10</p> <p>Student results will be recorded on a tracking sheet.</p>