

½ TERM TOPIC	TAUGHT CURRICULUM	TAUGHT SKILLS	SUMMATIVE ASSESSMENT TITLE/TYPE	ASSESSMENT CRITERIA	LEARNED CURRICULUM
1-3	<p>Forces</p> <ul style="list-style-type: none"> ● Combining vectors ● Use distance and displacement as examples of scalars and vectors ● Calculating weight ● Free body diagrams ● Using vector diagrams to calculate resultant forces ● Resolving forces (HT) ● Calculating work done ● Hooke's Law definition and calculations ● Elastic potential energy calculations ● Moments calculations ● Explanations of gears used to transmit rotational forces ● Pressure calculations ● Calculating 	<p>Using and rearranging formulae to perform calculations.</p> <p>Accurate use of ruler to measure extension of a spring</p> <p>Using a balance bar to calculate moments</p>	20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<p><i>Forces</i></p> <ul style="list-style-type: none"> ● <i>Which quantities are scalars and which are vectors</i> ● <i>List which forces are contact and which are non-contact</i> ● <i>Mass and weight definitions</i> ● <i>Calculating simple resultant forces</i> ● <i>Changing the shape of objects</i> ● <i>Examples of everyday moments in action</i> ● <i>Properties of pressure in fluids</i>

Curriculum Assessment Map

Year: Year 10

Subject + Course details: <Combined Science Physics [AQA](#)>

	<p>pressure in fluids (HT)</p> <ul style="list-style-type: none"> • Upthrust on submerged objects (HT) • Theory on atmospheric pressure 				
4-6	<ul style="list-style-type: none"> • Motion • Difference between speed and velocity. • Equations of uniform acceleration. • Free fall and terminal velocity. • Newton's laws of motion. • Stopping distances. • Momentum. 	<p>Using and rearranging formulae to perform calculations.</p> <p>Interpreting graphs: specifically the difference between distance-time graphs and velocity-time graphs and being able to convert between the two.</p> <p>Understand how a change in velocity affects the thinking distance and the stopping distance of a vehicle. .</p>	<p>20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.</p>	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures</p>	<p>Motion</p> <ul style="list-style-type: none"> • Measure a set distance out in a safe outdoor space near your home. Time yourself riding, running, walking, rollerblading etc the distance. Calculate the average speed of each mode of transport. • Create a distance-time and velocity-time graph for your journey into school. • Research real life examples of each of Newton's three laws.

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1-3	<p><u>Homeostasis:</u></p> <p>Explain what homeostasis is and why it is important.</p> <p>Describe examples of conditions that need to be controlled.</p> <p>Describe the roles of the nervous system and the endocrine system in homeostasis, Describe the main components of a control system and their functions.</p> <p>Explain the importance of reflex actions and give examples. Describe the differences between voluntary and reflex actions</p> <p>Identify the cerebral cortex, cerebellum and medulla on a diagram and describe the function of each.</p> <p>Define the term 'accommodation'. Describe how the eye changes to focus on near and distant objects. Complete simple ray diagrams</p>	<p>Plan and carry out an investigation into the effect of a factor on human reaction time</p> <p>Describe and use different methods to measure reaction time.</p> <p>Planning and writing a scientific method</p> <p>Complete ray diagrams.</p> <p>Investigate how exercise affects body temperature and / or sweating and report on the findings.</p> <p>Required practical: plan and carry out an investigation into the effect of light on plant shoots. Observe, present and analyse the results in a later lesson. Interpret results of plant hormone experiments using secondary sources.</p>	20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<p>Structure: the CNS is made up of the brain and spinal cord; receptors, different types of neurones, coordinator as brain or spinal cord, effectors, synapses.</p> <p>Describe the stages of a reflex action</p> <p>State and describe the function of each structure.</p> <p>Describe the endocrine system and define the term hormone.</p> <p>Describe where water, ions and urea are lost from the body. explain why there is no control over water, ion and urea loss by the lungs and skin. explain when cells might gain or lose too much water, in terms of osmosis</p> <p>Describe the effect of too much or too little water on cells</p>

Curriculum Assessment Map**Year: 10****Subject + Course details: <Combined Science Biology [AQA](#)>**

	<p>to show normal vision, long-sightedness and short-sightedness</p> <p>Describe different methods to measure body temperature. explain how body temperature is monitored and controlled. Describe and explain the changes that happen when body temperature is too high or too low. explain why we drink more fluid during hot weather.</p> <p>Relate hormone release and hormone action to the control system model introduced in. Label a diagram of the organs in the endocrine system. Explain why the pituitary gland is often called the master gland. Compare the actions of the nervous and endocrine systems.</p> <p>Describe how blood glucose concentration is monitored and controlled. explain when insulin is produced and how it helps to control blood glucose levels. Describe glycogen as a stored carbohydrate. HT: explain when glucagon is produced by the pancreas and its effect on blood glucose levels. explain how insulin and</p>				<p>Describe the advantages and disadvantages of a kidney transplant.</p> <p>Explain how a kidney machine works.</p> <p>Describe hormonal and non-hormonal methods of contraception. explain how hormonal and non-hormonal contraceptives work.</p>
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	<p>glucagon work together to control blood glucose levels.</p> <p>Identify the site of production and target organs for ADH. Describe the effects of ADH on kidney tubules. explain, with the aid of a diagram, how ADH controls the concentration of the blood using a negative feedback mechanism</p> <p>Describe secondary sexual characteristics of boys and girls. explain the cause of these changes in boys and girls and their relevance in reproduction. Describe the menstrual cycle and fertility including the role of hormones</p> <p>Describe the menstrual cycle and fertility including the role of hormones . Know the glands which produce Oestrogen, Progesterone, FSH and LH, their target organs & effects. HT: explain the interaction between these hormones in the control of the menstrual cycle.</p> <p>Describe the use of fertility drugs in women with low FSH levels. Use a model, eg a flow diagram to explain the process</p>				
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	<p>of In Vitro Fertilisation (IVF). Evaluate the use of fertility treatments.</p> <p>Describe how plant shoots and roots respond to light and gravity. Draw diagrams to explain the role of auxin in plant responses in terms of unequal distribution in shoots and roots. HT: Describe the functions of gibberellins and ethene in plants.</p>				
4-6	<p><u>Inheritance and Evolution</u></p> <p>Describe sexual reproduction in animals and plants Explain why sexual reproduction produces variation in the offspring, but asexual reproduction does not.</p> <p>Describe cuttings as clones of plants.</p> <p>Explain the term gametes and describe their genetic material. explain why sexual reproduction results in variety</p> <p>Describe advantages and disadvantages of sexual and asexual reproduction. Describe some organisms that can reproduce by both methods: malarial parasites reproduce</p>	<p>Draw diagrams to explain how gametes are formed in meiosis.</p> <p>Be able to draw punnet squares and cross diagrams. Be able to calculate ratios of phenotypes. Be able to interpret family trees. Students should be able to describe the basic symptoms of both disorders. Students should be able to evaluate the benefits of embryo screening when presented with appropriate information.</p>	20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<p>Define the term clone.</p> <p>Recap key ideas by asking students to reorder by size: cell, nucleus, DNA, chromosome, gene, nucleotide.</p> <p>Research roles of Franklin, Watson and Crick in the discovery of the structure of DNA.</p> <p>Describe the structure of DNA using diagrams and models</p> <p>Describe Darwin's theory of evolution by natural selection. Describe the main stages of natural selection. Define the term mutation. explain why mutation may lead to more rapid change in a species. Define the term species. Identify organisms</p>

Curriculum Assessment Map**Year: 10****Subject + Course details: <Combined Science Biology [AQA](#)>**

	<p>asexually in the human host, and sexually in the mosquito. Many fungi reproduce asexually by spores, but asexually to produce variation. Many plants reproduce sexually to produce seeds and asexually by runners, eg strawberry plants, or bulb division, eg daffodils.</p> <p>Describe the structure of chromosomes, DNA and genes. explain that a gene is a small section of DNA that codes for a particular sequence of amino acids to make a specific protein. Describe what the genome is.</p> <p>Explain how knowledge of the human genome will help medicine in the future, eg identifying genes linked to cancers, understanding and treating inherited disorders. It will also help trace human migration patterns. explain the ethical issues related to DNA sequencing.</p> <p>HT: explain how the bases on the two strands link together. Describe in simple terms how a protein is synthesised. explain the importance of the shape of a protein for enzyme action.</p> <p>Recall that genetic information is held with the cell nucleus. Recall that sperm and eggs are</p>				<p>that are of different species. Interpret evolutionary trees</p> <p>Define the term genetic engineering</p> <p>Describe the evidence for the theory of evolution by natural selection</p>
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Curriculum Assessment Map**Year: 10****Subject + Course details: <Combined Science Biology [AQA](#)>**

	<p>specialised cells for reproduction. Understand that Genetic information is passed on. Describe the difference between genes, alleles and chromosomes.</p> <p>Be able to use genetic cross diagrams to predict the phenotypes of offspring. Be able to use and explain the terms, genotype, phenotype, dominant, recessive, heterozygous, homozygous.</p> <p>explain using a Punnett square and genetic diagram how sex is determined in humans.explain the probability of having a child that is a boy or a girl.</p> <p>Describe the process of selective breeding. Understand that humans have used selective breeding to produce breeds of dogs and to produce food crops from wild plants. Be able to give examples of desirable characteristics (disease resistance, animals that produce more meat/milk, docile domestic pets, large/attractive/ unusual flowers)</p>				
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Curriculum Assessment Map**Year: 10****Subject + Course details: <Combined Science Biology [AQA](#)>**

	<p>Evaluate the use of genetic engineering in medicine, eg in gene therapy and production of hormones and some vaccines. Interpret information about genetic engineering techniques. Make informed judgements about the economic, social and ethical issues concerning genetic engineering and GM crops. explain advantages and disadvantages of genetic engineering</p> <p>State when Darwin published his theory and explain why it was only gradually accepted. Describe the work of Alfred Russel Wallace on natural selection. Describe the work of Jean-Baptiste Lamarck. Identify differences between Darwin's theory of evolution and conflicting theories. Suggest reasons for the different theories. explain the terms inherited and acquired characteristics</p> <p>explain how extinction may be caused. explain that organisms become extinct because something changes and the species cannot adapt quickly enough to the new circumstances</p> <p>Explain how bacteria can become resistant to antibiotics. explain what we should do to slow down the rate of development of resistant</p>				
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Curriculum Assessment Map**Year: 10****Subject + Course details:** <Combined Science Biology [AQA](#)>

	strains of bacteria. Describe the impact of antibiotic resistance				
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Curriculum Assessment Map
Year: <10>
Subject: <Chemistry [AQA](#)>

½ TERM	TAUGHT CURRICULUM	TAUGHT SKILLS	SUMMATIVE ASSESSMENT TITLE/TYPE	ASSESSMENT CRITERIA	LEARNED CURRICULUM
TOPIC					
1-3	<p>Rate & Extent of Chemical Change</p> <ul style="list-style-type: none"> Calculating rates of reaction Factors which affect the rate of reaction Collision theory Catalysts Reversible reactions Energy changes Equilibrium <p>Organic Chemistry</p> <ul style="list-style-type: none"> Crude oil, hydrocarbons and alkanes Fractional distillation and petrochemicals Properties of hydrocarbons 	<ul style="list-style-type: none"> Rates of reaction practicals - comparing 2 different methods (sodium thiosulphate and the magnesium with HCl) Tangent graphs and curve of best fit graphs to display results Scientific drawings of organic compounds such as alkanes, alkenes 	20-40 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures</p>	<ul style="list-style-type: none"> <i>Research collision theory</i> <i>Research Catalysts - various types and uses in everyday processes</i> <i>Research uses of ammonia in a variety of industrial processes including fertilisers</i> <i>Prior KS3 knowledge of crude oil and separating mixtures i.e fractional distillation</i>

<p>4-6</p>	<p>Chemical Analysis</p> <ul style="list-style-type: none"> • Pure substances, formulations • Chromatography • Tests for Gases - Oxygen, Hydrogen, Chlorine and Carbon dioxide <p>Chemistry of the Atmosphere</p> <ul style="list-style-type: none"> • Proportions of gases in the atmosphere • Changes of early Earth atmosphere to present day - how oxygen increased and how carbon dioxide decreased • Greenhouse gases - man-made and natural sources • Global climate change, the carbon footprint and how to reduce it • Atmospheric pollutants from fuels - Properties and effects of pollutants 	<ul style="list-style-type: none"> • Practical skills in Chromatography and analysing Rf values • Using various techniques to test for gases - lit splint for hydrogen, glowing splint for oxygen, litmus paper for chlorine and limewater for carbon dioxide • Writing formulae to show the reactants and products in both complete and incomplete combustion • Comparison of Earth's early atmosphere to other planets in the solar system eg Mars and Venus 	<p>20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.</p> <p>20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.</p>	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures</p>	<ul style="list-style-type: none"> • Research uses of chromatography in a variety of fields such as food colouring tests to forensic science - compare to gas chromatography • Research the progress of the early atmosphere - Miller-Urey experiment • Debates on climate change and the greenhouse effect • Link the products of combustion of fuels to specific effects on the environment eg Sulphur dioxide causes acid rain, incomplete combustion of hydrocarbons causes soot and particulates which leads to global dimming.

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1-3	<p>Waves</p> <ul style="list-style-type: none"> ● Difference between longitudinal and transverse waves ● Calculate using the wave equation ● Calculating $T = 1/f$ ● Composition of an electromagnetic wave ● How radio signals are transmitted and received ● How waves travel through the atmosphere/different mediums ● Effects of ultraviolet, x-rays and gamma rays on the body ● Radiation dosages <p>Magnetism</p> <ul style="list-style-type: none"> ● The difference between permanent and induced magnetic fields. 	<p>Using and rearranging formulae to perform calculations.</p> <p>Drawing/identifying features of a wave</p> <p>Measuring wave speed using a ripple tank</p> <p>Using a Leslie cube to measure the emission and absorption properties of various surfaces</p> <p>Plotting a magnetic field with a magnet and plotting compass.</p> <p>Investigating ways to determine to what extent a given factor influences the strength of a magnetic field.</p>	Mock: 70 minute paper (paper 1) in formal conditions as part of mock week.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<p>Waves</p> <ul style="list-style-type: none"> ● <i>List which waves are longitudinal and which are transverse</i> ● <i>Labelling amplitude, wavelength and frequency</i> ● <i>Measuring wave</i> ● <i>Uses and dangers of electromagnetic waves</i> <ul style="list-style-type: none"> ● Create a research task on the properties and uses of magnets. ● Research the uses of electric motors and recent developments in motor technology and what this has enabled.

Curriculum Assessment Map

Year: Year 11

Subject + Course details: <Combined Science Physics [AQA](#)>

	<ul style="list-style-type: none"> • The magnetic field around a current carrying conductor. • Fleming’s left hand rule and the motor effect. • Electric motors and ways to make them more. 				
<p>4-6</p>			<p>Second 75 mock paper (paper 2) - conditions tba.</p>	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	

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1-3	<p>Ecology</p> <ul style="list-style-type: none"> Understand the factors for which organisms are competing in a habitat. Evaluate how organisms are adapted to their environment. Interpret data relating to the effect of abiotic factors. Explain how a change in a biotic factor might affect a community. Interpret data relating to the effect of biotic factors. explain how structural, behavioural and functional adaptations, in a range of organisms, help them to survive in their habitat. Discuss how the rate of decay can be controlled by considering food preservation, bodies preserved in bogs, compost heaps Explain the 	<p>Ecology</p> <ul style="list-style-type: none"> Investigate competition in radish or cress seedlings Use interactive modelling to change an environment and explore the impact of factors on the interdependence of organisms Presentation to show plants, animals and microorganisms with labels to explain how their adaptations help them to survive in their habitat. Required Practical: Measure the population of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of a species. Estimate percentage cover using diagrams/ photographs and plastic squares as 'mini quadrats'. Investigate patterns of 	20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<p>Ecology</p> <ul style="list-style-type: none"> State the levels of organisation in an ecosystem. Describe the importance of interdependence and competition in a community. Name abiotic factors in a habitat Describe how changes in abiotic factors affect a community. Describe how changes in biotic factors affect a community Compare biotic and abiotic factors Define the term extremophile and give general examples. Recall mean, mode and median. State the relationship between feeding relationships and food chains. Describe predator/prey cycle State examples of materials which cycle through abiotic and biotic sections of an

Curriculum Assessment Map

Year: Year 11

Subject + Course details: <Combined Science Biology [AQA](#)>

	<p>importance of the water and carbon cycles.</p> <ul style="list-style-type: none"> ● Explain the role of microorganisms in cycling materials through an ecosystem ● Explain how decay is useful to plants ● Evaluate the necessity and effectiveness of recycling organic kitchen or garden wastes. ● Explain the difference between aerobic and anaerobic decay. ● Evaluate the impact of waste, deforestation and global warming on biodiversity. ● Evaluate the use of fertiliser on plant growth and oxygen levels. ● Explain how humans reduce the availability of land for other animals and plants. ● Explain what peat is and why it is important to preserve areas of peat. ● Explain why peat should not be burnt. ● Evaluate the environmental implications of deforestation. ● Explain why vast 	<p>grass growth under trees and see if it is linked to abiotic factor(s).</p> <ul style="list-style-type: none"> ● Use transect lines and quadrats to collect data. ● Analyse ecological data from quadrats and transects. ● Interpret various types of diagrams that illustrate the distribution of organisms in a habitat. ● Demo: Use sensors to measure carbon dioxide levels in the air. ● Demo: The production of carbon dioxide when a fuel burns. ● Interpret graphs showing human population growth. ● Analyse and interpret data about water pollution. ● Analyse and interpret data about air pollution. ● Measure the temperature inside and outside a greenhouse over 24 hours. ● Demonstrate how a black object absorbs and re-radiates heat using sensors or hold 			<p>ecosystem.</p> <ul style="list-style-type: none"> ● Describe the factors which affect the rate of decay ● Describe how plants and animals return materials to the environment. ● Discuss what would happen if things didn't decay when they die. ● Classify items as biodegradable and non-biodegradable and agree criteria for classification. ● Describe how gardeners and farmers try to provide optimum conditions for rapid decay of wastes. ● Define the term biogas. ● Define the term biodiversity. ● Describe how biodiversity ensures the stability of an ecosystem ● Describe the problems associated with an increasing human population. ● Describe how water can be polluted with sewage, fertiliser or toxic chemicals. ● Describe examples of air pollutants and
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Curriculum Assessment Map

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	<p>tropical areas have been cleared of trees.</p> <ul style="list-style-type: none"> • Explain how deforestation increases the amount of carbon dioxide in the atmosphere and leads to a reduction in biodiversity. • Explain the impact of humans on biodiversity. • Evaluate the effectiveness of methods used to decrease the human impact on biodiversity. • 	<p>near the skin.</p> <ul style="list-style-type: none"> • Research the list of programmes that could help to maintain biodiversity. • 			<p>where they come from.</p> <ul style="list-style-type: none"> • Describe the effects of smoke on buildings, humans and plant photosynthesis. • Describe how acid rain is formed and the effects of acid rain on living organisms. • Describe what herbicides and pesticides are used for. • State the outcomes linked to an increase in land use. • Suggest ways humans benefit from an increase in land use. • Define the term deforestation. • Recall the process of global warming. Describe the biological effects of global warming. • Describe the positive and negative effects of human interactions in an ecosystem.
<p>4-6</p>	<p>Revision of previous topics. Refer to Year 9 and 10 assessment maps.</p>		<p>20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.</p>	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of:</p>	

Curriculum Assessment Map**Year: Year 11****Subject + Course details: <Combined Science Biology [AQA](#)>**

				scientific ideas; scientific enquiry, techniques and procedures. AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.	
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1-3	<p><u>Using resources:</u> Define the terms:</p> <ul style="list-style-type: none"> ● finite ● Renewable ● Sustainable <p>Explain the differences between the two terms using suitable examples.</p> <p><u>Potable water</u> Required practical</p> <p>Define the terms:</p> <ul style="list-style-type: none"> ● potable water ● pure water. <p><u>Waste Water Treatment:</u></p> <p>Learning each stage of the process eg Sewage treatment includes:</p>	<ul style="list-style-type: none"> ● Analyse data and statistics. Evaluate production of materials. ● Distillation, evaporation, pH testing and analysis of samples ● Communication using a flow chart and labelled diagrams 	<p>20 Marks of exam style questions in the final week of each half term. Full topic/progress lists available in pupils' exercise books.</p> <p>Mock exam - 75 minutes in formal conditions.</p>	<p>AO1: Demonstrate knowledge and understanding of: scientific ideas; scientific techniques and procedures.</p> <p>AO2: Apply knowledge and understanding of: scientific ideas; scientific enquiry, techniques and procedures.</p> <p>AO3: Analyse information and ideas to: interpret and evaluate; make judgments and draw conclusions; develop and improve experimental procedures.</p>	<ul style="list-style-type: none"> ● <i>Critical thinking linked to current global issues.</i> ● Extended writing: describe the process of desalination. ● Extended writing: describe the process of distillation ● Extended writing: explain why distillation separates substances.

	<ul style="list-style-type: none"> ● screening and grit removal ● sedimentation to produce sewage sludge and effluent ● anaerobic digestion of sewage sludge ● aerobic biological treatment of effluent. <p><u>Alternative methods of extracting metals (Higher tier)</u> The process of:</p> <ul style="list-style-type: none"> ● phytomining ● bioleaching <p><u>Life Cycle Assessments</u></p> <ul style="list-style-type: none"> ● extracting and processing raw materials ● manufacturing and packaging ● use and operation during its lifetime ● disposal at the end of its useful life, including transport and distribution at each stage. 	<ul style="list-style-type: none"> ● Evaluate the impacts and benefits of biological methods of extracting metal. <p>Use information to interpret the LCA of a given material or product.</p> <p>Discuss the negative issues relating to LCAs and why caution should be used when using them.</p>			<p>Describe what a LCA is using a suitable example.</p>
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	<p><u>Ways of reducing the use of resources</u> The reduction in use, reuse and recycling of materials by end users reduces the use of limited resources, energy consumption, waste and environmental impacts.</p> <p>Revision of paper 1</p>	<p>Discuss the issues relating to using limited resources to generate energy.</p> <p>Data analysis</p> <p>Comparison of energy costs</p>			<p>Extended writing: describe the environmental impacts of obtaining raw materials from the Earth.</p>
4-6	Revision of paper 2				