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		End of unit assessment
		Knowledge Organiser
<b>Unit 3: Industrial Chemistry</b> <ul style="list-style-type: none"> <li>Explain the differences between a pure substance and a mixture</li> <li>State what a chemical reaction is</li> <li>Explain the differences between a chemical and a physical reaction</li> <li>State how you know a chemical reaction has occurred</li> <li>Define diffusion</li> <li>Give oxygen/carbon dioxide as an example of a substance moved by diffusion in animals</li> <li>State that increased temperature increases diffusion</li> <li>State that increased concentration increases diffusion</li> <li>State what mixtures are separated by filtration, evaporation, distillation and chromatography</li> <li>Describe the process of filtration</li> <li>Describe what evaporation is</li> <li>Describe the process of distillation</li> <li>Describe the process of chromatography</li> </ul>		Solvent Solute Solution Solubility. Insoluble Saturation Diffusion Filtration Evaporation Distillation Chromatography
		End of unit assessment
		Knowledge Organiser
<b>UNIT 4: Rollercoaster Engineer</b> <ul style="list-style-type: none"> <li>State that KE Store depends on mass and speed</li> <li>Describe how the GPE store of an object is increased</li> <li>Describe when there is an energy transfer between the kinetic and GPE store when riding a rollercoaster</li> <li>Evaluate data using a graph</li> <li>Describe what acceleration and deceleration is</li> <li>Describe what compression and extension of a spring is</li> <li>Calculate a mean average, taking into consideration anomalies.</li> <li>State the units of mass and weight</li> <li>Describe the difference between mass and weight</li> </ul>		Hooke's law Elastic materials Weight Mass Work Energy transfer
		End of unit assessment
		Knowledge Organiser

<ul style="list-style-type: none"> <li>Apply the equation: weight (newton, N) = mass (kilogram, kg) × gravitational field strength (newton per kilogram, N/kg), <math>W = m \times g</math>.</li> <li>State the energy transfers involved in compression and extension of a spring</li> </ul>		
<b>UNIT 5: Sports Science</b> <ul style="list-style-type: none"> <li>Label chambers and blood vessels in the heart.</li> <li>State the 3 blood vessels</li> <li>Define the term respiration as the breakdown of glucose to release energy</li> <li>Explain the importance of respiration</li> <li>State immediate, short- and long-term effects of exercise on the body.</li> <li>Suggest reasons for undertaking fitness tests.</li> <li>Describe how fitness can be measured</li> <li>Accurately record results</li> <li>State that energy is measured in joules or kilojoules</li> <li>Write a method to find out the energy content of different foods and identify risks</li> </ul>		Artery Vein Capillary Aerobic Anaerobic Respiration Mitochondria Alveoli Communicable Non-communicable
		End of unit assessment
		Knowledge Organiser
<b>UNIT 6: Chemical Engineer</b> <ul style="list-style-type: none"> <li>Recall the correct position of (some, most or all) of the metals in the reactivity series.</li> <li>Identify what an ore is</li> <li>Identify where carbon is in the reactivity series</li> <li>Describe what a displacement reaction is</li> <li>Write word equations for displacement reactions</li> <li>Recall the reactions of metals and acids</li> <li>Define what neutralisation is</li> <li>Name salts / products made in neutralisation reactions</li> </ul>		Atom Element Compound Mixture Evaporation. Filtration Distillation Condensation Malleable Proton Neutron Electron Soluble Solubility
		End of unit assessment
		Knowledge Organiser
<b>UNIT 7: Renewable Engineer</b> <ul style="list-style-type: none"> <li>Identify on a picture of a “fossil fuel” power station the boiler, generator and turbine.</li> <li>State coal, natural gas, crude oil and nuclear are examples of non-renewable sources of energy</li> <li>Define non-renewable and renewable energy</li> </ul>		Fossil fuels Non-renewable Renewable Finite Sustainable Pollutant

<ul style="list-style-type: none"> <li>State solar, geothermal and wind and examples of renewable forms of energy</li> <li>Name Methane, water and Carbon dioxide as greenhouse gases</li> <li>State the difference between complete and incomplete combustion</li> <li>State what global warming and the greenhouse effect are and their consequences</li> <li>State advantages and disadvantages of using non – renewable and renewable energy resources</li> </ul>		End of unit assessment
		Knowledge Organiser
<b>UNIT 8: Wireless Technology</b> <ul style="list-style-type: none"> <li>Define the term wave and name longitudinal and transverse as types of wave</li> <li>Give sound and seismic as examples of Longitudinal waves and give light and ripples in water as examples of transverse waves</li> <li>Label a transverse and longitudinal wave</li> <li>Describe the movement of longitudinal waves in terms of “vibrations”</li> <li>Give air and water as examples of mediums waves can travel through.</li> <li>Label the pinna, ear drum, ear canal, auditory nerve and cochlea on a picture of the ear and explain their function</li> <li>State the units for frequency as Hertz or Hz, Wavelength and meters or m, and Wave speed as m/s.</li> </ul>		Longitudinal Transverse Reflection SONAR Ultrasound
		End of unit assessment
		Knowledge Organiser
<b>UNIT 9: Breeding Manager</b> <ul style="list-style-type: none"> <li>Describe what a food chain is and identify the producers and consumers in it</li> <li>Describe what a food web is</li> <li>Give examples of inherited and environmental variation</li> <li>Name resources that animals and plants compete for</li> <li>Define interdependence</li> <li>Define biodiversity</li> <li>Name atmospheric pollutants and state what they can cause</li> <li>Describe how acid rain is formed</li> <li>Explain how toxic material accumulates in food chains</li> </ul>		Variation Environmental Inherited Ecosystem Consumer Herbivore Tertiary Predators Producers Community Competition Habitat Biodiversity Accumulation
		End of unit assessment
		Knowledge Organiser

<b>Unit 10: Electrical engineering</b> <ul style="list-style-type: none"> <li>Identify and draw circuit symbols for bulb, cell, battery, ammeter, voltmeter</li> <li>Define current with its unit</li> <li>Describe how an ammeter is connected</li> <li>Define potential difference with its unit</li> <li>Describe how a voltmeter is connected</li> <li>Define resistance (at least basic definition) with its unit</li> <li>Calculate resistance given the equation</li> <li>Describe the rules for current in series components</li> <li>Describe the rules for potential difference in series components</li> <li>Describe the rules for current in parallel components</li> <li>Describe the rules for potential difference in parallel components</li> </ul>		Series Current Potential difference Ammeter Voltmeter Resistance Ohms
		End of unit assessment
		Knowledge Organiser
<b>UNIT 11: Astrophysicist</b> <ul style="list-style-type: none"> <li>Name Oxygen, Nitrogen, Carbon dioxide and argon as the most abundant gases in our atmosphere.</li> <li>State that oxygen is 19-21% and Nitrogen as 79-81% of the atmosphere</li> <li>State that Carbon dioxide was the most abundant gas in the early atmosphere.</li> <li>Explain how and why the atmosphere has changed</li> <li>Describe the carbon cycle</li> <li>Name carbon dioxide as a greenhouse gas</li> <li>Name resources that are limited on Earth</li> <li>Explain why and how recycling is so important</li> </ul>		Atmosphere Decomposes Combustion Photosynthesis Respiration Sustainable Recycling
		End of unit assessment
		Knowledge Organiser