

Key Stage 3 Curriculum Map 2021-22

Term 1

Year Group: 8	Subject: Chemistry			
Focus/Topic	Objectives	Key Skills/ UAE Links	HPL Links	Home Learning/ Recommended Reading
<ul style="list-style-type: none"> Induction, expectations, baseline assessment, lab safety, reaction time investigation and analysis and test feedback. 				
<p><u>Chemistry: A) Structure & Bonding</u></p> <ul style="list-style-type: none"> 1) Covalent Bonding 2) Giant Covalent Structures 	<ul style="list-style-type: none"> Use your knowledge to explain why atoms bond. Discuss the formation of a covalent bond. Create bonding diagrams to show covalent bonds. Use your knowledge to list examples of giant covalent structures. Discuss the formation of a giant covalent structure. Summarise the properties of giant covalent structures. Use your knowledge to describe how ions are formed. 	<ul style="list-style-type: none"> Recall, working scientifically Working scientifically, application Apply and evaluate Revise and reflect Graphene in the UAE 	<p>VAA: Empathetic</p> <p>Collaborative: <i>The ability to seek out opportunities to receive responses to your work; present your own views and ideas clearly and concisely; listen to the views of others; be willing and able to work in teams; take a variety of roles and be able to evaluate your own ideas and contributions.</i></p> <p>ACP: Analysing</p>	<ul style="list-style-type: none"> Guided reading

<ul style="list-style-type: none"> • 3) Atoms into Ions • 4) Ionic Bonding • 5) Metallic Bonding • 6) Application of Bonding 	<ul style="list-style-type: none"> • Create diagrams showing the electron arrangement of ions. • Predict the ion formed by different atoms. • Use your knowledge to describe the type of elements that form an ionic bond. • Discuss the formation of an ionic bond. • Construct dot and cross diagrams to show ionic bonds. • Apply your knowledge to describe the arrangement of atoms in a metal. • Create a diagram to describe the formation of metallic bonds. • Predict the properties of metallic structures. • Use your knowledge to describe the structure and bonding in carbon nanotubes. • Summarise the important uses of carbon nanotubes in medicine. • Analyse the properties of a metal to determine a suitable use. 	<ul style="list-style-type: none"> • Sea water analysis in the UAE • Infrastructure/ Building materials for Burj Khalifa 	<ul style="list-style-type: none"> • Critical thinking: <i>The ability to deduct, hypothesise, reason, seek supporting evidence</i> 	
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<ul style="list-style-type: none"> • 7) Introduction to the Chemistry Fair • 8) Test • 9) Feedback 	<ul style="list-style-type: none"> • Apply your knowledge to discuss the chemistry associated with your model • Create a model to represent a type of bonding and its structure • Justify your choice of materials • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. 	<ul style="list-style-type: none"> • Use of nanotubes in medicine 		
<p><u>Chemistry: B) Chemical Reactions</u></p> <ul style="list-style-type: none"> • 1) Signs of a chemical reaction 	<ul style="list-style-type: none"> • Apply your knowledge to determine if a scenario is a chemical reaction or a physical change. • Summarise the different signs of a chemical reaction. • Conduct an experiment to demonstrate signs of a chemical reaction. 	<ul style="list-style-type: none"> • Working scientifically, application • Recall, application and working scientifically • Revise and reflect • Chemicals in the UAE 		<ul style="list-style-type: none"> • Guided reading

<ul style="list-style-type: none"> • 2) Representing a Chemical Reaction • 3) Effect of Surface Area 	<ul style="list-style-type: none"> • Write the molecular formula for simple substances. • Construct word equations that represent a chemical reaction. • Construct chemical equations that represent a chemical reaction. • Use your knowledge to describe the conditions required for a reaction to take place. • Summarise how changing surface area effects the rate of a chemical reaction. • Conduct an experiment to demonstrate the effect of surface area on reaction rate. 			
HALF TERM				
<ul style="list-style-type: none"> • 4) Effect of Temperature 	<ul style="list-style-type: none"> • Apply your knowledge to describe the relationship between temperature and energy • Summarise how changing temperature effects the rate of a chemical reaction 	<ul style="list-style-type: none"> • Factories and catalysts in the UAE 	VAA: Agile Open minded: <i>The ability to take an objective view of different ideas and beliefs; become more receptive to other ideas and beliefs based on the arguments of others; change</i>	<ul style="list-style-type: none"> • Guided Reading

<ul style="list-style-type: none"> • 5) Reporting a Rate Investigation • 6) Effect of a Catalyst • 7) Test • 8) Feedback 	<ul style="list-style-type: none"> • Conduct an experiment to demonstrate the effect of temperature on reaction rate • Apply your knowledge to determine the variables for an investigation • Construct a table and/or graph to present your results • Evaluate your results to write a valid conclusion supported by evidence • Use your knowledge to define the term catalyst • Summarise how adding a catalyst effects the rate of a chemical reaction • Compare the advantages of using a catalyst to changing other factors to increase the rate of a reaction • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. 		<p><i>ideas should there be compelling evidence to do so.</i></p> <p>ACP: Linking Connection finding: <i>The ability to use connections from past experiences to seek possible</i></p> <ul style="list-style-type: none"> • <i>generalisations</i> 	
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	<ul style="list-style-type: none"> Recognise areas of improvement and what went well. Reflect on your knowledge. 			
<p><u>Chemistry: C) Acids and Alkalis</u></p> <ul style="list-style-type: none"> 1) The pH Scale 2) Identifying Acids and Alkalis 3) Concentration 4) Neutralisation 	<ul style="list-style-type: none"> Use your knowledge to describe the ions responsible for making a solution acid, alkali or neutral Write the molecular formula for simple acids and alkalis Calculate the RFM of simple acids and alkalis Use your knowledge to describe the ions responsible for making a solution acid, alkali or neutral Write the molecular formula for simple acids and alkalis Calculate the RFM of simple acids and alkalis Use your knowledge to define the term concentration Connect the concentration of an acid to its pH Calculate the concentration of a solution using $n = c \times v$ Use your knowledge to state what is meant by neutralisation 	<ul style="list-style-type: none"> Recall, application and working scientifically Water treatment in the UAE/ Comparing pH of water around the world Household products 		<ul style="list-style-type: none"> Guided reading

<ul style="list-style-type: none"> • 5) Products of Neutralisation • 6) Test • 7) Feedback 	<ul style="list-style-type: none"> • Conduct an experiment which would demonstrate a neutralisation reaction • Predict if everyday substances are acid or alkali and give examples of real life neutralisation reactions • Use your knowledge to name the salt produced in different neutralisation reactions • Write chemical equations for neutralisation reactions • Evaluate separation techniques to determine the best method for collect salts from water • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. 	<ul style="list-style-type: none"> • Neutralisation in the body within the digestive system and in industry. 		
<p><u>Chemistry: D) Real world Chemistry</u></p>	<ul style="list-style-type: none"> • Apply your knowledge to discuss the process of oil forming 	<ul style="list-style-type: none"> • Working scientifically, 		<ul style="list-style-type: none"> • Guided reading

<ul style="list-style-type: none"> • 1) Chemistry for Fuels • 2 & 3) Renewable Energy • 4) Chemistry & Farming • 5) Chemistry & Plastics 	<ul style="list-style-type: none"> • Summarise the process of combustions • Evaluate the use of oil as a fuel • Use your knowledge to describe the formation of bioethanol • Construct the chemical equation for the formation of biofuel • Evaluate the use of bioethanol and its impact on the environment and society • Use your knowledge to discuss the structure and bonding of ammonia • Summarise the process of making ammonia for use in fertilisers • Justify why fertilisers are an important in the UAE and evaluate their use • Use your knowledge to define the term monomer and polymer • Summarise the process of polymerisation and represent using an equation • Debate the use of biodegradable and non-biodegradable plastics • Use your knowledge to explain how paper chromatography works • Conduct paper chromatography to separate coloured substances 	<p>apply, evaluate</p> <ul style="list-style-type: none"> • Renewable energy resources in the UAE • Fossil fuels (oil) in the UAE • Plastic production in the UAE 		
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<ul style="list-style-type: none"> • 6) Analytical Chemistry • 7) Test • 8) Feedback 	<ul style="list-style-type: none"> • Interpret results of paper chromatography to compare and contrast different inks • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. • Evaluate your knowledge. • Recognise areas of improvement and what went well. • Reflect on your knowledge. 			
<p>Winter Break</p>				