



This year in Chemistry we will be learning:		This links to:	Key Vocabulary:	
1	<p>Matter 3 (Atomic structure and periodic table)</p> <ul style="list-style-type: none"> Understanding the difference between atoms, elements, compounds and mixtures Explaining the choice of separation technique based on the type of mixture Exploring the atomic structure history and describing the atomic structure Deducing properties of elements based on their atomic structure and position of periodic table. 	<p>You will build your knowledge from year 7 about the particle model and how separation techniques work. You will apply the principle to choose the right method for different mixtures. You will look deeper into the atomic structure and learn what atoms are made up of and why periodic table helps us to understand the properties and characters of elements better.</p>	<ul style="list-style-type: none"> Atoms Atomic number Mass number Isotope Alkali metals Halogens 	<ul style="list-style-type: none"> Noble gases Elements Compounds Distillation Filtration Chromatography
2	<p>Matter 4 (Chemical Bonding)</p> <ul style="list-style-type: none"> Explaining the bonding and structure between metals and non-metals (ionic) Explaining the bonding and structure between non-metals (covalent) Knowing the various giant covalent molecules and their properties Explaining the bonding and structure in metals (metallic) Deducing the formula of these compounds 	<p>In year 8 you have learnt about the difference in the characters of metal and nonmetals, Now you will learn how the bond with each other to give different compounds and molecules. You will develop your understanding of the different structure and properties of these compounds and molecules. You will also apply the knowledge from atomic structure to deduce formulae of these compounds.</p>	<ul style="list-style-type: none"> Groups Periods Electrostatic forces Lattice Ions Ionic bond 	<ul style="list-style-type: none"> Covalent bond Intermolecular forces Metallic bond Allotropes Diamond Graphite
3	<p>Matter 4 (Chemical Bonding)</p> <ul style="list-style-type: none"> Understanding what a polymer is and their properties Explaining the properties of these compounds based on their structure and bonding Deducing the type of bonding based on chemical and physical properties 	<p>You will continue to look at bonding between elements. You will learn what polymers are and how their properties differ from other simple molecules. You will use practical data to analyse and evaluate the type of bonding in a substance.</p>	<ul style="list-style-type: none"> Fullerene Graphene Monomers Polymers Conductors 	<ul style="list-style-type: none"> Malleability Ductility State symbols
4	<p>Reactions 3 (Rate of reaction)</p> <ul style="list-style-type: none"> Understanding what is rate of reaction and how we can measure them Calculating rate using data and graphs Explaining the effect of temperature, concentration, particle size, pressure and catalyst on rate of reaction 	<p>In year 8 you have looked at different kinds of reactions and learnt how to analyse observations you made. Now you will be looking at how different factors can affect how quickly a reaction can happen. You will relate and apply this knowledge in real life applications. You will use practical data to deduce rate of reactions using graphs.</p>	<ul style="list-style-type: none"> Collision theory Rate of reaction Concentration Surface area 	<ul style="list-style-type: none"> Catalyst Activation energy Tangent Gradient
5	<p>Earth Chemistry (Atmosphere, fuels and pollution)</p> <ul style="list-style-type: none"> Understanding how the atmosphere changed over time Understanding how fuels are made and what they are made of Describing how we can separate the fuels into different fractions Explaining the properties of fuels based on the size of the molecules 	<p>In year 8 you have learnt about combustion reaction and deduced the products based on the substance you are burning. You will now start by looking at how earth's atmosphere changed over the last 4.6 billion years. You will then look at what is causing climate change now and the main contributor being burning fuels. You will learn what fuel are made up of and how they are separated.</p>	<ul style="list-style-type: none"> Climate change Greenhouse effect Fossil fuels Hydrocarbons Alkanes 	<ul style="list-style-type: none"> Alkenes Cracking Fractional distillation Viscosity Flammability
6	<p>Earth Chemistry (Atmosphere, fuels and pollution)</p> <ul style="list-style-type: none"> Explaining how human activities can affect our environment through greenhouse effect How we can reuse, reduce and recycle earth's resources more effectively to make a sustainable resource. 	<p>You will continue to look at fuels and the products formed when we burn these fuels. You will analyse the effect it has on the atmosphere and how we can reduce it. You will apply the concept of 3Rs – reuse, reduce and recycle to figure ways we can achieve a greener climate.</p>	<ul style="list-style-type: none"> Complete combustion Incomplete combustion Acid rain Carbon Footprint Pollutants 	<ul style="list-style-type: none"> Renewable (Infinite) resources Non-renewable (finite) resources Sustainable

Target Grade:

AP1:

AP2:

AP3: