Queen's Park High School Key Stage 3 Assessment Science - Earth IA6 target......

			EARTH STRUCTURE AND UNIVERSE			
Year 7	Working Towards	RAG	Meeting	RAG	Exceeding	RAG
Enquiry Skills	Draw simple graphs outlining information about planets		Construct models of the rock cycle using practical equipment		Analyse data on distances, sun intensity and atmosphere on other planets and what information this gives us	
			Create models of the solar system			
Application			Compare explanations from different periods in history about the motion of objects and structures in the universe		Predict planetary conditions from descriptions of rocks on other planets	
					Predict patterns in day length and shadows depending on latitude	
Explanations	Explain the importance of some gases in our atmosphere		Explain why a rock has a particular property based on the way it was formed		Explain the choice of particular units for measuring distance	
			Explain why places on Earth experience different daylight hours and amounts of sunlight during the year			
Descriptions	State different types of rock		Construct a labelled diagram of the rock cycle		Describe similarities and differences between the rock cycle and everyday physical and chemical changes	
	State the parts of the structure of the Earth		Describe what is meant by weathering and erosion		Describe how space exploration and observations of stars are affected by	
			Describe the appearance of planets or moons from diagrams		the scale of the universe	
	t Self-assessment your self-assessment decision:	Final	showing their positions in relation to the sun Self Assessment A.R.M			
Explain	your self-assessment decision:		Self Assessment A.R.M			
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 Queen's Park High School
 Key Stage 3 Assessment
 Science- Matter
 IA6 target......

	Working Towards	RAG	Meeting	RAG	Exceeding	RAG
nquiry kills	Make observations for changes in temperature by reading thermometers accurately		Record temperatures in results tables and collect enough evidence to use in a conclusion		Use melting point graphs to assess how pure a substance is	
pplication	Decide whether substances are solid, liquid or gas based on their appearance		Use evidence from examples and experiments to explain changes of state, diffusion and gas pressure		Make predictions about what will happen during unfamiliar process, in terms of particles and their energy Argue how to classify substances which behave unusually as solid, liquids	
Explanations	Explain the conditions needed to change states of substances		Explain the properties of solids, liquids and gases based on the		and gases Explain the link between density and gas pressure	
			arrangement and movement of their particles Explain changes in state in terms of changes to the energy of particles			
			Explain how diffusion and gas pressure work			
Descriptions	State examples of solids, liquids and gases Draw a particle diagram of a solid, liquid and gas		Describe the arrangement of particles in solids, liquids and gases		Describe conditions and their effect on the pressure of gas and the process of diffusion	
	Identify simple examples of changes of state		Describe the state changes between solids, liquids and gases Draw before and after diagrams of particles when changes of state have occurred			
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Key Stage 3 Assessment

Science - Reactions

Enquiry Skills	Working Towards	RAG	Meeting	RAG	Exceeding	RAG	
KIIIS	Use simple apparatus to react with metals with acid and oxygen		Make observations based on the reactions of different metals with acids and water		Suggest limitations of using simple observations to place a metal in the reactivity series		
	State the hazards of using acids and alkalis		Explain limitations of different indicators		Suggest hazards of different acids and alkalis based on data about concentration and pH		_
pplication	State whether an unknown substance has reacted based on appearance		Use the reactivity series to assess whether a reaction will occur or not		Justify the use of a metal or non-metal for a job based on data provided		_
	арреатипес		Identify the best indicator to use to distinguish between solutions of		Place an unknown metal in the reactivity series based on its reactions		
xplanations	Explain how universal indicator helps us identify acids and		different pH Explain why metals react differently with acids or oxygen	++	Given the name of an acid and alkali, write the name of the salt produced Create models to explain the reactivity series	\vdash	_
xpianations	alkalis		Explain why acids and alkalis are used in everyday life		Explain the difference between pH and concentration		
escriptions	State differences between metals and non-metals		Write word equations for a metal and acid		Write symbol equations for the reactions of metals		
	State the test for hydrogen gas		Write word equations for oxidation reactions		Describe the physical or chemical changes a metal has gone through based		_
	State the names of simple acids and alkalis		Write word equations for displacement reactions		on its appearance		
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Queen's Park High School Key Stage 3 Assessment Science- Matter IA6 target......

			SEPARATING MIXTURES				
Year 7	Working Towards	RAG	Meeting	RAG	Exceeding	RA	â
Enquiry Skills			Choose the most appropriate apparatus to separate a mixture Use chromatography, evaporation and distillation apparatus		Plot a solubility curve for a solution		$\overline{+}$
Application			Choose the right separation techniques based on the mixture Use information from chromatography to identify substances in a mixture		Analyse and interpret solubility curves Suggest a combination of separation techniques to separate an unknown mixture		
Explanations	Explain how a simple mixture of metal and sand can be separated		Explain how substances dissolve based on the particle model Explain how filtration, evaporation and distillation can separate a mixture		Explain what information can be gained from a solubility curve Explain how mixtures can be separated based on their boiling points		
Descriptions	State simple examples of everyday mixtures State the names of separation techniques		Describe differences in properties between compounds and mixtures		Compare the properties of compounds and mixtures, describing their similarities and differences		
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Key Stage 3 Assessment

Science - Earth

			CLIMATE AND EARTH RESOURCES	210		212	
Year 7	Working Towards	RAG	Meeting	RAG	Exceeding	RAG	
Enquiry Skills	Describe evidence for global warming		Interpret data about changes to global temperature		Use data to evaluate proposals for recycling materials		
			Use simple laboratory equipment to complete small scale extractions				
Application	Suggest a method which could be used to extract a metal		Use a diagram to describe and explain the carbon cycle		Evaluate the implications of a proposal to reduce carbon emissions		
			Evaluate claims that human activity is causing global warming		Suggest ways in which waste materials from processes could be recycled		
			Justify the choice of extraction method for a metal, given data about reactivity				
Explanations	Explain why recycling is important		Explain how greenhouse gases raise the temperature on Earth		Explain why changes in behaviour and the use of alternative materials may		_
			Explain how different extraction methods work		limit the consumption of natural materials		
Descriptions	State the gases which cause global warming		Describe different parts of the carbon cycle		Describe how electrolysis can be used to extract metals		
	State different types of natural resources and minerals		Describe the human impacts on the carbon cycle				
			Describe how global warming can affect climate and local weather				
			patterns				
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Key Stage 3 Assessment

Science - Matter

				PERIODIC TABLE AND ELEMENTS				
Year 7	Working Towards	R/	\G	Meeting	RAG	Exceeding	RA	G
Enquiry Skills	Present data in an appropriate results table			Use apparatus to identify metals and non metals		Create the best way to show data based on trends and patterns from the periodic table		
				Suggest hazards involves with Group 7 elements				
Application	Suggest whether an element is a metal or non-metal based on its appearance and properties			Use a formula to name a chemical		Use data to identify whether a substance is a metal or non-metal and where it may be located on the periodic table		
				State the number of atoms and elements present in a given formula		Predict the position of an element in the periodic table based on its characteristics		
Explanations	Explain the uses of some elements in the periodic table			Explain why different polymers have different uses		Explain how the properties of atoms are different to the properties of elements		
İ				Explain the properties of composites and ceramics		Explain the difference between elements, compounds and mixtures using models		
				Explain how the location of an element in the periodic table indicates the properties		models		
Descriptions	Describe what is meant by an atom and an element			Describe the structure of an atom		Write word and symbol equations for Group 7 displacement reactions		
	State some examples of polymers			Describe the differences between elements, compounds and mixtures including particle diagrams		Describe the trends and patterns in Group 1 and Group 7 based on observations		
	State some uses of elements in the periodic table			Describe what is meant by a polymer and composite Describe the arrangements of elements in the periodic table				
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Key Stage 3 Assessment

Science - Reactions

Year 7	Working Towards	RAG	HEMICAL ENERGY AND TYPES OF RE Meeting	RAG	Exceeding	RAG
nquiry kills	Use a balance to find the mass of a substance		Collect sufficient data during a conservation of mass exp	eriment	Calculate the mass of product based on mass of reactants in a chemical equation	
			Collect sufficient data to distinguish whether a reaction i exothermic or endothermic		Calculate the total energy lost or gained based on bond energies	
Application	Identify whether reactions are exothermic or endothermic		Predict the properties of a combustion reaction based or reactants		Deduce whether a reaction is exothermic or endothermic based on its energy profile diagram	
			Predict the products of a thermal decomposition reactio its reactants	based on	Use energy data to decide a use for an exothermic or endothermic reaction	
Explanations	Explain why a reaction is an examples of exothermic or endothermic energy changes		Explain observation of change in mass in a reaction		Explain the pros and cons of different fuels in terms of their products of combustion	
			Explain the energy transfers that occur in a reaction			
Descriptions	State some exothermic and endothermic reactions		Use particle diagrams to show what happens in a chemic	al reaction	Use models to describe changes that occur in chemical reactions	
			Write word equations based on information about a real Describe what is meant by combustion, thermal decomp		Write and balance symbol equations	
	t Self-assessment your self-assessment decision:	Fina	conservation of mass Describe uses for different exothermic and endothermic I Self Assessment A.R.M	reactions		
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Queen's Park High School Key Stage 3 Assessment C1 – Atomic Structure and the Periodic table

			DIGESTION			
Year 9 C1	Working Towards	RAG	Meeting	RAG	Exceeding	Evidence
How Science Works	Describe each practical technique of separating mixtures.		Explain how chromatography, distillation and filtration practical techniques occur.		Explain why crystallisation happens.	
	Safely use a range of equipment to separate chemical mixtures		Explain how testing aprediction can support or refute a scietifc ides	ort	Use SI Units and the prefix nano	
Application	Use scientific conventions to identify chemical symbols.		Write word equation for reactions from a practical		Write symbol equations for reactions form practicals	
			Identify link between electron configuration and the structure of the periodic table for elements 1 to 20. Identify anomalies.	n	Describe the relationship between number of positive and negative charges. Apply this relationship to explain why there is no overall charge	
Explanations	Explain how properties of the elements in Group 0 depend on the outer shell of electrons of the atoms Explain how properties of the elements in Group 1 depend on the outer shell of electrons of the atoms		Explain why the Periodic table has change throughout the years	ed	Explain the trends in Group 0. Explain the trends in Group 1.	
			Explain the links between properties of transition metals with their common uses.		Explain the trends in Group 7. Give reasons why transition metals have ions with different charges.	
	Explain how properties of the elements in Group 7 depend on the outer shell of electrons of the atoms.					
Descriptions	Define an atom, element and compound, mixture		Describe how many electrons there can be in the first, second and thirs energy shells		Describe the differences between the plum- pudding model, nuclear model and atomic	
	Describe the structure of atoms		Describe the properties of Cr, Mn, Fe, Co, Ni and Cu.		model. Describe why changes to the atomic model	
	Describe the relationship between number of positive and negative		Describe the trends in properties in Group 7.		happened Describe the experimental techniques involved	
	charges. Apply this relationship to		Describe the trends in properties in Group 1.		in the history of the atomic model.	
	explain why there is no overall charge		Describe the trends in properties in Group 0		Explain how the experimental techniques work.	
			Describe the differences between the early Periodic tables and our current Periodic table			

Final Self Assessment A.R.M
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Queen's Park High School Key Stage 3 Assessment C2 – Bonding, structure and the properties of matter

	Working Towards	R	AG	Meeting	RAG	Exceeding	Evidence
How Science Works	Recognise substances as small molecules, polymers or giant structures from diagrams showing their bonding. Visualise and represent 2D and 3D forms including two-dimensional representations of 3D objects			Recognise substances as metallic giant structures from diagrams showing their bonding			
Application				link the properties of diamond to the structure.		link the properties of graphene to the structure.	
				link the properties of graphite to the		link the uses of nanoparticles to their properties.	
				structure.		evaluate the use of nanoparticles in applications, eg sun cream	
Explanations	explain why the melting point and boiling point of metallic substances are high			explain why sodium chloride is difficult to melt		explain an example of ionic bonding including detail on electron transfer, group numbers of the	
				explain why covalent substances do not conduct electricity		atoms involved and the use of correct terms, eg cation and anion	
				explain how ethene polymerises			
				explain how covalent substances boil.		explain an example of covalent bonding including	
				explain why metallic substances conduct electricity		detail on electron transfer, group numbers of the atoms involved and the use of correct terminology	
						explain how ionic substances dissolve in water.	
						explain why the melting point and boiling point increases as the size of the molecule does in	
						terms of intermolecular forces	
						explain why pure water does not conduct electricity but tap water does conduct electricity	
						explain the differences in changes of state in terms of intermolecular forces of attraction between a short molecule ie methane and a longer molecule ie pentane	

Descriptions	describe the properties of matter in a solid, liquid and gas.		Define 'electrostatic forces of attraction'	explain why solid ionic substances do not conduct electricity but dissolved or molten ionic substances do conduct electricity. Describe/draw the structure of common atoms and suggest how they could bond to obtain a full outer level of electrons.
	Define melting point and boiling point. describe melting points and boiling		describe why atoms bond in order to obtain a noble gas configuration/full outer level of electrons.	Describe balanced symbol equations including the states of matter.
	points of metallic substances.		describe the bonding in the sodium chloride lattice using the correct terms, eg electrostatic forces of attraction.	describe the electrical conductivity of ionic substances.
			describe the difference between simple covalent substances and giant covalent substances.	describe the history of nanoscience.
			Define 'delocalised electrons'	
			describe melting points and boiling points of covalent substances.	
			describe the structure of diamond, silicon dioxide and graphite. describe the structure of metal alloys.	

Student Self-assessment	Final Self Assessment A.R.M
Explain your self-assessment decision:	

Date:

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Queen's Park High School Key Stage 3 Assessment C3 – Quantitative Chemistry

	Working Towards	RAG	Meeting	RAG	Exceeding	Evidence
How Science Works			use measurements of mass before and after an experiment to explain what has happened to the mass during the experiment and why it has happened		Be able to convert cm ³ into dm ³ . Rearrange the equation: C = m / v to make mass the subject	
			Calculate the number of moles in a substance using the relative formula mass			
			Use the masses of substances present in a reaction to write a balanced equation.			
			Use the equation: $C = m / v$ to calculate the concentration of a solution			
Application	Write simple word equations.		Write simple symbol equations.		Balance symbol equations	
	Review the definition of relative atomic mass.		write instructions to another student how to calculate the relative formula mass.		balance complex equations and add state symbols.	
	Decall become fined the relative examin		Link the Busition are stort to the group of		Balance chemical equations and use these to calculate the masses of substances present.	
	Recall how to find the relative atomic mass from		Link the limiting reactant to the number of moles.		Explain the meaning of concentration and the	
			Link the limiting reactant to the masses in grams.		unit grams per dm ³	
Explanations			Explain the meaning of the law of conservation			
Descriptions	Define the relative molecular mass		describe the equations given in terms of number of moles, reactants and products			
	Define the term limiting reactant.		Define one mole in terms of $M_{\rm r}$ and $A_{\rm r}$			

Student Self-assessment	Final Self Assessment A.R.M
Explain your self-assessment decision:	
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