Key Stage 3 Assessment

Science- Physics

				Current						
Year 7	Working Towards	R/	٩G	Meeting	RAG		Exceeding	Evi	dence	
How Science Works				Be able to recall different examples of parallel or series circuits: Series: torch Parallel: Christmas lights						
Application	Use a sketch to explain how an object obtains a static charge (positive and negative)			Be able to construct a circuit using a circuit diagram Be able to draw a circuit diagram from a prepared circuit			Compare the advantages of series and parallel circuits for particular uses. Suggest ways to reduce the risk of getting electrostatic shocks.			
Explanations	Be able to explain the following terms: <u>Negatively charged</u> : An object that has gained electrons as a result of the charging process. <u>Positively charged</u> : An object that has lost electrons as a result of the charging process. <u>Electrons</u> : Tiny particles which are part of atoms and carry a negative charge. <u>Static Charge</u> : When an object has an excess of a electrons making its overall charge negative or when an object has a deficit of electrons giving it an overall positive charge.			Be able to explain the following terms: <u>Current</u> : Flow of electric charge, in amperes (A). <u>In series</u> : If components in a circuit are on the same loop. <u>In parallel</u> : If some components are on separate loops.			Be able to describe a field, ie the area where other objects feel an electrostatic force due to a charged object.			
Descriptions	Be able to describe static electricity and the effect of static charge on various objects (two charged pith balls, charged rod and water, how to get a static charge on an object)			Describe how current changes in series and parallel circuits when components are changed.			Be able to describe why the current is different in series and parallel circuits			
Student Explain	Student Self-assessment decision: Explain your self-assessment decision:									
Teache	r Assessment:									
Signature:			ate:							

Key Stage 3 Assessment

Science- Physics

			Energy Costs	Energy Costs								
Year 8	Working Towards	RAG	Meeting	RA	G		Exceeding	Εv	viden	ce		
How Science Works	Be able to calculate the amount of energy used in a home		Calculate the cost of home energy				Use and manipulation of the energy cost formula to solve problems involving the amount of and cost of energy in the home					
Application	Compare the amounts of energy transferred by different foods and activities.		Compare the energy usage and costs of running different home devices. Compare the advantages and disadvantages of different energy resources.				Represent the energy transfers from a renewable or non-renewable resource to a home or business Represent energy transfers using a sankey diagram					
Explanations	State renewable and non-renewable resources		Explain the fundamental differences between a renewable and non- renewable resource.				Compare the different methods of energy production in power plants including renewable and non-renewable resources					
Descriptions	Describe the various uses of electricity and other energy resources in a home or business (electricity for appliances or gas for heating)		Describe the transfer of energy in the home (either gas to heat or electricity to light/sound/heat)				Describe the transfer of energy from one form to another in the context of multiple devices in the home (ie electricity and gas)					
Student Explain	t Self-assessment your self-assessment decision:	Final S	elf Assessment A.R.M									
Teache	r Assessment:											
Signatu	ire:	Date:										

Key Stage 3 Assessment

Science- Physics

	Energy Transfers								
Year 7	Working Towards	RAG	Meeting	RAG		Exceeding	Evid	ence	
How Science Works	Be able to tell the difference between what is waste energy and what is useful energy for a given energy transfer		Calculate total energy loss based on total energy input and useful energy Calculate total useful energy based on total energy input and waste energy			Calculate the useful energy and the amount wasted, given values of input and output energy. Calculate any one of the variables from: total energy, useful energy, various sources of waste energy			
Application	Be able to gives examples of how some appliances waste energy		Be able to give examples of how energy is transferred from one form to another and state when and how some energy can be wasted Be able to explain what efficiency means			Be able to use and create sankey diagrams reprinting energy transfers for questions about various energy transfers in the home or in a buisness			
Explanations	Compare the percentages of energy wasted to usefully energy		Explain an energy transfer with more than two products Explain where wasted energy goes			Explain why processes such as swinging pendulums or bouncing balls cannot go on forever, in terms of energy			
Descriptions						Describe how energy is transferred between energy stores in a range of real-life examples applying the efficiency formula			
	Describe how the energy of an object depends on its speed, temperature, or height		Describe how When energy is transferred, the total is conserved, but some energy is dissipated, reducing the useful energy						
Student Explain	: Self-assessment your self-assessment decision:	Final S	elf Assessment A.R.M						
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Key Stage 3 Assessment

Science- Physics

	Gravity							
Year 7	Working Towards	RAG	Meeting	RAG	Exceeding	Evid	ence	
How Science Works	Be able to state that you would have different weights on different planets		Compare your weight on Earth with your weight on different planets		Compare your weight on Earth with your weight on different planets using the formula: Weight (N) = mass (kg) x strength of gravity (N/Kg) Weight = m x g			
Application			Draw a force diagram for a problem involving gravity ie label force of gravity and the reaction force					
Explanations	State that gravity is stronger on some planets than others		Explain why the force of gravity varies from planet to planet		Explain using calculations why the force of gravity varies from planet to planet			
Descriptions	Be able to describe why/how we are kept on the ground		Be able to describe how we might feel if we travelled to other planets with different gravities		Be able to explain using specific gravitational strengths of planets how we might feel if we travelled to these other planets			
Explain	your self-assessment decision:							
Signatu	re:	Date:						
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Signatu	re:	Date:						

Key Stage 3 Assessment

Science- Physics

				Speed					
Year 7	Working Towards	RAG		Meeting	RAG	Exceeding	Evic	lence	
How Science Works	Be able to calculate speed given distance and time			Be able to calculate speed, distance, or time given two of the three		Be able to manipulate the speed, distance, time formula to solve problems			
Application	Be able to state situations where speed may change					Illustrate a journey with changing speed on a distance-time graph, and label changes in motion.			
Explanations	Explain that applying a force causes a change in speed (ie hitting the breaks on a car causes the car to slow down)			Explain how a force might be applied to change the speed of an object		Predict changes in an object's speed when the forces on it change.			
Descriptions	Be able to describe how speeds may change as a result of outside factors such as wind or application of extra force			Be able to describe how if the overall force on an object is unbalanced, its motion changes and it slows down, speeds up or changes direction.		Describe how the speed of an object varies when measured by observers who are not moving, or moving relative to the object.			
Explain	your self-assessment decision:								
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Key Stage 3 Assessment

Science- Physics

Voltage and resistance										
Year 7	Working Towards	RAG	ì	Meeting	RAG		Exceeding	Εv	ideno	e
How Science				Calculate voltage, resistance, and current using the formula V=IR			Rearrange the formula V=IR algebraically without numbers			
WUIKS						_				
Application	Draw a circuit diagram to show how voltage can be measured in a simple circuit.			Given a table of voltage against current. Use the ratio of voltage to current to determine the resistance.			Use an analogy like water in pipes to explain why part of a circuit has higher resistance.			T
Explanations										1
	Be able to identify the following components: battery, resistor, light, ammeter, voltmeter, and switch			Be able to draw and describe a circuit diagram with the following components: battery, resistor, light, ammeter, voltmeter, and switch			Be able to describe how components with resistance reduce the current flowing and shift energy to the surroundings.			
Descriptions			_	Describe/know the following terms: electrical conductor and		_	Draw conclusions about safety risks, from data on voltage, resistance and			+
Descriptions	Describe/know the following terms: Potential difference (voltage), resistance, and amperage (current)			electrical insulator			current.			
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	Queen's Park High School			Stage 3 Assessment Science-	Phys	<u>sics</u>	IA6 target	IA6 target			
Heating and Cooling											
Year 8	Working Towards	RA	G	Meeting	RAG		Exceeding	RAG			
Practical Skills	Observe and describe the heating of ice			Investigate how the colour of a container influences rate of heat loss			Sketch a graph to show the pattern of temperature change against time.				
Application	Describe how an object's temperature changes over time when beated or cooled			Describe how to insulate against each of the different types of heat transfer			Sketch diagrams to show convection currents in unfamiliar situations.				
Explanations	Explain observations about changing temperature in terms of energy transfer.			Explain how a method of thermal insulation works in terms of conduction, convection and radiation.			Evaluate a claim about insulation in the home or for clothing technology.				
Descriptions	Name the three different types of heat transfer			Describe conduction, convection and radiation in terms of particles or waves							
Student Explain	Student Self-assessment Final Self Assessment A.R.M Explain your self-assessment decision: Final Self Assessment A.R.M										
Signature:			ate:								

Teacher Assessment:									
Signature:	Date:								

	Queen's Park High School		<u>Key</u>	Stage 3 Assessment Science	- Phys	sics	IA6 target			
	Work									
Year 8	Working Towards	RA	G	Meeting	RAG		Exceeding	Εv	idenc	e
How Science Works	State what is meant by 'work done' Describe what factors affect work done			Draw a diagram to explain how a lever makes a job easier.			Compare and contrast the advantages of different levers in terms of the forces needed and distance moved.			
Application	State the unit for work done			Compare the work needed to move objects different distances. Use the formula: work done (J) = force (N) x distance moved (m) to compare energy transferred for objects moving horizontally.						
Student Self-assessment Explain your self-assessment decision:			nal S	Self Assessment A.R.M						
Signature:		D	ate:							

Teacher Assessment:									
Signature:	Date:								