

		Current										
Year 7	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence		
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 Self-assessment
Explain your self-assessment decision:

Final Self Assessment A.R.M

Teacher Assessment:

Signature:

Date:

Energy Costs												
Year 8	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence		
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 Self-assessment

Final Self Assessment A.R.M

Explain your self-assessment decision:

Teacher Assessment:

Signature:

Date:

Energy Transfers							Evidence					
Year 7	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence		
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 give 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 business Explain why processes such as swinging pendulums or bouncing balls cannot go on forever, in terms of energy			
Explanations	Compare the percentages of energy wasted to usefully energy				Explain an energy transfer with more than two products Explain where wasted energy goes							
Descriptions					Describe how When energy is transferred, the total is conserved, but some energy is dissipated, reducing the useful energy				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											

Student Self-assessment
Explain your self-assessment decision:

Final Self Assessment A.R.M

Teacher Assessment:

Signature:

Date:

Gravity							Evidence					
Year 7	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence		
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			

Student Self-assessment Final Self Assessment A.R.M

Explain your self-assessment decision:

Signature: Date:

Teacher Assessment:

Signature: Date:

Voltage and resistance										Evidence	
Year 7	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence	
How Science Works					Calculate voltage, resistance, and current using the formula $V=IR$				Rearrange the formula $V=IR$ algebraically without numbers		
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.		
Explanations	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: Potential difference (voltage), resistance, and amperage (current)				Describe/know the following terms: electrical conductor and electrical insulator				Draw conclusions about safety risks, from data on voltage, resistance and current.		

Student Self-assessment
 Explain your self-assessment decision:

Final Self Assessment A.R.M

Signature:

Date:

Teacher Assessment:

Signature:

Date:

Work							Evidence					
Year 8	Working Towards	RAG			Meeting	RAG			Exceeding	Evidence		
How Science Works	State what is meant by '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.			
	Describe what factors affect work done				Compare the work needed to move objects different distances.							
Application	State the unit for work done				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:

Final Self Assessment A.R.M

Signature:

Date:

Teacher Assessment:

Signature:

Date: