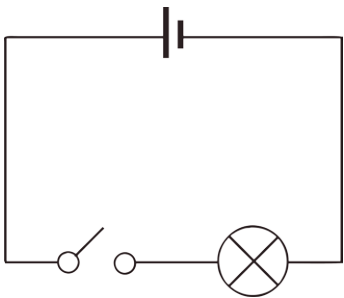
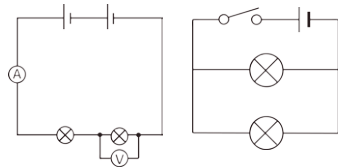


Electricity Homework Grid Answers

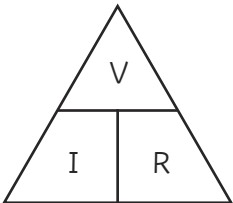
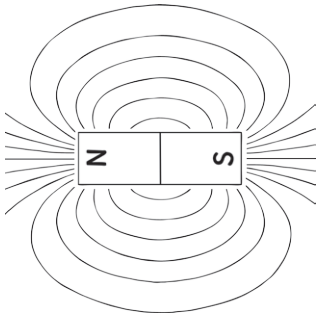
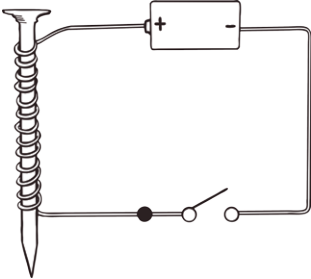
Complete some of the tasks below to reach a total of ____ points over this unit of work.

Topic	1 Point	2 Points	4 Points	6 Points	10 Points
Lesson 1 Introduction to Circuits		You could get a wide variety of answers for this homework. The key thing is that the students have selected a device that is powered by batteries and explained how the batteries are able to power it.	You may get a variety of answers. Some students may simply list and label the components in a circuit while others may go into more detail and describe what each component is used for.	Students produce a timeline of the main advances in electricity with specific reference to the light bulb. This may include images and would be a great use of maths skills if it was drawn to scale. An explanation of how this moved scientific research forward should be encouraged for more able students.	Students should produce a flow diagram. They should include the keywords generator, step-up and step-down transformer, power lines.
Lesson 2 Modelling Circuits	There will be a variety of answers to the task of creating an old-style 140 character 'tweet' describing what current is. Current is the flow of charge around a circuit. The faster the charge flow, the higher the current.	You could get a wide variety of answers for this homework. The key thing is that the students have thought about how their lives would be impacted by a lack of electricity.	You may get a variety of answers. Some students may draw a simple circuit and briefly describe the role of current and voltage. Others may go into more detail and include the role of electrons in the circuit.	You will get a variety of answers for this homework. Students should include keywords. For example, cell or battery, voltage, current, wires. They should be able to explain which parts of their model represent those key parts.	You may get a wide variety of examples for this activity. Some students will stick some craft materials down on paper, others may make 3D models or even bake! The best examples will have labelled the parts and found a way to include their functions, either as descriptions on the model or as a key.

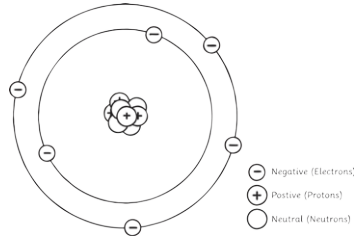


Lesson 3 Measuring Voltage	There will be a variety of answers to the task of creating an old-style 140 character 'tweet' describing what voltage is. Voltage is the push given by the battery. The voltage of a battery tells us how much energy it provides to the components in the circuit.	Student's definitions may vary. They should be similar to the following: a cell is a single unit that converts chemical energy into electrical energy. A battery is more than one cell connected positive to negative.	You will get a wide variety of answers for this. The main idea is that pupils have explained the significance of voltage.	Students will provide a variety of answers. The key is that they are able to explain how a battery works using the keywords.	Students will provide a variety of answers. Students must include a description of his work, particularly his work on frogs.
Lesson 4 Series Circuits	Always draw circuits using straight lines. Use a pencil and a ruler to draw these lines.	Student's answers will vary in the amount of electrical appliances they have in each room. Example answers may include television, games console and lamp.	A flashcard for each circuit symbol should include the name of each symbol and one possible use.	Students should produce a flashcard which consists of the circuit symbol and what it is. Students should make flashcards for a bulb, wire, battery, cell, ammeter and voltmeter.	Students will provide a variety of answers. You are looking for a design that incorporates student's knowledge of electrical circuits and how it can be implemented in a real-life situation.
Lesson 5 Parallel Circuits	The variables are the independent, dependent and control.	 <p>Students may produce a variety of different circuits. The examples here have been included to give you an idea of what to look for.</p>	Students will provide a variety of different answers. The aim is to ensure that students describe the differences between series and parallel circuits.	Students will provide a variety of different answers. The main aim is to ensure that the differences between series and parallel circuits are explained.	Students should be able to explain that our houses are wired in parallel so that if one lightbulb goes out, then the others will not.



Lesson 6 Resistance	Resistance is measured in ohms (Ω). resistance (Ω) = voltage (V) \div current (A)		You will get a wide variety of answers for this. The idea is that the more resistance there is, the harder it will be for the current to flow.	You will get a wide variety of answers for this. The idea is that the more resistance there is, the harder it will be for the current to flow.	You will get a wide variety of answers for this. The idea is that students will include keywords and their definitions such as voltage, current and electron.
Lesson 7 Magnets		The keyword list could include: current, voltage, battery, cell, voltmeter, ammeter, open switch, closed switch, attract, repel, model, resistance, formula triangle, independent variable, dependent variable, control variable.	Students will provide a variety of answers. Some examples include fridge magnets, audio speakers, electric motors and computers.	Students will produce a variety of answers, but should be able to make links between only magnetic materials being collected by a magnet compared to non-magnetic materials.	Students will provide a variety of answers, but should be able to explain that like charges repel and opposites attract.
Lesson 8 Making Electromagnets	Students should provide you with a brief description of the way that magnets are used on the tracks the Maglev train runs on.	Student's definitions may vary. However, they should be similar to the following. An electromagnet is a type of magnet and the magnetic field it produces is the result of an electrical current flowing through it.		Students should be able to apply their knowledge of how an electromagnet works by linking it to the structure of a speaker. Labelled diagrams can be used to help students explain their answer.	You could provide the students with a six mark question for them to write the answer for, or you could ask them to come up with their own question too. You're looking for evidence that the mistakes have been identified. You may want the students to produce their own mark scheme to go along with this.



Lesson 9 Static Electricity	<p>Students should write a definition of static electricity. You may get a variety of definitions that may include the following: static electricity occurs when an object either loses or gains a negative charge.</p>	<p>You will receive a variety of posters. Some examples of dangers that students may include are overloaded sockets, sockets close to water and children putting knives in the toaster.</p>	<div data-bbox="1070 135 1422 375">  </div> <p>Students should have also included the charges on each subatomic particle. Electrons are negative, protons are positive and neutrons are neutral.</p>	<p>Students may provide you with a variety of answers and some may include the following: petrol tankers travelling on the roads, using a mobile phone on a petrol station forecourt and cleaning an oil tanker.</p>	<p>Students will provide a wide variety of answers but should include keywords such as charge.</p>
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