

KS3[Y7-9] Assessed skills	Aims and objectives	Exam board [KS4 -Y10/11] [GCSE] and reference			Activity and things to do
	Understand that electricity can be produced directly from the Sun's radiation using solar cells	AQA	Science A	unit 9.1 p23	Solar Cell Investigations
	Electricity can be produced directly from the Sun's radiation using solar cells.	AQA		unit 13.4 p51	Solar Cell Investigations
	Electricity can be produced directly from the Sun's radiation using solar cells.	AQA		unit 18 p69	Solar Cell Investigations
	"To compare and contrast the particular advantages and disadvantages of using different energy sources to generate electricity (13.4). Electricity can be produced directly from the Sun's	AQA	Physics	Unit 1a:	Understanding Energy and electricity
	"Know that nuclear fuels and renewable energy resources (wind, solar, hydroelectric, wave, tidal) may be used as alternatives to fossil fuels (11.3). Appreciate the problems of using nuclear fuels (problems of radioactive emissions, disposal of waste) and of using	AQA	Applied Science (Double)	Unit 2 Science for the needs of society	Alternative sources of electrical energy
	To follow simple instructions for carrying out a practical task and work safely.	AQA	Science A	Grade Descriptions. Grade F p 81	Assemble the car kit or make-up car
	To describe the effects of varying the current on bulb brightness, motor speed and heater output.	CCEA double award	Science	module 3.6.33 p54	Solar Kit motor operation
	To understand the role of conductors, insulators and switches in simple series and parallel circuits.	CCEA double award	Science	module 3.6.32 p54	Build kits by connecting solar cells.

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	Work safely, and accurately follow the working methods.	CCEA double award	Science	Key Skill: Working with Others p88	Assemble the car kit or make-up car
	"To examine series and parallel circuits and draw them, using the correct symbols. To investigate the rule for current and voltage in each type of circuit."	CCEA single award	Science	module 5 p45	Build kits by connecting solar cells.
	To follow simple instructions for carrying out a practical task and work safely.	CCEA single award	Science	Grade Descriptions. Grade F p 59	Assemble the car kit or make-up car
	Be able to recall, explain, describe and use appropriately specific terms (solar cell)	EDEXCEL	Science	unit P1a p62	Solar Cell Investigations
	Interpret data about solar cells, including their efficiency, and suggest why they are not yet in widespread use.	EDEXCEL		unit P1a p67	Solar Cell Investigations
	To explore different sources of electric current and to investigate the relationship between voltage and current in a resistor and a filament	EDEXCEL	360Science	unit P1a p61	Producing and Measuring Electricity

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	To investigate practically or otherwise the voltage and current output, and the advantages and disadvantages of different batteries (both	EDEXCEL	360Science	unit P1a p63	Producing and Measuring Electricity
	To understand how a motor may be controlled using electricity.	EDEXCEL	360Science	topic 10 p65	Solar Kit motor operation
	Be able to recall, explain, describe and use appropriately words and phrases. (electricity, motor, solar power)	EDEXCEL	360Science	topic 10 p66	Solar Kit motor operation
	To understand how a DC electric motor works	EDEXCEL	360Science	P1a 10.4 p67	Solar Kit motor operation
	To examine if nuclear energy provides an important economic basis for the production of electricity in the modern world.	EDEXCEL	360Science	Topic 12. Power of the atom. P 123-125	List sources of electrical energy
	Evaluate whether renewable energies such as solar power and wind power can meet the UK's future electricity needs, and evaluate their economic, environmental and social impact (P1 a 10.1). Interpret data about the efficiency of solar cells and suggest why they are not yet in widespread use (P1 a 10.8).	Edexcel		Topic 10: You're in charge	Evaluating renewable energies
	To understanding the quantitative relationship between power, voltage and current.	KS3 programme of study - OLD	Science	Sc4 Physical processes p54	Producing and Measuring Electricity
	To design and construct series and parallel circuits, and how to measure current and voltage.	KS3 programme of study - OLD	Science	Sc4 Physical processes p36	Build kits by connecting solar cells.

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	To investigate forces and motion, and describe the movement of, familiar things.	KS3 Programme Study of OLD	Science	Sc4 Physical processes p.21	Assemble the car kit or make-up car
	To investigate forces and motion and ways in which frictional forces, including air resistance, affect motion	KS3 Programme Study of OLD	Science	Sc4 Physical processes p.36	Assemble the car kit or make-up car
	To identify different light sources, including the Sun	KS3 Programme Study of OLD	Science	Sc4 Physical processes p 19	Identify and test PV cells
	To construct circuits, incorporating a battery or power supply and a range of switches. To make electrical devices work [for example, buzzers,	KS3 Programme Study of OLD	Science	Science key stage 2 Sc4 Physical	Draw circuit diagrams of solar electric car
	to design and construct series and parallel circuits, to measure current and voltage. To understand that the current in a series circuit depends on the number of cells and the number and nature of other components and that current is not 'used up' by components. To understand that energy is transferred from batteries and other sources to other	KS3 Programme Study of OLD	Science	Science key stage 3 Sc4 Physical processes p34	Draw circuit diagrams of solar electric car identifying electrical symbols
	to investigate the variety of energy resources, including oil, gas, coal, biomass, food, wind, waves and batteries, To understand the distinction between renewable and non-	KS3 Programme Study of OLD	Science	Science key stage 3 Sc4 Physical processes p35	Construct model kits using PV cell and conventional batteries

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	Recall two examples to show that we can use renewable energy sources instead of fuels to generate electricity (P3.3, 5).	OCR	Twenty First Century Science	Module P3: Radioactive materials	Renewable sources of electricity.
	To debate the issue about generating electricity from nuclear fission.	OCR A	Science A	Module P3. Radioactive materials. P45.	List sources of electrical energy
	To follow simple instructions for carrying out a practical task and work safely.	OCR A	Science A	Appendix A: Grade Descriptions grade F p79	Assemble the car kit or make-up car
	To understand the horizontal motion of objects.	OCR A	Additional Science A	Module P4 Explaining motion p.22	Assemble the car kit or make-up car
	To follow simple instructions for carrying out a practical task and work safely.	OCR A	Additional Science A	Appendix A: Grade Descriptions	Assemble the car kit or make-up car
	Investigate how the voltage and current from a photocell varies with distance from the light source. Research the use of photocells for providing electricity in remote locations.	OCR B	Gateway Science Suite	module P2 p92	Position of the Sun
	Investigate how the voltage and current from a photocell varies with distance from the light source.	OCR B	Gateway Science Suite	module P2 p92	Producing and Measuring Electricity
	To consider the economic and environmental costs of the different energy sources used today. To understand that the heat energy for	OCR B	Gateway Science Suite	Module P2 Living for the future. P96	List sources of electrical energy
	To follow simple instructions for carrying out a practical task and work safely.	OCR B	Gateway Science Suite	Appendix A: Grade Descriptions	Assemble the car kit or make-up car

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	Investigate how the voltage and current from a photocell varies with distance from the light source. Research the use of photocells for providing electricity in remote locations.	OCR B		Module P2: Living for the future	Position of the light source
	To investigate that nuclear fission is a major source of energy and can be used to produce electricity.	OCR B	Additional Science B	Module P4 Radiation for life. P106 -107	List sources of electrical energy
	A practical experiment to investigate the speeds of toy cars on ramps.	OCR B	Additional Science B	Module P3 Forces for Transport p.42	Use of constructed kit
	Looking at data from cars, sport and animals then transferring it to graphical form for analysis (distance - time graphs).	OCR B	Additional Science B	Module P3 Forces for Transport p.42	Experiments using models
	To follow simple instructions for carrying out a practical task and work safely.	OCR B	Additional Science B	Appendix A: Grade Descriptions	Assemble the car kit or make-up car
	To show how certain features can increase safety in vehicles	OCR B	Additional Science B	Module 3 Forces for Transport p53	Body shell design and construction
	To recognise that frictional forces (drag, friction, air resistance): • act against the movement; • can be reduced (shape, lubricant).	OCR B	Additional Science B	Module 3 Forces for Transport p54	Body shell design and construction
	"Pupils should learn: • that renewable energy resources include wind, waves, running water, sunlight, biomass and some geothermal sources • how a device works using a renewable energy resource"	QCA KS3		Unit 7I Energy resources	Types of energy
	The study of Input and output devices in detail from the point of view of energy conversions and/or electrical properties.	SQA	Physics	unit 4 Electronics p48	Solar Cell Investigations

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	To enable students to Carry out experiments to investigate the behaviour of a solar cell.	SQA		unit 4 Electronics p51	Solar Cell Investigations
	To be able to measure light intensity using a meter in three different locations	SQA	Standard Grade Revised Arrangements in Science	unit 5 p43	Position of the Sun
	Investigating the conversion of electrical energy from the original source. A range of types of power station is considered.	SQA	Physics	Unit 6. Energy Matters p 64	Understand PV cell construction
	To understand non-renewable Sources of Energy, Alternative Sources of Energy, Renewable Sources of Energy.	SQA	Science	Topic 3. Energy and its uses. P 29 - 31	List sources of electrical energy
	To be able to explain an adverse effect of using fossil fuels and nuclear power as energy sources.	SQA	Biology	Topic 1. the Biosphere. P 21	List sources of electrical energy
	To be able to draw and identify the circuit symbol for a battery, fuse, lamp, switch, resistor, capacitor, diode and variable resistor	SQA	Physics	Unit 2. Using Electricity. P 28 - 33	Draw Circuit Diagrams of car/boat kits
	Use data to explore the cost-effectiveness of introducing domestic solar and wind energy equipment, including fuel-cost savings and payback time (3e).	WJEC	Science Physics 1		Domestic renewable energy

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	Assemble and assess the effectiveness of each electrical and/or electronic device.	WJEC 2010	GCSE in Applied Science Double Award	Unit 3 p.35	Assemble the car kit or make-up car