

AQA 1214

Specific Reference & Topic	How Science Works Objective	Specific Learning Object	ASE Reference	Comments
Biology 1a: Human Biology 11.1 How do human bodies respond to changes inside them and to their environment?	4a	To evaluate the benefits of, and the problems that may arise from, the use of hormones to control fertility, including IVF.		
Biology 1a: Human Biology 11.1 How do human bodies respond to changes inside them and to their environment?	1b	To evaluate the claims of manufacturers about sports drinks.	SATIS 14–16 Unit 901 The Cancer Detectives	Based on an actual case study on the causes of cancer of the oesophagus in Lin Xian. Role Play to analyse and produce actions based on the research.
Biology 1a: Human Biology 11.2 What can we do to keep our bodies healthy?	1b	To evaluate information about effect of food on health.	SATIS 14–16 Unit 606 The Tristan da Chunha Dental Surveys SATIS 703 Vegetarianism	Useful data on tooth decay relating to changing diet on an isolated island.
Biology 1a: Human Biology 11.2 What can we do to keep our bodies healthy?	2b	To evaluate claims made by slimming programmes.		
Biology 1a: Human Biology 11.3 How do we use/abuse medical and recreational drugs?	1b	To evaluate the effect of statins on cardiovascular disease.		
Biology 1a: Human Biology 11.3 How do we use/abuse medical and recreational drugs?	2b	To evaluate the different types of drugs and why some people use illegal drugs for recreation.		
Biology 1a: Human Biology 11.3 How do we use/abuse medical and recreational drugs?	2b	To evaluate claims made about the effect of cannabis on health and the link between cannabis and addiction to hard drugs.		
Biology 1a: Human Biology 11.3 How do we use/abuse medical and recreational drugs?	4c	To explain how the link between smoking tobacco and lung cancer gradually became accepted.	SATIS 508 Risks	Useful exploration of the concept of risk.

Biology 1a: Human Biology 11.3 How do we use/abuse medical and recreational drugs?	2b	To evaluate the different ways of trying to stop smoking.		
Biology 1a: Human Biology 11.4 What causes infectious diseases and how can our bodies defend themselves against them?	3c	To relate the contribution of Semmelwess in controlling infection to the solving of the modern problem of the spread of infection in hospitals.		
Biology 1a: Human Biology 11.4 What causes infectious diseases and how can our bodies defend themselves against them?	4a	To evaluate the advantages and disadvantages of being vaccinated against a particular disease.		
Biology 1a: Human Biology 11.4 What causes infectious diseases and how can our bodies defend themselves against them?	3c	To explain how the treatment of disease has changed as a result of increased understanding of the action of antibodies and immunity.		
Biology 1a: Human Biology 11.4 What causes infectious diseases and how can our bodies defend themselves against them?	3a	To evaluate the consequence of mutations of bacteria and viruses in relation to epidemics and pandemics, e.g. bird influenza.	SATIS 909 AIDS	
Biology 1b: Evolution and Environment 11.5 What determines where particular species live and how many of them are there?	3a	To suggest how organisms adapt to the conditions in which they live.	SATIS 906 IT in the Greenhouse SATIS 801 The Water Pollution Mystery	Basic information on conditions needed by growing plants. Probably a beginning activity in conjunction with some work on electronic control systems. Good data analysis problem.
Biology 1b: Evolution and Environment 11.5 What determines where particular species live and how many of them are there?	3c	To suggest the factors for which organisms are competing in a given habitat.	Investigating the Environment at KS3 and 4 SATIS 801 The Water Pollution Mystery	Ideas for practical investigations. Good data analysis problem.
Biology 1b: Evolution and	2a	To suggest reasons for the distribution of animals	Investigating the Environment	Ideas for practical

Environment 11.5 What determines where particular species live and how many of them are there?		or plants in a particular habitat.	at KS3 and 4	investigations.
Biology 1b: Evolution and Environment 11.6 Why are individuals of the same species different from each other? What new methods do we have for producing plants and animals with the characteristics we prefer?	3c	To interpret information about cloning techniques and genetic engineering techniques.	SATIS 309 Microbes Make Human Insulin	Factual information. Good discussion activity.
Biology 1b: Evolution and Environment 11.6 Why are individuals of the same species different from each other? What new methods do we have for producing plants and animals with the characteristics we prefer?	4b	To make informed judgements about the economic, social and ethical issues concerning cloning and genetic engineering, including GM crops.		
Biology 1b: Evolution and Environment 11.7 Why have some species of plants and animals died out? How do new species of plants and animals develop?	1d	To suggest reasons why scientists cannot be certain about how life began on Earth.		
Biology 1b: Evolution and Environment 11.7 Why have some species of plants and animals died out? How do new species of plants and animals develop?	1c	To interpret evidence relating to evolutionary theory.		
Biology 1b: Evolution and Environment 11.7 Why have some species of plants and animals died out? How do new species of plants	4c	To suggest reasons why Darwin's theory of natural selection was only gradually accepted.		

and animals develop?				
Biology 1b: Evolution and Environment 11.7 Why have some species of plants and animals died out? How do new species of plants and animals develop?	1c	To identify the differences between Darwin's theory of evolution and conflicting theories.		
Biology 1b: Evolution and Environment 11.7 Why have some species of plants and animals died out? How do new species of plants and animals develop?	1c	To suggest reasons for the different theories.		
Biology 1b: Evolution and Environment 11.8 How do humans affect the environment?	2b	To analyse and interpret scientific data concerning environmental issues.	SATIS 801 The Water Pollution Mystery SATIS 1206 Green House Effect SATIS 1103 Save the Salmon	Good data analysis problem. Good data and discussion starter. Problem solving and modelling to reduce acidity of water.
Biology 1b: Evolution and Environment 11.8 How do humans affect the environment?	4b	To weigh evidence and form balanced judgements about some of the major environmental issues facing society, including the importance of sustainable development.	SATIS 102 Food from Fungus SATIS 210 The Pesticide Problem SATIS 910 Disposable Nappies SATIS 505 Making Fertilisers?	Useful starting point relevant to the food industry and alternative food sources. Useful decision-taking discussion activity.
Biology 1b: Evolution and Environment 11.8 How do humans affect the environment?	2d	To evaluate methods used to collect environmental data and consider their ability and reliability as evidence for environmental change.		
Chemistry 1a: Products from Rocks 12.1 How do rocks provide building materials?	4b	To consider and evaluate the environmental, social and economic effects of exploiting limestone and producing building materials from it.	SATIS 101 Sulphurcrete	Practical activity related to concrete as a material and acid rain.
Chemistry 1a: Products from	4a	To evaluate the developments in using limestone,	SATIS 101 Sulphurcrete	Practical activity related to

Rocks 12.1 How do rocks provide building materials?		cement, concrete and glass as building materials, and their advantages and disadvantages over other materials.		concrete as a material and acid rain.
Chemistry 1a: Products from Rocks 12.2 How do rocks provide metals and how are metals used?	4b	To consider and evaluate the social, economic and environmental impacts of exploiting metal ores, of using metals and of recycling metals.	SATIS 310 Recycling Aluminium SATIS 1001 Chocolate Chip Mining	Useful activity – suggest using cans instead of milk bottle tops. Good introduction to copper process with starter questions about environmental impacts.
Chemistry 1a: Products from Rocks 12.2 How do rocks provide metals and how are metals used?	4a	To evaluate the benefits, drawbacks and risks of using metals as structural materials and as smart materials.		
Chemistry 1a: Products from Rocks 12.2 How do rocks provide metals and how are metals used?	4a	To explain how the properties of alloys (but not smart alloys) are related to models of their structures.		
Chemistry 1a: Products from Rocks 12.3 How do we get fuels from crude oil?	4b	To evaluate the impact on the environment of burning hydrocarbon fuels.	SATIS 502 The Coal Mine Project	A structured debate about the development of a new coal mine.
Chemistry 1a: Products from Rocks 12.3 How do we get fuels from crude oil?	4b	To consider and evaluate the social, economic and environmental impacts of the uses of fuels.	SATIS 502 The Coal Mine Project	A structured debate about the development of a new coal mine.
Chemistry 1a: Products from Rocks 12.3 How do we get fuels from crude oil?	4a	To evaluate developments in the production and uses of better fuels, e.g. ethanol, hydrogen.	SATIS 201 Energy from Biomass	Relevant activity.
Chemistry 1b: Oils, Earth and Atmosphere 12.4 How are polymers and ethanol made from oil?	4b	To evaluate the social and economic advantages and disadvantages of using products from crude oil as fuels or as raw materials for plastic and other chemicals.		
Chemistry 1b: Oils, Earth and	4b	To evaluate the social, economic and	SATIS 105 The Bigger the	Looks at economies of scale in

Atmosphere 12.4 How are polymers and ethanol made from oil?		environmental impacts of the uses, disposal and recycling of polymers.	Better SATIS 910 Disposable Nappies	relation to ethane. Calculations may be useful for higher ability pupils.
Chemistry 1b: Oils, Earth and Atmosphere 12.4 How are polymers and ethanol made from oil?	4b	To evaluate the advantages and disadvantages of making ethanol from renewable and non-renewable sources.	SATIS 201 Energy from Biomass	Relevant.
Chemistry 1b: Oils, Earth and Atmosphere 12.5 How can plant oils be used?	4a	To evaluate the effects of using vegetable oils in foods and the impacts on diet and health.		
Chemistry 1b: Oils, Earth and Atmosphere 12.5 How can plant oils be used?	4a	To evaluate the benefits, drawbacks and risks of using vegetable oils to produce fuels.		
Chemistry 1b: Oils, Earth and Atmosphere 12.5 How can plant oils be used?	4a	To evaluate the use, benefits, drawbacks and risks of ingredients and additives in foods.		
Chemistry 1b: Oils, Earth and Atmosphere 12.6 What are the changes in the Earth and its atmosphere?	4c	To explain why the theory of crustal movement (continental drift) was not generally accepted for many years after it was proposed.		
Chemistry 1b: Oils, Earth and Atmosphere 12.6 What are the changes in the Earth and its atmosphere?	1d	To explain why scientists cannot accurately predict when earthquakes and volcanic eruptions will occur.	SATIS 1107 Mount St. Helens SATIS 1205 Earthquakes in Britain	Explanation of eruption and measurements made. Emergency decision making and building of earthquake detector.
Chemistry 1b: Oils, Earth and Atmosphere 12.6 What are the changes in the Earth and its atmosphere?	1c	To explain and evaluate theories of the changes that have occurred and are occurring in the Earth's atmosphere.	SATIS 1206 Green House Effect	Good data and discussion starter.
Chemistry 1b: Oils, Earth and Atmosphere	4b	To explain and evaluate the effects of human activities on the atmosphere.	SATIS 101 Sulphurcrete	Investigative-experimental activity linked to prevention of

12.6 What are the changes in the Earth and its atmosphere?			SATIS 901 Acid Rain SATIS 1206 Green House Effect	corrosion of buildings by acid rain. Some data about who is affected and how. Role-play discussion. Good data and discussion starter.
Physics 1a: Energy and Electricity 13.1 How is heat (thermal energy) transferred and what factors affect the rate at which heat is transferred?	1c	To evaluate ways in which heat is transferred in and out of bodies and ways in which the rates of these transfers can be reduced.		
Physics 1a: Energy and Electricity 13.2 What is meant by the efficient use of energy?	3c	To describe the intended energy transfers/transformations and the main energy wastages that occur with a range of devices.	SATIS 106 The Design Game SATIS 107 Ashton Island SATIS 704 Electric Lights	Useful idea for activity on insulation planning. Could be developed further. Cut and paste activity only useful for lower-ability pupils Still a very valid activity – group discussion and decision-making regarding energy production.
Physics 1a: Energy and Electricity 13.2 What is meant by the efficient use of energy?	4b	To evaluate the effectiveness and cost-effectiveness of methods used to reduce energy consumption.		
Physics 1a: Energy and Electricity 13.3 Why are electrical devices so useful?	3c	To compare and contrast the particular advantages and disadvantages of using different electrical devices for a particular application.		
Physics 1a: Energy and Electricity 13.4 How should we generate the electricity we need?	4b	To compare and contrast the particular advantages and disadvantages of using different energy sources to generate electricity.	SATIS 109 Nuclear Power	Activity still very relevant. Could do with updated data on some of the briefing sheets. Decision-taking role play.
Physics 1b: Radiation and the Universe	4a	To evaluate the appropriateness of radioactive sources for particular uses, including as tracers, in	SATIS 204 Using Radioactivity	Useful problem-solving activities, but factual material

<p>13.6 What are the uses and dangers of emissions from radioactive substances?</p>		<p>terms of the type(s) of radiation emitted and their half-lives.</p>	<p>SATIS 14–16 Unit 608 Should we Build a Fallout Shelter?</p>	<p>needs enhancing, e.g. from the internet for modern applications. In this activity students plan for a fictional city. A key role is played by the medical officer who may be questioned on the medical affects of a radioactive explosion.</p>
<p>Physics 1b: Radiation and the Universe 13.7 What do we know about the origins of the Universe and how it continues to change?</p>	<p>4a</p>	<p>To compare and contrast the particular advantages and disadvantages of using different types of telescope on Earth and in space to make observations on, and deductions about, the universe.</p>	<p>SATIS 1207 Radio Telescopes</p>	<p>Information and questions (some complex).</p>