

St. Mary's Science Department Topic Overview Sheet

Topic:	The Periodic Table	Year Group:	8
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Big Question:	Is the Periodic Table just a list of elements?
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Pupils should arrive at the unit already knowing:	In the Summer Term of Year 7, pupils studied Chemical reactions as the rearrangement of atoms. They began representing chemical reactions using formulae and using equations. They have seen combustion, thermal decomposition, oxidation and displacement as reactions. They have defined acids and alkalis in terms of neutralisation reactions. They are familiar with the pH scale for measuring acidity/alkalinity; and indicators. They should be familiar with Exothermic and endothermic chemical reactions (qualitative).
During this unit pupils will need to learn:	The varying physical and chemical properties of different elements. The principles underpinning the Mendeleev Periodic Table. Periods and groups. Metals and non-metals. How patterns in reactions can be predicted with reference to the Periodic Table. The properties of metals and non-metals. The chemical properties of metal and non-metal oxides with respect to acidity.
This unit links to the following future learning:	During the next topic, pupils will study the Reactivity of Metals.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Revue of knowledge concerning Atoms, Elements, compounds and Molecules. ● Increased fluency in terms such as Sonorous, malleable, density, melting and boiling points in order to distinguish metals from non-metals, and where they are arranged on the Periodic table. ● Identify the patterns, groups and periods of the periodic table. Using the Periodic table as a tool. ● Identifying common chemical and physical properties of Group 1 (Alkali Metals) by observation, and using observations to predict the properties of Caesium and Francium. ● Identifying common chemical and physical properties of Group 7 (the Halogens) by observation, and using observations to predict the displacement within the group 	acid rain chemical property Density displace displacement reaction group Group 0 Group Group 7 Halogen metal Metalloid noble gases Non-metal period physical property Reactive unreactive	https://www.bbc.co.uk/bitesize/topics/zv9nhcw/articles/zs7qqfr https://www.bbc.co.uk/bitesize/topics/zv9nhcw/articles/zf4pp4j https://www.bbc.co.uk/bitesize/topics/zv9nhcw/articles/zmpnn9a https://www.bbc.co.uk/bitesize/topics/zv9nhcw/articles/z8grr2p

Working scientifically skills in this unit:	AQA KS3 Science Syllabus 2.1 Analyse patterns - Spot a data point that does not fit a pattern (melting and boiling points of elements within groups) AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify a pattern in data from a results table or bar chart (comparing properties within groups of elements) AQA KS3 Science Syllabus 2.1 Analyse patterns - Express a linear relationship between variables in the form of an er... and er... style question. (statements relating to properties of elements and their position within a group)
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St. Mary's Science Department Topic Overview Sheet

Topic:	Metal Reactions and Reactivity	Year Group:	8
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Big Question:	BQ- Why is it useful to list Metals in order of how reactive they are?
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Pupils should arrive at the unit already knowing:	While studying the Periodic table, pupils learnt about the varying physical and chemical properties of different elements. They saw how patterns in reactions can be predicted with reference to the Periodic Table. They should be able to compare the properties of metals and non-metals. They have been introduced to the chemical properties of metal and non-metal oxides with respect to acidity.
During this unit pupils will need to learn:	The order of metals and carbon in the reactivity series. The use of carbon in obtaining metals from metal oxides. The properties of ceramics, polymers and composites.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> • Comparing the reactions of different metals with dilute acids. (The test for hydrogen gas.) • Compare the reactions of different metals with oxygen. Use state symbols in balanced formula equations. • Compare the reactions of metals with water. Use the reactivity series to predict reactions. • Predicting if a given pair of substances will undergo displacement. Use the reactivity series to explain displacement reactions. • Use the reactivity series to decide which metals can be extracted from their ores by heating with carbon. I can calculate the amounts of metals in ores. 	carbon fibre displace displacement reaction metal ore reactive reactivity series state symbol	https://www.bbc.co.uk/bitesize/topics/z3ksp4j/articles/z7jpsk7 https://www.bbc.co.uk/bitesize/topics/z3ksp4j/articles/zfy98hv

<p>Working scientifically skills in this unit:</p>	<p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Spot a data point that does not fit a pattern (reactivity series)</p> <p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify the variables from information about an investigation (displacement reactions)</p> <p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify a pattern in data from a results table or bar chart (displacement reactions)</p> <p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Express a linear relationship between variables in the form of an er... and er... style question. (displacement reactions)</p> <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Identify variables that could not control properly (surface areas of metals used in reactivity experiments with acid)</p> <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Comment on whether you finding fit with known scientific explanations (why does calcium not burn, why is aluminium not reactive in everyday life)</p> <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Suggest better ways to control variables (displacement reactions, amount of acid used)</p> <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Suggest ways to improve the method</p>
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St. Mary's Science Department Topic Overview Sheet

Topic:	Separation Techniques	Year Group:	8
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Big Question:	What scientific techniques can we use to make pure substances?
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Pupils should arrive at the unit already knowing:	<p>In Year 5, pupils compared and grouped together everyday materials on the basis of their properties, including:</p> <ul style="list-style-type: none">HardnessSolubilityTransparencyConductivity (electrical and thermal)Response to magnets <p>They saw that some materials will dissolve in liquid to form a solution, and described how to recover a substance from a solution. They used knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>In this topic, pupils will draw on their knowledge of Particle Theory and Atoms, Elements and Compounds in the context of mixtures, pure substances, and solutions to inform the study of separation.</p>
During this unit pupils will need to learn:	<p>Simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography, The identification of pure substances.</p> <p>Conservation of material and of mass, and reversibility, in melting, freezing, evaporation, sublimation, condensation, dissolving.</p> <p>Similarities and differences, including density differences, between solids, liquids and gases Diffusion in liquids and gases driven by differences in concentration the difference between chemical and physical changes.</p>
This unit links to the following future learning:	<p>In Year 8 pupils extend the idea of “pure” substances while studying the Periodic Table. They will also look at metals and the reactivity series as a means to extract metals from ores.</p>

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe particle arrangements in mixtures. Explain how to identify pure substances. ● Describe solutions using key words. Use the particle model to explain dissolving. Explain what a saturated solution is. Explain the meaning of solubility. ● Explain how filtration works. Describe how to filter a mixture. Explain how to use evaporation to separate mixtures. ● Explain how distillation works. ● Explain how chromatography separates mixtures. Analyse chromatograms to identify substances in mixtures. 	chromatogram chromatography dissolve distillation filtering filtrate filtration impure insoluble mixture pure residue saturated solution solubility solute solution solvent	https://www.bbc.co.uk/bitesize/topics/zych6g8/articles/zhjptrd https://www.bbc.co.uk/bitesize/topics/zych6g8/articles/z9rwwnb https://www.bbc.co.uk/bitesize/topics/zych6g8/articles/zidssk7 https://www.bbc.co.uk/bitesize/topics/zych6g8/articles/zkqjjsg https://www.bbc.co.uk/bitesize/topics/zych6g8/articles/zfwbvwx

Working scientifically skills in this unit:	<p>Analyse patterns - Read values from a line graph (solubility graphs) - Identify a pattern in data from a results table or bar chart (conservation of mass in dissolving)</p> <p>Discuss Limitations - Identify aspects of the method that did not go according to plan (rocksalt investigation) - Suggest ways to improve the method (rocksalt investigation)</p>
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St. Mary's Science Department Topic Overview Sheet

Topic:	The Earth and Cycles	Year Group:	8
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Big Question:	What is the Earth made from?
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Pupils should arrive at the unit already knowing:	In Year 7, pupils studied conservation of mass, changes of state and chemical reactions during the Atoms, Elements and Compounds topic. During the Separation Techniques topic, pupils gained knowledge of mixtures, solutions and filtration, which will be referenced during the study of the formation of rocks.
During this unit pupils will need to learn:	The composition of the Earth. The structure of the Earth. The rock cycle and the formation of igneous, sedimentary and metamorphic rocks. Earth as a source of limited resources and the efficacy of recycling. The carbon cycle. The composition of the atmosphere. The production of carbon dioxide by human activity and the impact on climate.
This unit links to the following future learning:	This unit relates directly to the following topic of Energy Resources and their effects.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe properties of the different layers of the Earth's structure. Describe the composition of the atmosphere. ● Describe/explain two properties of sedimentary rocks. Describe/Explain how sedimentary rocks are made. ● Compare the ways that igneous and metamorphic rocks form. ● Describe/explain how igneous and metamorphic rocks form. ● Use the rock cycle to explain how the material in rocks is recycled. 	Atmosphere biological weathering Cementation chemical weathering Combustion compaction crust Deposition erosion freeze-thaw Igneous inner core Lava magma mantle metamorphic outer core physical weathering Porous rock cycle sediment sedimentary transport troposphere uplift weathering	https://www.bbc.co.uk/bitesize/topics/z3fv4wx/articles/z9qpsk7 https://www.bbc.co.uk/bitesize/topics/z3fv4wx/articles/zkbbbqt https://www.bbc.co.uk/bitesize/topics/z3fv4wx/articles/zpygcmn https://www.bbc.co.uk/bitesize/topics/z3fv4wx/articles/z2xx6g8

Working scientifically skills in this unit:	AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify the variables from information about an investigation (Salol crystallisation experiment) AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify a pattern in data from a results table or bar chart (Salol crystallisation experiment) AQA KS3 Science Syllabus 2.1 Analyse patterns - Express a linear relationship between variables in the form of an er... and er... style question (Salol crystallisation experiment)
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St. Mary's Science Department Topic Overview Sheet

Topic:	Energy	Year Group:	8
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Big Question:	Where does energy come from, and where does it go?
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Pupils should arrive at the unit already knowing:	In the summer term of Year 7, pupils looked at heat transfer, which will be referenced again. In the previous topic, pupils studied the Earth as a source of limited resources and the efficacy of recycling. The carbon cycle. The composition of the atmosphere. The production of carbon dioxide by human activity and the impact on climate.
During this unit pupils will need to learn:	To compare energy values of different foods (from labels) (kJ). Compare power ratings of appliances in watts (W, kW). Comparing amounts of energy transferred (J, kJ, kW hour). Domestic fuel bills, fuel use and costs. Fuels and energy resources. Energy changes and transfers. Simple machines give bigger force but at the expense of smaller movement (and vice versa). Heating and thermal equilibrium: temperature difference between two objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation. Energy processes that change motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels.
This unit links to the following future learning:	The reference to power ratings of appliances and energy resources is relevant to the following topic of Electricity and Magnetism.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Compare the energy values of food and fuels. ● Describe energy before and after a change. Explain what brings about transfers in energy from energy store to energy store. ● The difference between energy and temperature. Describe/explain what happens when you heat up solids, liquids, and gases. ● What is meant by equilibrium. ● Energy transferred by particles in conduction and convection. Insulators can reduce energy transfer. Explain how energy is transferred by radiation. ● Calculate work done. Apply the conservation of energy to simple machines. 	chemical store Conduction conductor convection convection current Dissipated elastic store energy resources energy store equilibrium gear gravitational potential store Insulator joules kilojoules kinetic store law of conservation of energy Lever non-renewable Radiation renewable temperature thermal store thermometer work	https://www.bbc.co.uk/bitesize/topics/zc3g87h/articles/zg2sn9g https://www.bbc.co.uk/bitesize/topics/zc3g87h/articles/znw7jsg https://www.bbc.co.uk/bitesize/topics/z4brd2p/articles/zvg7jsg https://www.bbc.co.uk/bitesize/topics/z4brd2p/articles/z96g3j6

Working scientifically skills in this unit:	AQA KS3 Science Syllabus 2.1 Analyse patterns - Calculate mean from a set of data (data required for calculating work done) AQA KS3 Science Syllabus 2.1 Analyse patterns - Read values from a line graph (heat transfer experiments, equilibrium cooling experiment) AQA KS3 Science Syllabus 2.1 Analyse patterns - Spot a data point that does not fit a pattern (evaporation experiment) - Express a linear relationship between variables in the form of an er... and er... style question. (work done by pivots, levers and pulleys) AQA KS3 Science Syllabus 2.2 Discuss Limitations - Identify variables that could not control properly AQA KS3 Science Syllabus 2.2 Discuss Limitations - Identify aspects of the method that did not go according to plan - Suggest reason for difference in repeat readings - Comment on whether you finding fit with known scientific explanations - Suggest better ways to control variables - Suggest ways to improve the method AQA KS3 Science Syllabus 2.2 Discuss Limitations - Suggest ways to reduce measurement errors
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St. Mary's Science Department Topic Overview Sheet

Topic:	Electricity and Magnetism	Year Group:	8
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Big Question:	What links ELECTRICITY, ELECTROSTATICS and MAGNETISM?
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Pupils should arrive at the unit already knowing:	In Year 6, pupils associated the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. They compared and gave reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. They used recognised symbols when representing a simple circuit in a diagram. Pupils constructed simple series circuits, to help them to answer questions about what happens when they try different components, for example, switches, bulbs, buzzers and motors. They learnt how to represent a simple circuit in a diagram using recognised symbols.
During this unit pupils will need to learn:	Electric current measured in amperes. Series and parallel circuits, currents add where branches meet and current as flow of charge. Battery and bulb ratings; resistance. Differences in resistance between conducting and insulating components. Static electricity: separation of positive or negative charges when objects are rubbed together, transfer of electrons and forces between charged objects. The idea of electric field: forces acting across the space between objects not in contact. Magnetism: magnetic poles, attraction and repulsion. Magnetic fields representation by field lines. The magnetic effect of a current, electromagnets, D.C. motors (principles only).

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe/explain how charged objects interact. Investigate how objects can become charged. Investigate the effects of an electric field. ● Describe what is meant by current. To measure current. ● The difference between series and parallel circuits. Describe how current may vary in series and parallel circuits. ● Investigate the difference between conductors and insulators in terms of resistance. ● How magnets interact. How to represent magnetic fields including the Earth's. ● How to make an electromagnet. Describe/explain how to change the strength of an electromagnet. ● Uses of electromagnets. 	<p>Ammeter amps attract Battery cell Conductor core current electric charge electrical field electromagnet Electron insulator magnetic field magnetic field lines Magnetise motor Negative neutral Neutron north pole Parallel positive Proton repel Resistance series south pole switch Voltage voltmeter volts</p>	<p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/zshqgfr</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z8mxgdm</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z2s6cj6#ztfr8p3</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z4h94xs</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/zd794xs#zt4yf82</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/zim8kty</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z2tiwnb#zb8gg7h</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/zs3htrd</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z34yf82</p> <p>https://www.bbc.co.uk/bitesize/topics/zgy39i6/articles/z6n27vc</p>

<p>Working scientifically skills in this unit:</p>	<p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Spot a data point that does not fit a pattern (current at different points in a circuit / short circuits)</p> <ul style="list-style-type: none"> - Identify the variables from information about an investigation (investigation into factors affecting current) - Identify a pattern in data from a results table or bar chart (investigation into factors affecting current, current in a series or parallel circuit) - Express a linear relationship between variables in the form of an er... and er... style question. (investigation into factors affecting current) <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Identify variables that could not control properly</p> <ul style="list-style-type: none"> - Identify aspects of the method that did not go according to plan (short circuits) - Suggest ways to improve the method (making electromagnets)
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St. Mary's Science Department Topic Overview Sheet

Topic:	Waves and Sound	Year Group:	7
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Big Question:	Water travels in waves, but what else does?
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Pupils should arrive at the unit already knowing:	In Year 4 identified how sounds are made, associating some of them with something vibrating. They recognised that vibrations from sounds travel through a medium to the ear. They found patterns between the pitch of a sound and features of the object that produced it. They found patterns between the volume of a sound and the strength of the vibrations that produced it. They recognised that sounds get fainter as the distance from the sound source increases. Pupils will relate Particle theory (studied in the Spring term) to sound travelling in different mediums.
During this unit pupils will need to learn:	Waves on water as undulations which travel through water with transverse motion; these waves can be reflected, and add or cancel – superposition. Sound waves. Frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound. Sound needs a medium to travel, the speed of sound in air, in water, in solids. Sound produced by vibrations of objects, in loud speakers, detected by their effects on microphone diaphragm and the ear drum. Sound waves as longitudinal waves. Auditory range of humans and animals.
This unit links to the following future learning:	Use of slinky springs to investigate types of wave. Investigating frequencies of sound waves, measured in hertz (Hz); echoes, reflection and absorption of sound.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe/explain the different types of waves and their features. ● Describe/explain how sound is produced and travels. ● Why the speed of sound is different in different media. Contrast the speed of sound and the speed of light. ● Describe the link between loudness and amplitude and the link between pitch and frequency. ● Describe how the ear works. I can describe how your hearing can be damaged. I can describe how a microphone detects sound. 	<p>Amplifier amplify amplitude audible range auditory canal auditory nerve cochlea Compression crest decibel Diaphragm ear eardrum Echo hertz incident wave inner ear Kilohertz longitudinal Loudness medium Microphone middle ear Oscillation oscilloscope Ossicles outer ear pinna Pitch rarefaction Receiver reflected wave Reflection speed of sound Superpose transmitter Transverse trough vacuumvibration</p>	<p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zh28jsg</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zpm3r2p</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zvn9dp3</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zsg26g8</p>

Working scientifically skills in this unit:	<p>AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify a pattern in data from a results table or bar chart (Hearing ranges of different animals)</p> <p>AQA KS3 Science Syllabus 2.2 Discuss Limitations - Identify variables that could not control properly (sound pollution)</p>
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St. Mary's Science Department Topic Overview Sheet

Topic:	Light	Year Group:	7
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Big Question:	What makes Light so special?
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Pupils should arrive at the unit already knowing:	In Year 6, pupils saw that light appears to travel in straight lines, and they used this idea to explain that objects are seen because they give out or reflect light into the eye. They explained that we see things because light travels from light sources to our eyes or from light sources to objects, and then to our eyes. They used the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
During this unit pupils will need to learn:	The similarities and differences between light waves and waves in matter. Light waves travelling through a vacuum. The speed of light. The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface. Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative). The human eye. Light transferring energy from source to absorber leading to chemical and electrical effects. Photo-sensitive material in the retina and in cameras. Colours and the different frequencies of light, white light and prisms. Differential colour effects in absorption and diffuse reflection.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe what happens when light interacts with materials. State the speed of light. Explain how images are formed in a plane mirror. ● The difference between specular reflection and diffuse scattering. Describe and explain what happens when light is refracted. ● Describe what happens when light travels through a lens. ● Compare how the eye works to a simple camera. ● Describe/explain what happens when light passes through a prism. ● Describe how primary colours add to make secondary colours. Explain how filters and coloured materials subtract light. 	<p>absorb angle of incidence angle of reflection Converging convex Cornea diffuse reflection Dispersion emit eye Filter focal point focus Frequency image incident ray inverted Iris law of reflection Lens luminous medium Non-luminous normal Opaque optic nerve photoreceptors pinhole camera plane primary colour prism pupil Reflect reflected ray Refraction retina secondary colour spectrum specular reflection tertiary colour translucent transmit transparentwave</p>	<p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/z7rckty#z2c48hv</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zb8jmbk</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/z4mts82</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zw2ts82</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/zryrkvh#zvsb46f</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/z7rtng8</p> <p>https://www.bbc.co.uk/bitesize/topics/zw982hv/articles/z6mpywx</p>

Working scientifically skills in this unit:	AQA KS3 Science Syllabus 2.1 Analyse patterns - Identify a pattern in data from a results table or bar chart (Angle of incidence linked to angle of reflection)
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St. Mary's Science Department Topic Overview Sheet

Topic:	Ecosystem Processes	Year Group:	8
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Big Question:	How do organisms coexist? (This topic is subject to review as to whether it will be covered at middle school. Time limitations mean it is not completed)
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Pupils should arrive at the unit already knowing:	In Year 7 Pupils learned the organisation of the body.Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms.
During this unit pupils will need to learn:	The reactants in, and products of photosynthesis, and a word summary for photosynthesis. The dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere. The adaptations of leaves for photosynthesis. Aerobic respiration in living organisms, including the breakdown of organic molecules to enable all the other chemical processes necessary for life. A word summary for aerobic respiration. The products formed in aerobic and anaerobic respiration and the implications for the organism. The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops. How organisms affect, and are affected by, their environment, including the accumulation of toxic materials.

During this unit pupils will have the following key experiences:	During the unit pupils will use the following key vocabulary:	The following links to Bitesize support this topic
<ul style="list-style-type: none"> ● Describe the process of photosynthesis. State the word equation for photosynthesis. ● Describe the structure and function of the main components of the leaf. ● Explain the distribution of the chloroplasts in the leaf. ● Describe how a plant uses minerals for healthy growth. ● State the word equation for aerobic respiration. ● Describe the process of respiration. State the word summary for anaerobic respiration. ● Describe what food chains show. ● Describe the interdependence of organisms. Describe how different organisms co-exist within an ecosystem. Identify niches within an ecosystem. 	aerobic respiration chlorophyll co-exist Community consumer deficiency Ecosystem fermentation fertiliser food chain food web habitat haemoglobin interdependence niche Nitrates phosphates Photosynthesis plasma population Predator prey producer stomata	

Working scientifically skills in this unit:	Presenting data - Select a good way to display data. Create line graphs to display relationships. Develop an explanation. Communicate ideas, evidence and reasoning. Justify opinions - List all the facts, scientific ideas, data, or conclusions that support your opinion. Identify the most important piece of evidence, as well as one or two supporting pieces of evidence.
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