

Key Performance Indicators	Year 8 Milestones - Science
Biology	
Nutrition and Digestion	I can describe the components of a healthy diet; and I can explain the role of each food group in the body.
	I can describe how to test foods for starch, lipids, sugar and protein; and I can describe the positive result for each food test.
	I can describe some health issues caused by an unhealthy diet; and I can calculate the energy requirements of different people.
	I can describe the structure and function of the main parts of the digestive system; and I can describe the process of digestion.
	I can describe the role of enzymes in digestion; and I can describe the role of bacteria in digestion.
	I can describe the difference between recreational and medicinal drugs; and I can describe the effects of drugs on health and behaviour.
	I can describe the effect of alcohol on health and behaviour; and I can describe the effect alcohol has on conception and pregnancy.
	I can describe the effects of tobacco smoke on health; and I can describe the effects of tobacco smoke on pregnancy.
Ecosystems	I can describe the process of photosynthesis; and I can state the word equation for photosynthesis.
	I can describe the structure and function of the main components of a leaf; and I can explain the distribution of chloroplasts in a leaf.
	I can describe how a plant uses minerals for healthy growth; and I can explain the role of nitrates in plant growth.
	I can describe where chemosynthesis takes place; and I can describe the process of chemosynthesis.
	I can state the word equation for aerobic respiration; and I can describe the process of aerobic respiration.
	I can state the word equation for anaerobic respiration; and I can describe the differences between aerobic and anaerobic respiration.
	I can describe what food chains show; and I can describe what food webs show.
I can describe the interdependence of organisms; and I can describe how toxic materials accumulate in a food web.	

Ecosystems	I can describe how different organisms co-exist within an ecosystem; and I can identify niches within an ecosystem.
Adaptation and Inheritance	I can describe some resources that plants and animals compete for; and I can describe how organisms are adapted to their environments.
	I can describe how organisms adapt to environmental changes; and I can describe how competition can lead to adaptation.
	I can describe how variation in species occurs; and I can describe the difference between environmental and inherited variation.
	I can describe the difference between continuous and discontinuous variation; and I can represent variation within a species using graphs.
	I can describe how characteristics are inherited; and I can describe how scientists worked together to develop the DNA model.
	I can describe the process of natural selection; and I can describe how organisms evolve over time.
	I can describe some factors that may lead to extinction; and I can describe the purpose of gene banks.
Chemistry	
The Periodic Table	I can explain how elements are classified as metals and non-metals; and I can use patterns to classify an element as a metal or non-metal.
	I can use patterns to predict properties of elements; and I can compare patterns in properties in the groups and periods of the Periodic Table.
	I can interpret data to describe patterns in properties of the Group I elements; and I can use patterns to predict properties of Group I elements.
	I can use patterns to predict properties of Group 7 elements; and I can describe displacement reactions.
	I can describe the physical and chemical properties of the Group 0 elements; and I can use patterns to predict properties of Group 0 elements.
Separation Techniques	I can describe particle arrangements in mixtures; and I can explain how to identify pure substances.
	I can describe solutions using key words; and I can use the particle model to explain dissolving.
	I can explain what a saturated solution is; and I can explain the meaning of solubility.
	I can explain how filtration works; and I can describe how to filter a mixture.
	I can explain how to use evaporation to separate mixtures; and I can explain how distillation works.

Separation Techniques	I can explain how chromatography separates mixtures; and I can analyse chromatograms to identify substances in mixtures.
Acids and Metals	I can compare the reactions of different metals with dilute acids; and I can explain the test for hydrogen gas.
	I can compare the reactions of different metals with oxygen; and I can use symbols in balanced formula equations.
	I can compare the reactions of metals with water; and I can use the reactivity series to predict reactions.
	I can predict pairs of substances that react in displacement reactions; and I can use the reactivity series to explain displacement reactions.
	I can use the reactivity series to decide which metals can be extracted from their ores by heating with carbon; and I can calculate the amounts of metals in ores.
	I can describe ceramic properties; and I can explain why the properties of ceramics make them suitable for their uses.
	I can describe polymer properties; and I can explain how polymer properties make them suitable for their uses.
Earth and Atmosphere	I can compare layers of the Earth; and I can describe the composition of the atmosphere.
	I can explain two properties of sedimentary rocks; and I can explain how sedimentary rocks are made.
	I can compare the ways that igneous and metamorphic rocks form; and I can explain how igneous and metamorphic rocks form.
	I can use the rock cycle to explain how the material in rocks is recycled.
	I can explain why the concentration of carbon dioxide in the atmosphere did not change for many years; and I can use the carbon cycle to identify stores of carbon.
	I can explain why global warming happens; and I can explain some impacts of global warming.
	I can explain how aluminium is recycled; and I can analyse the advantages and disadvantages of recycling.
Physics	
Electricity and Magnetism	I can explain how objects can become charged; and I can describe how charged objects interact; and I can describe what is meant by an electric field.
	I can describe what is meant by current; and I can describe how to measure current.

Electricity and Magnetism	I can describe what is meant by potential difference; and I can describe how to measure potential difference; and I can describe what is meant by the rating of a battery or bulb.
	I can describe the difference between series and parallel circuits; and I can describe how current and potential difference vary in series and parallel circuits.
	I can describe what is meant by resistance; and I can calculate the resistance of a component and of a circuit; and I can describe the difference between conductors and insulators in terms of resistance.
	I can describe how magnets interact; and I can describe how to represent magnetic fields; and I can describe the Earth's magnetic field.
	I can describe how to make an electromagnet; and I can describe how to change the strength of an electromagnet.
	I can describe some uses of an electromagnet; and I can describe how a simple motor works.
Energy Resources, Calculations and Transfers	I can compare the energy values of foods and fuels; and I can compare the energy in foods and fuels with the energy needed for different activities.
	I can describe energy before and after a change; and I can explain what brings about changes in energy.
	I can state the difference between energy and temperature; and I can describe what happens when you heat up solids, liquids and gases; and I can explain what is meant by equilibrium.
	I can describe how energy is transferred by particles in conduction and convection; and I can describe how an insulator can reduce energy transfer.
	I can describe some sources of infrared radiation; and I can explain how energy is transferred by radiation.
	I can describe the difference between a renewable and a non-renewable energy resource; and I can describe how electricity is generated in a power station.
	I can explain the difference between energy and power; and I can describe the link between power, fuel use, and the cost of using domestic appliances.
Motion and Pressure	I can calculate work done; and I can apply the conservation of energy to simple machines.
	I can calculate speed; and I can describe relative motion.
	I can interpret distance-time graphs; and I can calculate speed using a distance-time graph.
	I can describe the factors that affect gas pressure; and I can describe how atmospheric pressure changes with height.

Motion and Pressure

I can describe how liquid pressure changes with depth; and I can explain why some things float and some things sink.

I can calculate pressure; and I can apply ideas of pressure to different situations.

I can describe what is meant by a moment; and I can calculate the moment of a force.