

Step	Biology	Chemistry	Physics	Working Scientifically
9	<p>Gas exchange: - Interpret data and evaluate impact of effects of exercise, asthma and smoking on the system</p> <p>Inheritance: - Discuss the roles of Watson, Crick, Franklin and Wilkins in discovering DNA's structure</p> <p>Ecosystems: - Evaluate impact of humans on other organisms, with reference to accumulation of toxic materials</p> <p>Reproduction: - Make links between menstrual cycle, fertilisation and fertility</p>	<p>Atoms, elements compounds:</p> <p>Chemical reactions: - Represent chemical reactions using balanced symbol equations</p> <p>Materials:</p> <p>Energetics:</p> <p>Pure and impure substances: - Suggest how the rate of diffusion may be affected</p> <p>The Earth and the atmosphere: - Link the formation of rocks together to describe and explain the rock cycle in detail</p> <p>The particulate nature of matter:</p> <p>The Periodic Table: - Link group number and electron structure to explain the patterns of reactivity for Group 1 and Group 7 in the Periodic Table</p>	<p>Energy: - Justify suggestions about suitability of energy resources. - Suggest how convection, conduction and radiation may be changed - Suggest why thermal insulators work.</p> <p>Motion and forces: - Apply Hooke's Law to force meters. - Apply knowledge to explain the work done and changes of energy on deformation.</p> <p>Waves: - Explain refraction with reference to particles and the speed of light. Link the equation for speed, to the application of sound waves.</p> <p>Electricity and magnetism: - Link electric current to the structure of atoms. - Explain why the geographical north pole of the Earth is actually a magnetic south pole. - Explain how electrostatic force attraction by the induction of charge</p> <p>The particulate nature of matter: - Apply knowledge of physical changes and particles in explaining Brownian motion</p>	<p>Analysis and Evaluation: - Evaluate the reliability of methods in detail. - Suggest further questions that may arise from results of investigations and data analysis and evaluation. - can use data to support or refute an argument or stated position</p> <p>Experimental Skills and Investigation: - suggest detailed improvements to methods where reliability may be a concern. - can explain and use the terms accuracy, precision, repeatability, reproducibility, range, interval and bias correctly and in any context</p>
8	<p>Cells: - Suggest what affects rate of diffusion</p> <p>Respiration: - Evaluate implication for organisms of both based on reactants and products</p> <p>Gas exchange: - Explain how ventilation occurs with reference to pressure changes and lung volume</p> <p>Inheritance: - Apply knowledge of genetics to explain the role of gene banks</p> <p>Nutrition: - Calculate energy requirements of a healthy diet</p> <p>Photosynthesis: - Link importance of photosynthesis to atmospheric gases</p> <p>Ecosystems: - Discuss importance of insect pollination to human food security</p> <p>Reproduction: - Evaluate infertility treatments</p> <p>Musculoskeletal: - Suggest how artificial parts may affect an individual</p>	<p>Atoms, elements compounds: - Explain why mass is conserved during changes of state and chemical reactions</p> <p>Chemical reactions: - Explain how collisions are random and must be successful in order for a reaction to occur</p> <p>Materials: - Discuss and suggest methods that may be used to extract metals more reactive than carbon</p> <p>Energetics:</p> <p>Pure and impure substances: - Suggest some applications for making substances impure</p> <p>The Earth and the atmosphere: - Discuss the efficacy of recycling</p> <p>The particulate nature of matter:</p> <p>The Periodic Table: - Explain how metals and non-metals react with water using symbol equations, recognising the patterns and chemical forms which result in the solution being either acidic or alkaline</p>	<p>Energy: - Use scientific principles to suggest suitability of energy resources. Evaluate energy efficiency. - Discuss how all materials have a store of energy inside them. - Interpret block and Sankey diagrams.</p> <p>Motion and forces: - Calculate resultant moments. Calculate extension. - Interpret resultant forces to predict motion.</p> <p>Waves: - Explain how we see different colours in different coloured light. - Explain dispersion with reference to wave speed. - Explain why sound is a longitudinal wave, with reference to the direction of vibrations and energy.</p> <p>Electricity and magnetism: - Explain the difference and reason for electrical current and electron flow. - Suggest applications for materials of higher or lower resistance. - Explain attraction and repulsion in terms of the direction of field lines. - Describe rogue waves.</p> <p>Pressure In Fluids: - Use calculations of density to predict whether an object will float or sink.</p> <p>Space Physics: - Link knowledge to light waves to explain how light and heat energy travels to Earth from the Sun. - Apply knowledge of the seasons in the northern hemisphere to explain why the southern hemisphere experiences seasons differently</p>	<p>Analysis and Evaluation: - can present reasoned explanations, including explaining data in relation to predictions and hypotheses - can evaluate data, with reference to potential sources of random and systematic error. Evaluate the reliability of methods in detail.</p> <p>Experimental Skills and Investigation: - Make more complex and quantitative predictions using scientific knowledge and understanding</p> <p>Scientific Attitudes: - Evaluate risks and hazards to plan a safe scientific investigation.</p>

7	<p>Gas exchange: - Link adaptations of the human gas exchange system to their functions</p> <p>Respiration: - Compare/contrast aerobic and anaerobic respiration</p> <p>Health: - Evaluate effects of recreational drugs</p> <p>Inheritance: - Explain how variation and environmental pressures lead to evolution</p> <p>Nutrition: - Discuss benefits of gut bacteria, and link adaptations and function of digestive organs</p> <p>Photosynthesis: - Explain leaf adaptations</p> <p>Ecosystems: - Explain how changes in numbers of one organism affect another, referencing competition and predation</p> <p>Reproduction: - Discuss impact of maternal lifestyle on the foetus</p>	<p>Atoms, elements compounds: Chemical reactions: - Explain the conditions and uses of neutralisation, combustion, thermal decomposition, oxidation, displacement and the reaction of metals and acids, as examples of chemical reactions</p> <p>Materials: - Explain how metals can be obtained from metal oxides using carbon, when given the reactivity series</p> <p>Energetics: - Explain changes of state with reference to the amounts of energy of particles and whether a chemical reaction is exothermic or endothermic</p> <p>Pure and impure substances: - Identify pure and impure substances from data. Describe dissolving, with reference to particles</p> <p>The Earth and the atmosphere: - Explain the factors that may affect the appearance and properties of these rocks</p> <p>The particulate nature of matter: - Explain how pressure in gases may change</p> <p>The Periodic Table: - Explain why Mendeleev made the changes he did when developing the modern Periodic Table</p>	<p>Energy: - Calculate electrical power and energy transferred - Explain expansion in terms of particles</p> <p>Motion and forces: - Interpret distance-time graphs to calculate speed - Calculate moments</p> <p>Waves: - Compare light waves and waves in matter - Compare eyes and cameras. - Describe how sound waves to transfer information if converted to electrical signals. - Explain how colour blindness occurs, with reference to rod and cones</p> <p>Electricity and magnetism: - Calculate quantities by rearranging equations. - Discuss resistance in terms of conductors and insulators. Link conduction and insulation with atomic structure. - Describe how magnetic induction and motors. - Discuss applications of static electricity</p> <p>Pressure In Fluids: - Discuss applications of changing pressure</p> <p>Space Physics: - Explain how the different seasons occur with reference to the tilt of the Earth and proximity to the Sun. - Explain the difference between a calendar and a lunar month. - Explain light years</p> <p>Particulate nature of matter: - Compare solids, liquids and gases with reference to density difference</p>	<p>Analysis and Evaluation: - Write reasoned explanations of the conclusion based on the experimental data - can identify further questions arising from the results of an investigation</p> <p>Experimental Skills and Investigation: - Can explain the importance of sampling techniques and control variables - Can accurately make and record observations and measurements using rounding and decimal points</p>
6	<p>Cells: - Explain the adaptations of plant and animal cells, describe diffusion and the function of organelles</p> <p>Respiration: - Describe applications of respiration, such as fermentation and write word equations for both types</p> <p>Gas exchange: - Explain adaptations of structures in human gas exchange system</p> <p>Health: - Explain effects of recreational drug and substance misuse</p> <p>Inheritance: - Describe the roles of DNA, genes and chromosomes in heredity</p> <p>Nutrition: - Explain the role of digestive enzymes and how plants gain their nutrition</p> <p>Photosynthesis: - Explain why most life depends on photosynthesis</p> <p>Reproduction: - Quantitatively investigate seed dispersal mechanisms</p> <p>Musculoskeletal:</p>	<p>Atoms, elements compounds: - Represent compounds using chemical formulae</p> <p>Chemical reactions: - Describe factors that affect reaction rate with reference to particles and collisions and represent chemical reactions using formulae and symbol equations</p> <p>Materials: - Explain the differences in properties of different materials with reference to their structure and link uses to their properties</p> <p>Energetics: - Explain changes of states with reference to energy changes</p> <p>Pure and impure substances: - Explain how simple techniques for separating mixtures work</p> <p>The Earth and the atmosphere: - Suggest methods to conserve resources reduce the level of carbon dioxide in the atmosphere</p> <p>The particulate nature of matter: - Describe gas pressure with reference to particles</p> <p>The Periodic Table: - Explain how metals and non-metals react with water using word equations and explain some of</p>	<p>Energy: - Compare energy resources and efficiency. Calculate cost of electricity - Explain radiation in terms of waves and convection, in terms of particles</p> <p>Motion and forces: - Interpret distance-time graphs - Calculate resultant force - Explain how simple machines multiply force - Explain effects of opposite moments - Discuss applications of friction</p> <p>Waves: - Describe how pinhole cameras, eyes and convex lenses work - Describe colours of light in terms of frequency - Explain that light as a transverse EM wave - Describe the superposition - Explain how sound travels with reference to particles</p> <p>Electricity and magnetism: - Describe how a bar magnet inside an electromagnetic field moves - Find the shape of a magnetic field - Explain static electricity in terms of movement of electrons</p> <p>Pressure In Fluids: - Explain how pressure in liquids results in upthrust, allowing some objects to float - Explain the effects of pressure in terms of particles</p> <p>Space Physics: - Explain that our Sun is a star, and that there are other stars and solar systems in our galaxy and other galaxies in the Universe - Calculate weight</p> <p>Particulate nature of matter:</p>	<p>Experimental Skills and Investigation: - Select and apply appropriate sampling techniques - can evaluate data showing awareness of potential sources of random and systematic error</p> <p>Measurement: - Explain the importance of SI units</p> <p>Scientific Attitudes: - Describe how to improve accuracy, precision, repeatability, reproducibility and objectivity - can recognise anomalous results in data. - can calculate mean data while recognising the need to exclude anomalous results from the calculations</p>

6	<ul style="list-style-type: none"> - Explain how antagonistic muscle pairs work 	<p>the properties of metals and non-metals with reference to their structure</p>	<ul style="list-style-type: none"> - Explain the effect of temperature on the motion and spacing of particles 	
5	<p>Cells:</p> <ul style="list-style-type: none"> - Identify adaptations of unicellular organisms, compare animal and plant cells <p>Respiration:</p> <ul style="list-style-type: none"> - State the difference between aerobic and anaerobic, in terms of oxygen requirements and reactants and products <p>Gas exchange:</p> <ul style="list-style-type: none"> - Describe the impact of exercise, asthma and smoking on the system, and the role of stomata in leaves <p>Inheritance:</p> <ul style="list-style-type: none"> - Explain how variation can be continuous or discontinuous and how competition can lead to extinction <p>Nutrition:</p> <ul style="list-style-type: none"> - Explain the consequences of unbalanced diet <p>Photosynthesis:</p> <ul style="list-style-type: none"> - Describe leaf adaptations including the role of stomata, and state the word equation for photosynthesis <p>Ecosystems:</p> <ul style="list-style-type: none"> - Explain how organisms are adapted to their environment, and construct and interpret food webs <p>Reproduction:</p> <ul style="list-style-type: none"> - Describe stages of menstrual cycle and explain role of gametes in fertilisation <p>Musculoskeletal:</p> <ul style="list-style-type: none"> - Explain how parts of the system work together 	<p>Atoms, elements compounds:</p> <ul style="list-style-type: none"> - Explain the differences between atoms, elements and compounds <p>Chemical reactions:</p> <ul style="list-style-type: none"> - Describe neutralisation, combustion, thermal decomposition, oxidation, displacement and the reaction of metals and acids as examples of chemical reactions. Represent chemical reactions using word equations <p>Materials:</p> <ul style="list-style-type: none"> - Describe simple displacement reactions when given the order of metals and carbon in the reactivity series <p>Energetics:</p> <ul style="list-style-type: none"> - Describe changes of states with reference to energy changes <p>Pure and impure substances:</p> <ul style="list-style-type: none"> - Describe how to separate mixtures and describe how impurities may affect boiling and melting points of impure substances <p>The Earth and the atmosphere:</p> <ul style="list-style-type: none"> - Describe the carbon cycle and the impact of human activities on the carbon cycle - Describe the rock cycle and how different types of rock are formed <p>The particulate nature of matter:</p> <ul style="list-style-type: none"> - Explain the properties of the three states of matter with reference to the particle model <p>The Periodic Table</p> <ul style="list-style-type: none"> - Describe how metal oxides and non-metal oxides react with water - Describe the changes that Mendeleev made when he developed the modern Periodic Table 	<p>Energy:</p> <ul style="list-style-type: none"> - Calculate and compare energy values of food - Explain how almost all energy comes from the Sun. Calculate energy efficiency - Explain conduction in terms of particles, and convection, radiation <p>Motion and forces:</p> <ul style="list-style-type: none"> - Calculate average speed - Explain when a force is balanced or unbalanced - Describe levers - Explain ways to reduce or increase friction and air or water resistance <p>Waves:</p> <ul style="list-style-type: none"> - Describe how light behaves in relation to different materials, and how to make secondary colours of light - Describe transverse waves, with reference to oscillations and energy - Describe sonar, ultrasound and echolocation <p>Electricity and magnetism:</p> <ul style="list-style-type: none"> - Describe p.d. in a parallel circuit - Calculate current or resistance - Describe temporary and permanent magnets, and strength and distance of field lines - Describe how to make an electromagnet and increase its strength <p>Pressure In Fluids:</p> <ul style="list-style-type: none"> - Describe how floating or sinking is dependent on density - Explain some applications of changing pressure <p>Space:</p> <ul style="list-style-type: none"> - Describe how the seasons are caused - Describe factors affecting the size of gravity - Explain the existence of a leap year <p>Static electricity:</p> <ul style="list-style-type: none"> - Describe electrostatic forces as affecting objects inside the electric field of a charged object - Explain why objects attract or repel <p>The Particulate Nature Of Matter:</p> <ul style="list-style-type: none"> - Use the particle model to explain states and state changes, including: the arrangement of particles, shape and density and diffusion - Explain physical changes in terms of conservation of material, mass and reversibility 	<p>Analysis and Evaluation:</p> <ul style="list-style-type: none"> - Explain random and systematic error. - Interpret observations and data to identify more complex patterns - can comment on the reliability of methods <p>Experimental Skills and Investigation:</p> <ul style="list-style-type: none"> - Explain the importance of sampling techniques and control variables - Accurately make and record observations and measurements using rounding and decimal points <p>Measurement:</p> <ul style="list-style-type: none"> - Use simple equations to calculate new results from experimental data (for example energy efficiency, or work done) - can work out appropriate axes and scales for graphs - can draw best-fit lines for appropriate data. <p>Scientific Attitudes:</p> <ul style="list-style-type: none"> - knows that scientific theories develop as earlier explanations are modified to take into account new evidence
4	<p>Cells:</p> <ul style="list-style-type: none"> - State that diffusion moves substances in/out of cells and describe organisation of multicellular organisms <p>Respiration:</p> <ul style="list-style-type: none"> - State that respiration releases energy from food 	<p>Atoms, elements compounds:</p> <ul style="list-style-type: none"> - State that mass is conserved during changes of state and chemical reactions <p>Chemical reactions:</p> <ul style="list-style-type: none"> - State that during chemical reactions atoms are rearranged in order for reactants to become products and name some ways to speed up chemical reactions 	<p>Energy:</p> <ul style="list-style-type: none"> - Describe different energy resources - Explain the effect of a higher power rating on cost, and how to reduce energy waste - Describe conduction, convection, radiation and expansion <p>Motion and forces:</p> <ul style="list-style-type: none"> - Explain what affects an object's speed - Describe balanced and resultant forces, moments, the effects of air and water resistance, and Hooke's Law 	<p>Analysis and Evaluation:</p> <ul style="list-style-type: none"> - Describe random and systematic error - Present experimental data using a scatter graph <p>Experimental Skills and Investigation:</p> <ul style="list-style-type: none"> - Identify variables (independent, dependent and control variables) in an investigation

4	<p>Gas exchange: - Describe what happens during breathing</p> <p>Health: - Describe effects of recreational drugs on behaviour, health and life</p> <p>Inheritance: - Describe how variation is caused and what a gene bank is</p> <p>Nutrition: - Describe how digestion happens</p> <p>Photosynthesis: - List reactants & products</p> <p>Ecosystems: - Describe how organisms can be affected by their environment</p> <p>Reproduction: - Describe plant reproduction and methods of seed dispersal</p> <p>Musculoskeletal: - Explain why some muscles need to be stronger than others, and how to measure forces from muscles</p>	<p>Materials: - Describe the reactivity series</p> <p>Energetics: - Describe that during chemical reactions, surroundings may increase or decrease in temperature</p> <p>Pure and impure substances: - Select appropriate simple techniques for separating given mixtures - Describe diffusion in terms of the particle model</p> <p>The Earth and the atmosphere: - Describe the composition and structure of the atmosphere and describe ways that human activities impact on the climate</p> <p>The particulate nature of matter: - Describe the properties of the three states of matter with reference to the particle model</p> <p>The Periodic Table: - Describe that elements with similar physical and chemical properties are grouped together - Describe the patterns of reactivity for Group 1 and Group 7 - Describe how the properties of metals and non-metals make them suitable for different uses</p>	<p>Waves: - Describe absorption, dispersion, reflection, refraction and how we see colours - Draw ray diagrams - Recognise superposition - Describe the reflection of an observed wave in water - Describe echoes and applications of absorbing sound. Label compressions and rarefactions</p> <p>Electricity and magnetism: - Describe current in parallel circuits - Describe how to connect a voltmeter - Describe the effects of increased resistance - Identify the direction of current flow - Show the direction of the field lines - Describe Earth and compasses as examples of magnets</p> <p>Pressure In Fluids: - Calculate pressure and density</p> <p>Space Physics: - Describe celestial bodies in order of size. Describe and calculate weight</p>	<p>Measurement: - Conduct basic calculations on data such as mode, median, mean</p> <p>Scientific Attitudes: - Define accuracy, precision, repeatability, reproducibility and objectivity - can recognise some potential sources of error</p>
3	<p>Cells: - Identify parts of cells from a diagram; draw cells viewed by light microscope</p> <p>Respiration: - Name the two types of respiration (aerobic and anaerobic)</p> <p>Gas exchange: - Label a diagram of the humans gas exchange system</p> <p>Health: - List effects of recreational drugs</p> <p>Inheritance: - Simply describe heredity; recognise that variation allows some individuals to compete better</p>	<p>Atoms, elements compounds: - List examples of atoms, elements and compounds and label the subatomic particles of a simple atomic model</p> <p>Chemical reactions: - Describe the difference between chemical and physical changes and can simply describe different types of chemical reaction - Describe how to use Universal indicator to find the strength of an acid or an alkali</p> <p>Materials: - Describe some properties of different materials eg: ceramics, polymers and composites</p> <p>Energetics: - State that during chemical reactions, energy may be released or absorbed</p>	<p>Energy: - Describe what a higher power rating means - Describe situations where energy is transferred, wasted and dissipated - Recall forms of potential energy - Describe applications of thermal insulators</p> <p>Motion and forces: - Describe changes in relative motion - Describe the effects of forces and friction. - Use force arrow - Identify if a force is contact or non-contact</p> <p>Waves: - Name some types of waves. State the law of reflection - Give some examples of when light is absorbed or reflected - State the functions of parts of the human eye - Recognise a longitudinal wave, frequency and auditory range</p> <p>Electricity and magnetism:</p>	<p>Analysis and Evaluation: - Present data using a bar graph - can identify simple patterns or trends from data presented in graphs</p> <p>Experimental Skills and Investigation: - Describe safety precautions and sampling techniques - Follow instructions to use appropriate techniques, apparatus and materials to conduct scientific investigations</p> <p>Measurement: - Accurately name some chemical products when given the reactants</p> <p>Scientific Attitudes: - Describe some safety precautions during scientific experiments and carry out a simple risk assessment</p>

	<p>Nutrition: - Describe role of food groups and the function of digestive organs</p> <p>Photosynthesis: - State that plants make glucose in leaves by photosynthesis</p> <p>Ecosystems: - Make and interpret simple food chains</p> <p>Reproduction: - Describe stages of pregnancy and birth in animals</p> <p>Musculoskeletal: - Describe functions of system parts</p>	<p>Pure and impure substances: - Simply describe how particles may move through a fluid by diffusion</p> <p>The Earth and the atmosphere: - Name the main elements in the atmosphere and Earth, including carbon based compounds - describe that the Earth's resources are limited and identify the parts which make up the structure of the Earth</p> <p>The particulate nature of matter: - Describe how changes of states may occur</p> <p>The Periodic Table: - State that the modern Periodic Table was developed by Mendeleev and state that elements in the same group of the Periodic Table will have similar patterns in reactions</p>	<p>- State the effect of a higher p.d. on a bulb and that p.d. in series. Describe electrical current and how to connect an ammeter. Describe resistance and 'direct current'</p> <p>Space Physics: - Describe the solar system as the planets, asteroids and comets orbiting the Sun</p>	
2	<p>Cells: - List the main parts of a cell, and name some tissues and organs</p> <p>Gas exchange: - Name some tissues involved</p> <p>Inheritance: - State that genetic information is inherited</p> <p>Nutrition: - Simply describe the function of digestive organs</p> <p>Photosynthesis: - State that most life depends on photosynthesis</p> <p>Ecosystems: - Describe how numbers of one organism can affect another</p> <p>Reproduction: - Simply describe functions of organs in the human and plant reproductive system</p> <p>Musculoskeletal: - Identify system parts</p>	<p>Atoms, elements compounds: - Can recognise an atomic model can represent elements using chemical symbols</p> <p>Chemical reactions: - State that during chemical reactions reactants become products</p> <p>Materials: - State that some materials (particularly metals) are more reactive than others</p> <p>Energetics: - State that during changes of state, there are energy changes</p> <p>Pure and impure substances: - Describe what a pure substance and a mixture is and identify simple techniques for separating mixtures</p> <p>The Earth and the atmosphere: - List human activities that impact on the climate - List the parts which make up the structure of the Earth and name the three different types of rocks - Name some resources that humans use from the Earth</p> <p>The particulate nature of matter: - Describe the properties of the three states and represent with particle diagrams</p>	<p>Energy: - List energy resources and stores. Recognise that energy is conserved or transferred, and that heat is transferred by convection, conduction and radiation and insulators</p> <p>Motion and forces: - Describe simple changes in motion. List some forces and state what a moment is</p> <p>Waves: - State what waves can travel through - Recognise reflection, refraction, absorption, the light spectrum and what convex lenses do - Identify parts of the eye - State that sound waves are longitudinal</p> <p>Electricity and magnetism: - State what p.d. does, and that current in a series circuit does not change. Identify series and parallel circuits - Name component symbols - List uses of electromagnets and recognise how they work</p> <p>Pressure In Fluids: - Recognise the effect of changing pressure on an object, and when pressure increases or decreases</p> <p>Space Physics: - Identify what gravity does. State that the Earth is tilted on its axis and state what a days, and years are caused by</p>	<p>Analysis and Evaluation: - Perform simple calculations - Identify simple patterns and trends in data - Present observations in a simple table and graphs where axes and scales are provided - State simple conclusions</p> <p>Experimental Skills and Investigation: - Conduct experiments to test predictions - Identify some hazards. Make and record simple observations in a table - Make predictions using scientific language and understanding</p> <p>Measurement: - Correctly use some SI units</p>

		<p>The Periodic Table:</p> <ul style="list-style-type: none"> - List the properties of metals and non-metals and identify where metals, non-metals, periods and groups can be found on the Periodic Table 		
1	<p>Cells:</p> <ul style="list-style-type: none"> - State what cells are; name equipment used to view cells <p>Gas exchange:</p> <ul style="list-style-type: none"> - Name organs involved <p>Inheritance:</p> <ul style="list-style-type: none"> - State that there is variation within and between species <p>Nutrition:</p> <ul style="list-style-type: none"> - List the contents of a balanced diet and name digestive organs <p>Photosynthesis:</p> <ul style="list-style-type: none"> - State that plants gain nutrients and water from soil via roots <p>Ecosystems:</p> <ul style="list-style-type: none"> - Recognise that all organisms in an ecosystem may affect each other; are affected by their environment <p>Reproduction:</p> <ul style="list-style-type: none"> - Name organs of plant and human reproductive systems <p>Musculoskeletal:</p> <ul style="list-style-type: none"> - State that some muscles are stronger than others 	<p>Atoms, elements compounds:</p> <ul style="list-style-type: none"> - Can recognise that all matter is made of atoms <p>Chemical reactions:</p> <ul style="list-style-type: none"> - Recognise that different acids and alkalis have different strengths and indicators are used to show this <p>Materials:</p> <ul style="list-style-type: none"> - Recognise that different materials have different properties <p>Pure and impure substances:</p> <ul style="list-style-type: none"> - List some mixtures <p>The Earth and the atmosphere:</p> <ul style="list-style-type: none"> - Humans use the Earth as a source of resources and these are limited, and that there are different types of rock <p>The particulate nature of matter:</p> <ul style="list-style-type: none"> - Name the three states of matter and list the changes of state <p>The Periodic Table:</p> <ul style="list-style-type: none"> - All elements currently known may be found listed in the Periodic Table 	<p>Energy:</p> <ul style="list-style-type: none"> - Recognise what energy is and where it is stored, that appliances have power ratings (W, kW). Use a thermometer <p>Motion and Forces:</p> <ul style="list-style-type: none"> - State what speed is, name some forces and their effects <p>Waves:</p> <ul style="list-style-type: none"> - State that light moves at the speed of light; identify objects that form images. State how sound is produced, that it cannot travel through a vacuum <p>Electricity and electromagnetism:</p> <ul style="list-style-type: none"> - Recall that circuits must be complete; the units for current, resistance and potential difference; types of magnets; how poles behave; name the three magnetic materials <p>Space:</p> <ul style="list-style-type: none"> - State the length of a day, month and year, that gravity always pulls towards the centre of an object and list planets in and seasons in order 	<p>Experimental Skills and Investigation:</p> <ul style="list-style-type: none"> - Ask questions based on behaviour of the world - draw simple, correctly-labelled scientific diagrams. - follow instructions safely. <p>Measurement:</p> <ul style="list-style-type: none"> - Name some chemicals, and some SI units - take measurements using a range of scientific equipment, including repeat readings. <p>Scientific Attitudes:</p> <ul style="list-style-type: none"> - State some theories built on evidence