



Unit	Emerging	Developing	Secure	Excelling
B1 Health and Lifestyle	<ul style="list-style-type: none"> • Recognise what is meant by digestion 	<ul style="list-style-type: none"> • Identify and label a diagram of the digestive system and state some functions 	<ul style="list-style-type: none"> • Describe the structure and function of the main parts of the digestive system including the role of enzymes and bacteria 	<ul style="list-style-type: none"> • Explain how each part of the digestive system works in sequence, including adaptations in the small intestines for its function and names of digestive enzymes
	<ul style="list-style-type: none"> • Recognise the basic nutritional requirements of a healthy diet 	<ul style="list-style-type: none"> • Identify the reasons why each part of a healthy diet is required 	<ul style="list-style-type: none"> • Calculations of energy requirement in a healthy diet and describing the effects of imbalances in the diet 	<ul style="list-style-type: none"> • Outline the food tests for starch, lipids, protein and glucose
	<ul style="list-style-type: none"> • Recognise lifestyle choices that can be detrimental to health 	<ul style="list-style-type: none"> • State how some lifestyle choices have an effect human health and foetal development 	<ul style="list-style-type: none"> • Describe the effect of smoking, alcohol and drug use on human health and foetal development 	<ul style="list-style-type: none"> • Interpreting data linking drug use, alcohol and smoking to explain human health and foetal development



C1 SoM and Energetics	<ul style="list-style-type: none"> • Recognise that matter is made of particles and name the 3 states it exists in 	<ul style="list-style-type: none"> • Identify particles as atoms and molecules and state the properties of the 3 states of matter 	<ul style="list-style-type: none"> • Describe and explain the properties of matter in terms of the particle model 	<ul style="list-style-type: none"> • Outline how the particles behaviour changes in terms of energy and motion in different states of matter
	<ul style="list-style-type: none"> • Recognise how temperature affects matter 	<ul style="list-style-type: none"> • State the meaning of the terms melting, freezing, boiling and condensing 	<ul style="list-style-type: none"> • Describe and explain changes of state using the particle model discussing the energy changes 	<ul style="list-style-type: none"> • Explain why temperature does not change when state changes
	<ul style="list-style-type: none"> • Recognise how particles move when sprayed from perfume 	<ul style="list-style-type: none"> • State what is meant by Brownian motion and diffusion 	<ul style="list-style-type: none"> • Describe and define gas pressure using the particle model and understanding or Brownian motion 	<ul style="list-style-type: none"> • Explain the effect of temperature and volume on Gas pressure
	<ul style="list-style-type: none"> • Recognise that some reactions get colder and some reactions get hotter 	<ul style="list-style-type: none"> • Identify a reaction as endothermic or exothermic 	<ul style="list-style-type: none"> • Describe the characteristics of exothermic and endothermic changes 	<ul style="list-style-type: none"> • Explain endothermic and exothermic changes in terms of energy transfer to and from the surroundings.
P1 Energy	<ul style="list-style-type: none"> • Recognise different types of energy that change from one form to another while doing work. 	<ul style="list-style-type: none"> • Identify heating as work in terms of electric heaters and burning fuel 	<ul style="list-style-type: none"> • Describe and define work as energy transfer from one store to another, draw energy transfer diagrams for heating with a fuel and light bulbs 	<ul style="list-style-type: none"> • Outline energy transfers using diagrams that show transfers from one store to another as useful work and identify any wasted energy
	<ul style="list-style-type: none"> • Recognise how we see objects and state the 3 primary and 3 secondary colours of light 	<ul style="list-style-type: none"> • Identify light interacting with a boundary as either reflected, absorbed or refracted – use this model to explain how we see different colours 	<ul style="list-style-type: none"> • Draw simple diagrams to describe and explain how we see objects and colours 	<ul style="list-style-type: none"> • Draw ray diagrams to show and explain how mirrors and simple cameras work to produce an image



B2 Cells and Organisms	<ul style="list-style-type: none"> • Recognise different cells using a microscope 	<ul style="list-style-type: none"> • Identify different parts of cells and some of their functions linked to different types of cells 	<ul style="list-style-type: none"> • Describe and state the function of the cell wall, mitochondria, cytoplasm, nucleus, vacuole and chloroplasts and how plants, animals cells and unicellular organisms are structurally adapted. 	<ul style="list-style-type: none"> • Compare different types of cells recognising similarities and differences with explanations.
	<ul style="list-style-type: none"> • Recognise that cells link together to build complex organisms 	<ul style="list-style-type: none"> • State the hierarchical organisation of multicellular organisms from cells, tissues, organs and organ systems 	<ul style="list-style-type: none"> • Describe how the skeletal organ system works together using biomechanics 	<ul style="list-style-type: none"> • Explain how antagonistic muscle pairs work to move key joints
	<ul style="list-style-type: none"> • Recognise what is meant by diffusion 	<ul style="list-style-type: none"> • Identify diffusion in terms of the parts of the gas exchange system 	<ul style="list-style-type: none"> • Identify the structure and functions of the gas exchange system describing the mechanism of breathing 	<ul style="list-style-type: none"> • Identify and explain the role of pressure in the exchange of gasses and the adaptations of the stem that speed up diffusion.
C2 Substances	<ul style="list-style-type: none"> • Recognise the simple Dalton model of the atom 	<ul style="list-style-type: none"> • Identify atoms elements and compounds and their properties 	<ul style="list-style-type: none"> • Use chemical formula for atoms and simple compounds describe and explain the differences in properties 	<ul style="list-style-type: none"> • Link the behaviour of atoms within substances to explain why elements, but not lone atoms exhibit properties
	<ul style="list-style-type: none"> • Recognise the difference between a chemical reaction and a physical change 	<ul style="list-style-type: none"> • Identify the reactants and products in a reaction 	<ul style="list-style-type: none"> • Describe and explain conservation of mass in state changes and chemical reactions using the atomic model 	<ul style="list-style-type: none"> • From word and formula equations, predict and explain whether the mass within a reaction vessel will stay the same
	<ul style="list-style-type: none"> • Recognise what is meant by a mixture and a pure substance 	<ul style="list-style-type: none"> • State how mixtures can be made by dissolving and separated later. 	<ul style="list-style-type: none"> • Describe how to separate a mixture using, distillation, chromatography, filtration and evaporation 	<ul style="list-style-type: none"> • Explain why different separating techniques have to be used for different substances describing how they work.



P2 Electricity	<ul style="list-style-type: none"> • Recognise electricity as a transfer of energy through wires 	<ul style="list-style-type: none"> • State what current is using a model 	<ul style="list-style-type: none"> • Describe voltage using a model 	<ul style="list-style-type: none"> • Use a model to outline the effect of components on current and voltage
	<ul style="list-style-type: none"> • Recognise the necessity for a complete circuit 	<ul style="list-style-type: none"> • Draw simple circuit diagrams to include and identify bulbs, switches and cells 	<ul style="list-style-type: none"> • Use circuit diagram to describe and predict what will happen when a circuit is switched on e.g. which bulbs will light up and comparative brightness's etc. 	<ul style="list-style-type: none"> • Use circuit diagrams to make series and parallel circuits
	<ul style="list-style-type: none"> • Recognise how magnets cause both an attractive and a repulsive force 	<ul style="list-style-type: none"> • State what an electromagnet is 	<ul style="list-style-type: none"> • Describe factors that affect the strength of an electromagnet 	<ul style="list-style-type: none"> • Outline how to measure the strength of an electromagnet
B3 Reproduction	<ul style="list-style-type: none"> • Recognise some of the reproduction organs of humans 	<ul style="list-style-type: none"> • Label diagrams of the male and female reproductive organs identify some of the functions 	<ul style="list-style-type: none"> • Describe reproduction in humans with knowledge of the menstrual cycle, gametes, fertilisation, gestation and birth. 	<ul style="list-style-type: none"> • Outline in detail how each part of the reproductive system works and explain how it is adapted to do it with the role of some named hormones
	<ul style="list-style-type: none"> • Recognise some of the reproductive organs in plants 	<ul style="list-style-type: none"> • Label diagrams of a plants reproductive organs and state how it is adapted for wind or insect pollination 	<ul style="list-style-type: none"> • Describe reproduction in plants with knowledge of pollination, fertilisation, seed and fruit formation and seed dispersal 	<ul style="list-style-type: none"> • Explain the adaptations of plants linked to pollination method and seed dispersal method



C3 Fizzy bangy stuff	<ul style="list-style-type: none"> • Recognise some reactions as combustion, oxidation or thermal decomposition 	<ul style="list-style-type: none"> • Identify with chemical formula how atoms are rearranged in chemical reactions 	<ul style="list-style-type: none"> • Represent with formulae and equations combustion, oxidation and thermal decomposition reactions and describe how a catalyst will affect the reactions 	<ul style="list-style-type: none"> • Compare the different type of reactions and explain the role of catalysts in industry
	<ul style="list-style-type: none"> • Recognise some common Acids and Alkalis 	<ul style="list-style-type: none"> • State the pH colours and numbers for some strong and weak Acids and Alkalis and neutral solutions 	<ul style="list-style-type: none"> • Describe with word equations what happens in neutralisation reactions of acids with alkalis and acids with metals 	<ul style="list-style-type: none"> • Predict and explain the formulae for products of reactions between acids and metals or acids and bases
P3 Sound and Waves	<ul style="list-style-type: none"> • Recognise waves as a transfer of energy over a distance without wires 	<ul style="list-style-type: none"> • Identify examples of waves encountered in everyday experience 	<ul style="list-style-type: none"> • Describe waves using key scientific terms: amplitude; wavelength; and frequency 	<ul style="list-style-type: none"> • Outline the motion of oscillations compared to the direction of energy transfer in waves
	<ul style="list-style-type: none"> • Recognise the differences between sound and light waves 	<ul style="list-style-type: none"> • State how loud speakers work to produce sound waves 	<ul style="list-style-type: none"> • Describe how the key scientific terms link to physical properties of sound 	<ul style="list-style-type: none"> • Use the particle model to explain how the speed of sound waves is effected by the medium



Working Scientifically	<ul style="list-style-type: none"> • Recognise important variables in investigations, selecting the most suitable to investigate. 	<ul style="list-style-type: none"> • Use scientific knowledge and understanding to plan investigations and identify the independent, dependent and control variables. 	<ul style="list-style-type: none"> • Identify key variables in different and difficult situations and describe in the planning stage how to take control of some variables that cannot be controlled easily. 	<ul style="list-style-type: none"> • Use key scientific words and terms to explain choice of methods and procedures to investigate different kinds of scientific questions.
	<ul style="list-style-type: none"> • Repeat sets of observations or measurements selecting suitable ranges and intervals 	<ul style="list-style-type: none"> • Collect data by choosing a suitable range and using the right numbers and values for measuring and observing. 	<ul style="list-style-type: none"> • Make a risk assessment by acting and seeking advice from the right sources of information. 	<ul style="list-style-type: none"> • Choose and explain why the methods and procedures that are chosen will minimise error and allow precise and reliable data.
	<ul style="list-style-type: none"> • Write a straightforward conclusion from data found and explain the differences in repeats 	<ul style="list-style-type: none"> • Use scientific knowledge to identify why some data or observations have limitations or don't follow a regular pattern. • 	<ul style="list-style-type: none"> • Assess the strength of evidence, deciding whether it is sufficient to support a conclusion 	<ul style="list-style-type: none"> • Process data, including using multi-step calculations and compound measures, to identify complex relationships between variables.
	<ul style="list-style-type: none"> • Evaluate the effectiveness of chosen method and give practical ideas on how to improve the method 	<ul style="list-style-type: none"> • Make valid comments on the quality of the collected data 	<ul style="list-style-type: none"> • Suggest ways of changing the chosen method so that more reliable data can be collected. 	<ul style="list-style-type: none"> • Use detailed scientific knowledge to suggest ways of modifying the experimental procedures with reasons and suggest strategies that will take the investigation further than it originally was