By the end of KS3 biology, pupils will know:

- How to label the structures found in animal and plant cells.
- How to compare the structures in animal and plant cells and explain how they are adapted to their function.
- How the roles of the specialised cells- sperm, egg, muscle, ciliated cells and how they are adapted to their function.
- How to label the parts of the male and female reproductive system.
- How to describe each stage of the menstrual cycle.
- How to label the parts of a plant.
- How to interpret a food chain and food webs.
- How to describe the journey of food along the digestive system.
- How villi in the small intestine is adapted to it's function.
- How enzymes break down food in simple steps.
- How to label the parts of the breathing system
- How to label joints, ligaments, muscles and bone on a given diagram.
- How a cell carries out both aerobic and anaerobic respiration.
- How photosynthesis takes place in the chloroplast.
- How to label the structure of a leaf.
- How smoking, vaping and alcohol affects human behaviour and the effect on conception and pregnancy.
- How the body prevents microbes from entering
- How variation in a species and why it is important for the survival of a species, helping it to avoid extinction in an always changing environment.
- How eukaryotic and prokaryotic cells are similar and different.
- How cell transport systems are used to transport substances in both animal and plant cell
- How DNA can be found in eukaryotic cells.
- How cell transport methods can be used to transport substances in both animal and plant cells.
- How a plant uses glucose.
- How the body carried out metabolic reactions.
- How to stay safe in practical science
- How to make predictions and test them
- How to present data accurately
- How to identify patterns in data

	Cells & Systems	Plants and the Environment	Variation and Inheritance	Working Scientifically	Personal Development
Yr.9 Greater depth	Pupils will be able to arrange order of magnitude. Pupils will be able to describe what cell differentiation is. Pupils will be able to explain the process of therapeutic cloning. Pupils will be able to explain how surface area to volume ratio varies depending on the size of an organism. Pupils will be able to rearrange the IAM equation to find magnification or actual size of a cell. Pupils will be able to explain the factors that effect the rate of diffusion. Pupils will be able to calculate and compare surface area: volume ratios. Pupils will be able to explain how the small intestine and lungs in mammals, and roots and leaves in plants, are adapted for exchange of substances. Pupils will be able to describe and explain how an exchange surface is made more effective. Pupils will be able to apply knowledge of osmosis to unfamiliar situations and make predictions.	Pupils will be able to explain where the energy for the cell reactions comes from, and how proteins and fats are made. Pupils will be able to explain the gases released from a plant at different times of the day. Pupils will be able to explain the importance of fermentation in baking. Pupils will be able to calculate cardiac output. Pupils will be able to interpret graphs to explain what the compensation point means.	Pupils will be able to explain whether characteristics are inherited, environmental or both. Pupils will be able to explain how variation helps a particular species in a changing environment. Pupils will be able to explain how characteristics of a species are adapted to particular environmental conditions. Pupils will be able to explain use evidence to explain why a species has become extinct or changed over time. Pupils will be able to explain how a lack of biodiversity effects an ecosystem.	Pupils will be able to plot bar charts or line graphs to show discontinuous or continuous variation data. Pupils will be able to make a specimen slide safely, view a slide, draw accurate observations and calculate the magnification used. Pupils will be able to a microscope with graticule to measure cells and calculate their real size. Pupils will be able to explain graphs describing limiting factors and how these factors effect photosynthesis. Pupils will be able to interpret graphs to explain what the compensation point means.	
Yr.9 Expected	Pupils will be able to define the term eukaryotics and prokaryotic. Pupils will be able to describe the structure	Pupils will be able to recall the part of the cell where photosynthesis takes place.	Pupils will be able to recall the definition of variation (within a species).	Pupils will be able to identify hazards and risks and suggest appropriate ways to reduce the risks.	Pupils will be able to explain what stem cells are and how they can be used to treat serious health conditions.

	and function of organelles found in animals and plant cells. Pupils will be able to describe the structure of a bacterial cell. Pupils will be able to explain why a cell is specialised and give examples. Pupils will be able to describe the differences between the two types of stem cells and give their uses. Pupils will be able to describe the steps involved in the cell cycle (mitosis). Pupils will be able to compare the two types of microscopes in terms of resolution and magnification. Pupils will be able to define osmosis Pupils will be able to define diffusion. Pupils will be able to give examples of substances that diffuse into and out of cells. Pupils will be able to define active transport.	Pupils will be able to recall the word equation for photosynthesis. Pupils will be able to explain the factors that effect photosynthesis. Pupils will be able to recall the 5 uses of glucose (CROPS). Pupils will be able to recall the word equation for aerobic and anaerobic respiration in animal and plants. Pupils will be able to explain how breathing rate and heart rate increase with exercise. Pupils will be able to define and give examples of metabolic reactions.	Pupils will be able to recall the two causes of variation within a species. Pupils will be able to recall that variation in a species is important for the survival of a species, helping it to avoid extinction in an always changing environment. Pupils will be able to recall the definition of natural selection. Pupils will be able to recall the definition of biodiversity. Pupils will be able to recall where genetic material is found within a cell. Pupils will be able to recall what a chromosome is. Pupils will be able to recall the definition of a gamete.	Pupils will be able to identify independent, dependent and control variables and use these to plan and carry out a range of investigations to test a prediction, considering repeatability and reproducibility within their plan Pupils will be able to apply mathematical concepts to use and rearrange equations in order to calculate results, using appropriate SI units Pupils will be able to make and record observations and measurements and present data using appropriate methods including tables with repeat measurements. Pupils will be able to use basic data analysis to calculate means, plot graphs with line of best fit and use this data to draw conclusions.	
Yr.8 Greater depth	Pupils will be able to explain how organs and tissues involved in digestion are adapted for their role. Pupils will be able to describe in detail the events that take place in order to turn a meal into simple food molecules inside a cell. Pupils will be to critique claims for a food product or diet by analysing nutritional information. Pupils will be able to make deductions from medical symptoms showing problems with the digestive system. Pupils will be able to explain how parts of the gas exchange system are adapted to their function. Pupils will be able to use word equations to describe aerobic and anaerobic respiration. Pupils will be able to explain how specific activities involve aerobic or anaerobic respiration. Pupils will be able to suggest how organisms living in different conditions use respiration to get their energy.	Pupils will be able to explain the function of the stomata in a leaf. Pupils will be able to describe ways in which plants obtain resources for photosynthesis. Pupils will be able to explain why other organisms are dependent on photosynthesis. Pupils will be able to use a word equation to describe photosynthesis in plants and algae. Pupils will be able to explain how particular conditions could affect plant growth. Pupils will be able to explain the reasons for particular adaptations of leaves, roots and stems. Pupils will be able to compare the movement of carbon dioxide and oxygen through stomata at different times of day.		Pupils will be able to sketch a line graph to show how the rate of photosynthesis is affected by changing conditions, including limiting factors. Pupils will be able to calculate food requirements for a healthy diet, using information provided.	

	Pupils will be able to describe similarities and differences between aerobic and anaerobic respiration. Pupils will be able to link anaerobic respiration to bread and beer production Pupils will be able to explain how white blood cells fight off infection Pupils will be able to explain how vaccinations produce immunity Pupils will be able to explain how antibiotic resistance develops and why it is a problem.				
Yr.8 Expected	Pupils will be able to recall the components that make up a balanced diet. Pupils will be able to evaluate how different lifestyles Pupils will be able to recall issues related to unhealthy diets. Pupils will be able to label the parts of the digestive system. Pupils will be able to explain the structure and function of each part of the digestive system. Pupils will be able to describe the role of bacteria and enzymes in the digestive system. Pupils will be able to recall the parts of the skeletal system. Pupils will be able to describe the role of joints and muscles. Pupils will be able to recall the components of inhaled and exhaled air. Pupils will be able to recall the parts of the gas exchange system. Pupils will be able to define diffusion. Pupils will be able to define the process of respiration. Pupils will be able to recall the word equation for aerobic respiration. Pupils will be able to recall the products of anaerobic respiration. Pupils will be able to recall the word equation for anaerobic respiration.	Pupils will be able to recall where photosynthesis takes place in a plant. Pupils will be able to recall the function of the chloroplast. Pupils will be able to recall the products produced by photosynthesis Pupils will be able to recall the photosynthesis word equation. Pupils will be able to label the parts of a leaf. Pupils will be able to recall the minerals required by a plant for healthy growth.		Pupils will be able to make predictions using scientific knowledge and understanding Pupils will be able to select appropriate apparatus and techniques based on accuracy and precision for an investigation within the laboratory Pupils will be able to identify independent, dependent and control variables and use these to plan and carry out a range of investigations to test a prediction, considering repeatability and reproducibility within their plan. Pupils will be able to make and record observations and measurements and present data using appropriate methods including tables with repeat measurements Pupils will be able to identify hazards and risks and suggest appropriate ways to reduce the risks. Pupils will be able to select appropriate apparatus and techniques based on accuracy and precision for an investigation within the laboratory Pupils will be able to relate results to predictions and hypotheses, giving reasoned explanations, and identify further questions from their results.	Pupils will be able to explain the benefits of physical exercise. Pupils will be able to explain the effect of a high or low BMI on a person's health. Pupils will be able to explain the risks associated with an unhealthy lifestyle. Pupils will be able to describe the components of a balanced diet. Pupils will be able to recall the facts and science behind allergies, immunisation/vaccination. Pupils will be able to explain what antimicrobial resistance is. Pupils will be able to define and give examples of legal and illegal drugs. Pupils will be able to explain what drug addiction is. Pupils will be able to describe methods to compact addiction to drugs, vapes, smoking and alcohol. Pupils will be able to explain the effects of vapes, smoking and alcohol on the body. Pupils will be able to explain the effects of vapes, smoking and alcohol on the brain.

	Pupils will be able to explain what an antagonistic muscle is. Pupils will be able to state the 3 types of pathogens and give examples Pupils will be able to describe how communicable diseases can be spread, and how they cause illness. Pupils will be able to describe how disease can be prevented by the body and by medical treatments. Pupils will be able to identify uses of microbes in the real world				
Yr.7 Greater depth	Pupils will be able to explain the similarities and differences of plant and animal cells. Pupils will be able to explain how specialised cells are adapted to perform certain functions. Pupils will be able to calculate magnification. Pupils will be able to describe the process of diffusion and how gases move in and out of cells. Pupils will be able to explain why pregnancy is more or less likely at certain stages of the menstrual cycle. Pupils will be able to describe causes of low fertility in male and female reproductive systems. Pupils will be able to identify the Identify key events on a diagram of the menstrual cycle. Pupils will be able to make deductions about how contraception and fertility treatments work. Pupils will be able to explain the effect of cigarettes, alcohol or drugs on the developing foetus.	Pupils will be able to describe similarities and differences between the structures of wind pollinated and insect pollinated plants. Pupils will be able to suggest how plant breeders use knowledge of pollination to carry out selective breeding. Pupils will be able to develop an argument why a particular plant structure increases the likelihood of successful production of offspring. Pupils will be able to suggest what might happen when an unfamiliar species is introduced into a food web. Pupils will be able to develop an argument about how toxic substances can accumulate in human food. Pupils will be able to make a deduction based on data about what caused a change in the population of a species.		Pupils will be able to calculate magnification. Pupils will be able to make a specimen slide safely, view a slide, draw accurate observations and calculate the magnification used.	
Yr.7 Expected	Pupils will be able to label the parts of an animal cell and explain what the parts do. Pupils will be able to label parts of a plant cell and explain what the parts do.	Pupils will be able to recall that plants have adaptations to disperse seeds using wind, water or animals.		Make predictions using the available information. Identify patterns in graphical relationships. Work safely in experiments.	Pupils will be able to explain the effects of infertility and the menopause. Pupils will be able to explain how hygiene affects infections in both male and females.

	Pupils will be able to recall given specialised cells. Pupils will be able to recall the hierarchy of organisation in multicellular organisms. Pupils will be able to label the parts of a light microscope. Pupils will be able to define diffusion. Pupils will be able to explain the difference between unicellular and multicellular organisms. Pupils will be able to label the parts of the male reproductive system. Pupils will be able to label the parts of the female reproductive system. Pupils will be able to define puberty. Pupils will be able to define fertilisation and explain where it takes place. Pupils will be able to define the menstrual cycle. Pupils will be able to define gestation and birth.	Pupils will be able to identify parts of the flower and link their structure to their function. Pupils will be able to recall that plants reproduce sexually to produce seeds, which are formed following fertilisation in the ovary. Pupils will be able to recall that organisms in a food web (decomposers, producers and consumers) depend on each other for nutrients. So, a change in one population leads to changes in others. Pupils will be able to recall that the population of a species is affected by the number of its predators and prey, disease, pollution and competition between individuals for limited resources such as water and nutrients.		Explain observed phenomena using reasoning based on teaching. Present data using tables and graphs. Pupils will be able to make and record observations and measurements and present data using appropriate methods including tables with repeat measurements. Pupils will be able to interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions. Pupils can make and record observations. Pupils can select and use appropriate apparatus and sampling techniques for field and laboratory work.	Pupils will be able to explain what endometriosis is and its effect on fertility. Pupils will be able to explain what polycystic ovaries is and its effect on fertility. Pupils will be able to explain what IVF is and why people may decide to have this. Pupils will explain the effect of puberty on the body, feelings and brain development.

By the end of KS3 chemistry, pupils will know: ● Examples of solids, liquids and gases ● Naming, changes of state. ● Particle models of solid, liquids and gases ● How the particle model explains properties of different states of matter ● How diffusion occurs ● the difference between pure and impure materials ● How mixtures are separated by using filtration, chromatography and evaporation ● defining atoms, elements and compounds ● labelling the structure of an atom ● Working out number of subatomic particles for an element ● What exothermic and endothermic reactions are. ● knowing what combustion and oxidation reactions are ● How to carry out displacement reactions and to make accurate observations	● Know the difference between composite, ceramics and polymers ● Give uses and properties of composites, ceramics and polymers ● Know the composition of air ● Know and describe the layered structure of the earth ● Know the difference between sedimentary, igneous and metamorphic rocks. ● Be able to label a diagram of the atom ● work out protons, neutrons and electrons. ● Be able to predict properties of elements based on groups of elements ● Carry experiments to separate mixtures such as filtering and evaporation ● Evaluate models of atoms and the scientists that proposed the models ● Evaluate periodic table models and the scientists that proposed the them ● Define exothermic and endothermic reactions ● Draw energy profile diagrams for exothermic and endothermic reactions ● Know the factors that affect rate ● Carry out rate experiments safely and accurately ● How to stay safe in practical science ● How to make predictions and test them ● How to present data accurately ● How to identify patterns in data

	Particles and Matter	**Chemical Reactions**	**Earth and Atmosphere**	**Working Scientifically**

Yr.9 Greater depth	Pupils will be able to apply knowledge of atomic structure and the periodic table Can evaluate different atomic models. Can evaluate different periodic models suggested. Can calculate RAM from atomic abundance and mass of isotopes Can Explain why reactivity in group 1 increases down the group Can explain why reactivity decreases down group 7	Predict whether a chemical reaction will be exothermic or endothermic given data on bond strengths. Use energy data to select a reaction for a chemical hand warmer or cool pack.		Make well-reasoned predictions. Present data with care and attention to detail in graphs.
Yr.9 Expected	Pupils will explore the link between forces & energy. Pupils will be able to describe how forces cause rotation and how forces affect stretchy materials. Can work out the number of subatomic particles for a given element Can define isotope Can describe different atomic models Can identify elements of group 7 and group 1 Can describe different separation techniques such as filtration, distillation and chromatography Can identify groups 1, 7 and 0 on the periodic table	Use experimental observations to distinguish exothermic and endothermic reactions. Use a diagram of relative energy levels of particles to explain energy changes observed during a change of state.		Make predictions using the available information. Present data using tables and graphs.
Yr.8 Greater depth	Pupils will be able to link the properties of elements to groups. Pupils will be able to use knowledge of reactivity of group 1 elements and group 7 elements to make predictions about properties and reactions of these elements in water (alkali metals). Can describe the reactions of the alkali metals in water. Can Can compare element properties to compound properties made of those element e.g Sulphur, Iron and Iron sulphide Can work out number of atoms of elements and total number of atoms from complex formulas Can state what a group and identify elements in group 1 and group 7 Can recognise a period on the periodic table		Predict the method used for extracting metal based on its position in the reactivity series Suggest ways in which changes in behaviour and the use of alternative materials may limit the consumption of natural resources. Suggest ways in which waste products from industrial processes could be reduced. Use data to evaluate proposals for recycling materials. Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. Predict planetary conditions from descriptions of rocks on other planets. Describe similarities and differences between the rock cycle and everyday physical and chemical processes. Suggest how ceramics might be similar to some types of rock. Predict patterns in day length, the Sun's intensity or an object's shadow at different latitudes. Make deductions from observation data of planets, stars and galaxies. Compare explanations from different periods in history about the motion of objects and structure of the universe.	Identify and describe patterns in observed data. Plana and carry our fair test using clear identification of variables. Apply mathematical concepts and calculate results. Describe risks and how to reduce hazards.

			Evaluate the implications of a proposal to reduce carbon emissions. Evaluate claims that human activity is causing global warming or climate change. Compare the relative effects of human-produced and natural global warming	
Yr.8 Expected	Pupils learn the fundamentals of the periodic table and be able to start to use the periodic table to predict element properties Can name metals and non metals Can name elements and give symbols of elements Can state the number of protons electrons and neutrons of an elements Can define element Can define compound Can work out number of atoms from a simple formula Can label a diagram of the atom Can state what a group and identify elements in group 1 and group 7		Explain why a rock has a particular property based on how it was formed. Identify the causes of weathering and erosion and describe how they occur Construct a labelled diagram to identify the processes of the rock cycle. Explain why recycling of some materials is particularly important. Describe how Earth's resources are turned into useful materials or recycled. Justify the choice of extraction method for a metal, given data about reactivity. Suggest factors to take into account when deciding whether extraction of a metal is practical. Describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun. Explain why places on the Earth experience different daylight hours and amounts of sunlight during the year. Describe how space exploration and observations of stars are affected by the scale of the universe. Explain the choice of particular units for measuring distance. Use a diagram to show how carbon is recycled in the environment and through living things. Describe how human activities affect the carbon cycle. Describe how global warming can impact on climate and local weather patterns.	Identify patterns in observed data. Make accurate observations in investigations. Plan and carry out a fair test. Apply mathematical concepts and calculate results. Carry out safe experiments.
Yr.7 Greater depth	Pupils will be able to use the particle model: Can use the particle model to explain properties of different states of matter. e.g explaining why gases can be compressed and why liquids can flow. Can generate ideas about particles to link to Brownian motion. Explain what gas diffusion is and link to particle properties for gases and liquids	Pupils will use their knowledge of reactions to make predictions about chemical reactions. Deduce the physical or chemical changes a metal has undergone from its appearance. Justify the use of specific metals and non-metals for different applications, using data provided. Deduce a rule from data about which reactions will occur or not, based on the reactivity series Given the names of an acid and an alkali, work out the name of the salt produced when they react. Deduce the hazards of different alkalis and acids using data about their concentration and pH.		Make well-reasoned predictions. Describe patterns in graphical relationships. Describe risks and how to reduce hazards. Present data with care and attention to detail in graphs. Describe how to reduce sources of error.

		Estimate the pH of an acid based on information from reactions. Compare the pros and cons of fuels in terms of their products of combustion. Use known masses of reactants or products to calculate unknown masses of the remaining reactant or product. Devise a general rule for how a set of compounds reacts with oxygen or thermally decomposes. Balance a symbol equation. Use mass of reactant in equation to determine mass of product eg magnesium and oxygen.		
Yr.7 Expected	Pupils will gain fundamental knowledge about particles and matter Can name different solids, liquids and gases Can name the different states of matter Can draw the particle diagram for a solid, liquid and gases Can name the changes of state Can carry out experiment safely including lighting the Bunsen Burner Can use equipment to carry out simple separation techniques such as filtering and chromatography	Pupils will gain knowledge about the range and characteristics of chemical reaction. Describe an oxidation, displacement, or metal acid reaction with a word equation. Use particle diagrams to represent oxidation, displacement and metal-acid reactions Identify an unknown element from its physical and chemical properties. Place an unfamiliar metal into the reactivity series based on information about its reactions. Identify the best indicator to distinguish between solutions of different pH, using data provided. Use data and observations to determine the pH of a solution and explain what this shows. Explain how neutralisation reactions are used in a range of situations. Describe a method for how to make a neutral solution from an acid and alkali. Explain why a reaction is an example of combustion or thermal decomposition. Predict the products of the combustion or thermal decomposition of a given reactant and show the reaction as a word equation. Explain observations about mass in a chemical or physical change. Use particle diagrams to show what happens in a reaction.		Make predictions using the available information. Identify patterns in graphical relationships. Work safely in experiments. Explain observed phenomena using reasoning based on teaching. Present data using tables and graphs. Show an awareness of sources of error.

By the end of KS3 physics, pupils will know: ● Examples of forces ● How forces interact. ● How the interaction of forces affects motion ● How to represent motion on a graph ● How to interpret a graph to describe motion ● How to calculate speed, distance and time using an appropriate equation. ● How force links to energy ● The different energy stores	● How to describe the three different energy transfers by heating ● The names of different energy resources ● How we can use different energy resources on Earth ● The pros and cons of different energy resources on Earth ● How sound travels ● How sound interacts with different media ● How light travels ● How light interacts with different media

	• How energy can be transferred between energy stores • How to describe transfers of energy between energy stores. • How to measure energy transfers by heating		• How to stay safe in practical science • How to make predictions and test them • How to present data accurately • How to identify patterns in data	
	Force & motion	**Energy**	**Waves**	**Working Scientifically**
Yr.9 Greater depth	Pupils will be able to apply the law of conservation of energy to work done by a force. Can manipulate and use the equation for work done. Can manipulate and use the moments equation. Can describe how to find the centre of mass of an irregularly shaped 2D object. Can estimate and explain the location of mass in a 3D object. Can use primary data to find the link between force applied and the extension of an elastic object.	Pupils will be able to evaluate energy resources. Can compare different energy resources. Can evaluate the use of energy resources in different contexts.		Make well-reasoned predictions. Present data with care and attention to detail in graphs.
Yr.9 Expected	Pupils will explore the link between forces & energy. Pupils will be able to describe how forces cause rotation and how forces affect stretchy materials. Can state the equation that links: force, distance and work done, Can define the term centre of mass. Can find the centre of mass of a regularly shaped 2D object. Can define the term moment. Can state how a force affects the extension of a spring. Can calculate the extension of a spring after a force is applied.	Pupils will gain knowledge of the pros and cons of different energy resources. Can name the eleven different energy resources used to generate electricity. Can simply describe how the energy resources can be used to provide electricity. Can state pros and cons of each energy resource.		Make predictions using the available information. Present data using tables and graphs.
Yr.8 Greater depth	Pupils will be able to link features of an electromagnet to its properties. Pupils will be able to use knowledge of the arrangement and motion of particles in states of matter and during changes of state to properties of the material including density and pressure. Can describe how to change the strength of an electromagnet. Can describe how magnets and magnetic materials interact. Can describe how the motion and energy of particles change during changes of state. Can compare the density of different materials.	Pupils will be able to use series and parallel circuits to predict current and potential differences. Can measure electric current in a circuit. Can measure electric current in a circuit. Can calculate resistance. Can predict the current in a circuit. Can predict the potential difference in a circuit.	Pupils will gain knowledge of refraction to predict how lenses affect light. Can draw ray diagrams to show reflection. Can draw ray diagrams to show refraction. Can explain why objects appear a particular colour in white light. Can explain why objects appear a particular colour in coloured light or when using a filter..	Identify and describe patterns in observed data. Plana and carry our fair test using clear identification of variables. Apply mathematical concepts and calculate results. Describe risks and how to reduce hazards.
Yr.8 Expected	Pupils will be able to state how magnets and magnetic materials interact with each other. Pupils will be able to describe the arrangement and motion of particles in the three states of matter, and how this affects density	Pupils will gain fundamental knowledge about electricity (current, potential difference, resistance) and how they work together to produce energy changes. Can name / draw circuit symbols.	Pupils will be able to say how light interacts with matter and how light travels. Can label a ray diagram. Can measure angles with a protractor. Can state the law of reflection.	Identify patterns in observed data. Make accurate observations in investigations. Plan and carry out a fair test. Apply mathematical concepts and calculate results. Carry out safe experiments.

	Can draw magnetic fields. Can identify magnetic materials. Can state useful features of an electromagnet. Can define pressure. Can name the three states of matter. Can describe the motion of particles in solids, liquids and gases. Can state the equation that links: mass, volume and density.	Can define electric current. Can state how to measure electric current. Can measure electric current in a circuit. Can define potential difference. Can state how to measure potential difference. Can measure electric current in a circuit. Can state the equation that links: current, potential difference and resistance. Can state the difference between series and parallel circuits.	Can define the terms: transparent, translucent, and opaque. Can name the seven colours of the visible spectrum. Can state the three primary colours of light. Can state the secondary colours of light.	
Yr.7 Greater depth	Pupils will be able to use graphs to analyse motion and calculate speed. Can analyse motion using a distance-time graph. Can manipulate the equation linking speed, distance, and time.	Pupils will be able to explain how an object reaches thermal equilibrium. Pupils will be able to explain energy transfers. Can describe energy stores. Can describe energy transfers Can describe thermal conduction, convection and radiations. Can describe changes to energy stores. Can describe and explain how to increase or decrease the transfer of energy by heating.	Pupils will be able to link the properties of a wave to frequency, wavelength, and amplitude. Can compare types of waves. Can use the terms pitch and volume to describe sounds. Can interpret oscilloscope traces.	Make well-reasoned predictions. Describe patterns in graphical relationships. Describe risks and how to reduce hazards. Present data with care and attention to detail in graphs. Describe how to reduce sources of error.
Yr.7 Expected	Pupils will gain fundamental knowledge about forces and forces affect motion. Can name different forces. Can say what a force does. Can calculate the resultant force on an object. Can state the difference between mass and weight. Can state the equation that links: speed, distance, and time. Can calculate speed and weight. Can draw and interpret free body diagrams. Can interpret distance-time graphs.	Pupils will gain a fundamental understanding of energy stores and transfers Pupils will know how energy is transferred by heating Can name energy stores. Can name energy transfers. Can define thermal conduction, convection and radiations.. State the law of conservation of energy.	Pupils will know how sound travels and interacts with different media. Can name the types of waves. Can state how sound travels. Can state the human range of hearing. Can define ultrasound. Can state uses of ultrasound.	Make predictions using the available information. Identify patterns in graphical relationships. Work safely in experiments. Explain observed phenomena using reasoning based on teaching. Present data using tables and graphs. Show an awareness of sources of error.