Subject :		Science		Year Group:	10					
	Physics	Biology - Triple	Biology - Trilogy	Chemistry	Chemistry	Chemistry	Chemistry	Physics	Physics	Physics
Scheme title	**Forces - Part 2**	**Homeostasis and Response**	**Infection and Response**	**Chemical Analysis**	**Rate of chemical change**	**Using resources**	**Bonding, structure and properties of matter**	**Energy**	**Electricity**	**Magnetism**
Purpose of scheme	This unit looks at the mathematical relationships for moving objects and how to visualise motion using graphs	This unit builds on earlier Biology topics to look at how our bodies maintain a constant internal environment	This unit explains why we get ill and how our bodies fight infections with the help of modern medicine	This unit develops ideas from KS3 to show how chemistry can be used to identify unknown substances and separate mixtures	This unit explains the chemistry that controls how quickly a reaction happens using the idea of collision theory - building on ideas about particles and chemical reactions from previous years	This unit looks at the way humans use the resources available to them form the environments we live in. We learn how to manage the land, sea and air to harvest what we need, but also consider the environmental impact we have	This unit looks at the properties of different types of material and starts to explain the reasons behind those properties.	This unit will build on the basics of electricity and circuits from KS3 and look at a wider variety of components that we can use and how they work	This unit will build on the basics of electricity and circuits from KS3 and look at a wider variety of components that we can use and how they work	Magnets and electromagnets have many uses in everyday life - this topic looks at how they work and what we can use them for
Knowledge in sequence	Define distance and displacement and state which is a vector and which is a scalar. Express displacements in terms of magnitude and direction. Define speed and velocity and recognise which is a scalar and which is a vector. Calculate speed using the equation speed = distance/time, taking measurements of distance and time to calculate the speed of various objects. Recall typical values of speed for a person walking, running and cycling as well as the typical values of speed for different types of transportation systems. A typical value for the speed of sound is 330 m/s, though this varies as does the speed of the wind. Explain why motion in a circle always has a changing velocity. Draw and interpret distance-time graphs. Calculate speeds from distance-time graphs including those for which the speed is constant and those where the speed is constantly changing. Acceleration can be calculated using the equation a = Δv/t. Estimate the magnitude of everyday accelerations. Draw and interpret velocity-time graphs. Use velocity-time graphs to calculate accelerations and the distance travelled by an object. Use the equation v2 − u2 = 2as. Acceleration due to gravity near the Earth's surface is 9.8 m/s2. Explain terminal velocity in terms of the forces acting on an object. Draw and interpret v-t graphs for objects that reach terminal velocity. State Newton's first law. Use Newton's first law to explain the motion of objects moving with uniform velocity and objects where the speed and/or direction changes. Define inertia and inertial mass. State Newton's second law. Recall and use the equation F = ma. Estimate the speed, accelerations and forces involved in large accelerations for everyday road transport. Investigate the effect of varying the force on the acceleration of an object of constant mass, and the effect of varying the mass of an object on the acceleration produced by a constant force. State and apply Newton's third law. Stopping distance = thinking distance + braking distance. State and explain factors that can affect thinking distance and braking distance. Explain why brakes heat up when the brake pedal is pressed. Estimate how the distance for a vehicle to make an emergency stop varies over a range of speeds typical for that vehicle. Interpret graphs relating to stopping distances. State typical values for reaction times and state factors that affect these. Explain methods used to measure human reaction times and recall typical results. Recall and use the equation momentum = mass x velocity. State the conservation of momentum and use it to complete calculations involving colliding objects. Use the equation F = change in momentum/time. Explain how safety features such as air bags, seat belts, crash mats, cycle helmets and cushioned surfaces for playgrounds work.	•Explain what homeostasis is and why it is important. •Describe examples of conditions that need to be controlled. •Describe the roles of the nervous system and the endocrine system in homeostasis. •Describe the main components of a control system and their functions •To explain how the structure of the nervous system helps it to function •Recall the order of the components of the nervous system •Describe the reflex arc and its function. •Explain the order of events in a reflex arc. •Consider the factors that may influence reaction time in Humans •Investigate how practice can influence reaction time. •Apply this investigation to its usefulness in real life. •Identify the parts of the brain •Describe the function of the parts of the brain •Explain methods used to study the brain •Understand why it is difficult to investigate and treat the brain •Identify parts of eye •Explain function of the different parts of the eye •Explain how the eye focuses on objects both near and far (accommodation) •Able to interpret ray diagrams, showing these two common defects of the eye and demonstrate how spectacle lenses Correct them. •Describe how the thermoregulatory centre of the brain monitors and controls body temperature •Explain how body systems work to heat up or cool down the body as required to maintain a stable body temperature •Describe the endocrine system and define the term hormone. •Label a diagram of the organs in the endocrine system. •Explain why the pituitary gland is often called the master gland. •Compare the actions of the nervous and endocrine systems. •Describe how blood glucose concentration is monitored and controlled. •Explain when insulin is produced and how it helps to control blood glucose levels. •Explain how insulin and glucagon work together to control blood glucose levels •Explain the cause, effects, treatment and problems associated with Type 1 diabetes and Type 2 diabetes •Interpret glucose tolerance test results. •Evaluate modern methods of treating diabetes. •State and explain factors that can affect thinking distance and braking distance. •Describe the effect of too much or too little water on cells. •Explain how the body responds to different temperature and osmotic challenges in terms of sweat and urine release. •Describe secondary sexual characteristics of boys and girls. •Explain the cause of these changes in boys and girls and their relevance in reproduction. •Describe the menstrual cycle and fertility including the role of hormones; FSH, LH and oestrogen •Describe hormonal and non-hormonal methods of contraception. •Explain how hormonal and non-hormonal contraceptives work. •Evaluate their use. •Describe the use of fertility drugs in women with low FSH levels. •Evaluate the use of fertility treatments. •Describe where adrenaline and thyroxine are produced and their effects on the body. •Describe how plant shoots and roots respond to light and gravity. •Explain how plant hormones (auxins) causes these changes in roots and shoots	Define the term pathogen and state the four main groups of pathogen. Explain how pathogens can be spread to plants or animals and cause infection. Describe the main differences between bacteria and viruses. Explain how the spread of disease can be reduced or prevented. Describe the symptoms, mode of transmission, prevention and treatment for measles, HIV and AIDS, salmonella and gonorrhoea. Describe colds and flu as viral diseases. Describe athlete's foot as a fungal disease. Describe the life cycle of the malarial protist. Describe the symptoms, mode of transmission, prevention and treatment for malaria. Describe the body's first line defences Explain how microbes make us feel ill and how viruses damage cells. Explain how the immune system defends against disease Describe what white blood cells do. Explain why antibodies are specific for one pathogen/ antigen Describe what a vaccine contains. Explain how vaccines prevent disease. Explain the idea of 'herd immunity' resistance. See 4.6.3.4 Explain the difficulty in developing drugs that kill viruses without Explain how antibiotics treat only bacterial diseases and how this has saved lives. Describe the problems associated with antibiotic damaging body tissues. Give examples of painkillers and other medicines used to treat symptoms. Interpret data about painkillers and other medicines. Describe Fleming's discovery and explain its importance. State which drugs come from plants and microorganisms. Explain why drugs need to be tested before they can be prescribed. Describe the main steps in the development and testing of a new drug. Give reasons for the different stages in drug testing. Explain the terms placebo and double-blind trial.	•Define a pure substance single element or compound not mixed with any other substance. •Use melting point data to determine whether a substance is pure or not. •Define a formulation as a mixture that has been designed as a useful product. •Recall that formulations are made by mixing the components in carefully measured quantities to ensure that the product has the desired properties. •Recall that cleaning agents, fuels, medicines, alloys, fertilisers and foods are examples of formulations. •Use the following equation to calculate RF values: RF = distance moved by the substance / distance moved by solvent. •Explain how paper chromatography separates mixtures. •Suggest how chromatographic methods can be used for distinguishing pure substances from impure substances. •Interpret chromatograms and determine RF values from chromatograms. •Recall that the test for hydrogen uses a burning splint held at the open end of a test tube of the gas. Hydrogen burns rapidly with a squeaky pop sound. •Recall that the test for oxygen uses a glowing splint inserted into a test tube of the gas. The splint relights in oxygen. •Recall that the test for carbon dioxide uses an aqueous solution of calcium hydroxide. When carbon dioxide is shaken with or bubbled through limewater the limewater turns milky. •Recall that the test for chlorine uses litmus paper. When damp litmus paper is put into chlorine gas the litmus paper is bleached and turns white. CHEM ONLY •Recall the colours produced by lithium, sodium, potassium, calcium and copper compounds. •Recall the colour of the precipitates formed when sodium hydroxide is added to copper(II), iron(II) and iron(III) ions. •Write balanced equations for the reactions that produce insoluble hydroxides. •Understand that carbonates react with dilute acids to form carbon dioxide gas. •Understand that halide ions in solution produce precipitates with silver nitrate solution in the presence of dilute nitric acid. •Understand that sulphate ions in solution produce a white precipitate with barium chloride solution in the presence of dilute hydrochloric acid. •State the advantages of instrumental methods. •Compare instrumental methods with chemical tests. •Interpret a flame emission spectroscopy result given data, when accompanied by a reference set in the same form.	•Define the term 'rate of reaction' •Calculate rates of reaction from the use of graphs •Describe what we mean by collision theory •Describe the term 'collision theory' •Explain how temperature affects the rate of reaction •Explain why temperature affects the rate of reaction •Recall the term 'collision theory' •Explain how concentration affects the rate of reaction •Explain why concentration affects the rate of reaction •State the effect of changing the size of the particles on the rate of reaction •Describe how the rate of reaction can be measured •Explain why chips of different sizes react at different speeds; referring to collision theory and using scientific terminology •Describe what a catalyst and pressure are •Explain how a catalyst and pressure affect the rate of reaction •Explain why catalysts are important in industry •Define the term 'reversible reaction' •Identify different reversible reactions •Describe what we mean by a reaction reaching a 'state of equilibrium' •Define the term chemical equilibrium •Describe Le Chatelier's principle •Explain the effects of changing conditions on reversible reactions	•Interpret data about the Earth's resources •Explain the effect of using the Earth's natural resources and suggest methods to reduce the impact •State examples of natural products and identify finite and renewable resources. •Analyse water samples from different areas •Explain the differences between potable water and Pure water •Define potable water and pure water. •Evaluate the advantages and disadvantages of adding chlorine and fluorine to water •Explain the processes used to treat water •Recall where drinking water is obtained from •Required Practical 8 •Identify the term 'purification' •Suggest why purification is necessary •Analyse and purify water samples from different sources (pH, dissolved solids and distillation) •Explain why microbes are needed in the treatment of sewage •Describe the stages in the process of treating sewage •Describe and evaluate the process of bioleaching •Describe and explain the process of phytomining •E •Create a life cycle assessment on a product •Explain the key factors to be considered •Describe what a life cycle assessment is •Explain how scientific developments for example, biodegradable carrier bags, affect groups of people. •Compare the reasons why people may think that recycling is good or bad. •Describe the advantages of using biodegradable materials. •Describe an experiment to show both air and water are necessary for rusting. •Use the reactivity series to explain sacrificial protection •Evaluate the use of different, mentioned alloys. •Interpret and evaluate the composition of other alloys that are not mentioned. •Link the structure of thermosoftening and thermosetting polymers to their properties and predict their uses. •Explain how HDPE and LDPE are produced. •Describe some properties of glass, clay ceramics, composites and polymers. •Describe the Haber process •Explain the process and know where the raw materials come from. •Evaluate and compare the different combinations of reaction conditions to optimise yield. •Describe what fertilisers are •Explain why plants need nutrients as a soluble salts. •Evaluate making fertilisers on a laboratory and industrial scale and associated problem. •State the names of the salts produced when phosphate rock is treated with nitric acid, sulphuric acid and phosphoric acid. •Investigate what was used as fertiliser before the industrial preparation of fertilisers was invented.	•Explain chemical bonding in terms of electrostatic forces and the transfer or sharing of electrons. •Draw dot and cross diagrams for ionic compounds formed by metals in Groups 1 and 2 with non-metals in Groups 6 and 7 •Work out the charge on the ions of metals and non-metals from the group number of the element, limited to the metals in Groups 1 and 2, and non-metals in Groups 6 and 7. •Translate data between diagrammatic and numeric forms. •Be familiar with the structure of sodium chloride but do not need to know the structures of other ionic compounds. •Deduce that a compound is ionic from a diagram of its structure in one of the specified forms •Describe the limitations of using dot and cross, ball and stick, two and three dimensional diagrams to represent a giant ionic structure •Work out the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure. •Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects. •Recognise substances as small molecules, polymers or giant structures from diagrams showing their bonding •Recognise common substances that consist of small molecules from their chemical formula. •Draw dot and cross diagrams for the molecules of hydrogen, chlorine, oxygen, nitrogen, hydrogen chloride, water, ammonia and methane •Represent the covalent bonds in small molecules, in the repeating units of polymers and in part of giant covalent structures, using a line to represent a single bond •Describe the limitations of using dot and cross, ball and stick, two and three dimensional diagrams to represent molecules or giant structures •Deduce the molecular formula of a substance from a given model or diagram in these forms showing the atoms and bonds in the molecule. •Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects. •Recognise substances as giant metallic structures from diagrams showing their bonding •Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects. •Predict the states of substances at different temperatures given appropriate data •Explain the different temperatures at which changes of state occur in terms of energy transfers and types of bonding •Recognise that atoms themselves do not have the bulk properties of materials •(Higher Tier only) explain the limitations of the particle theory in relation to changes of state when particles are represented by solid spheres which have no forces between them. •Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects. •Include appropriate state symbols in chemical equations for the reactions in this specification. •Knowledge of the structures of specific ionic compounds other than sodium chloride is not required. •Explain the idea that intermolecular forces are weak compared with covalent bonds to explain the bulk properties of molecular substances. •Recognise polymers from diagrams showing their bonding. •Explain why alloys are harder than pure metals in terms of distortion of the layers of atoms in the structure of a pure metal. •Explain how metals conduct heat and electricity. •Recognise giant covalent structures from diagrams showing their bonding and structure. •Explain the properties of diamond in terms of its structure and bonding. •Visualise and represent 2D and 3D forms including two dimensional representations of 3D objects. •Explain the properties of graphite in terms of its structure and bonding. •Know that graphite is similar to metals in that it has delocalised electrons. •Recognise graphene and fullerenes from diagrams and descriptions of their bonding and structure. •Give examples of the uses of fullerenes, including carbon nanotubes. •Visualise and represent 2D and 3D forms including two-dimensional representations of 3D objects. CHEM ONLY •Compare 'nano' dimensions to typical dimensions of atoms and molecules •Consider some of the applications of these nanoparticulate materials. •Students do not need to know specific examples or properties other than those specified. •Given appropriate information, evaluate the use of nanoparticles for a specified purpose •Explain that there are possible risks associated with the use of nanoparticles.	•Define the term 'system' •Name the 8 types of energy store and identify the energy stores in a number of systems •Explain what is meant by the principle of conservation of energy •State the four ways by which energy may be transferred •Describe how forces cause energy transfers •Recall that work done = force x distance and use the equation •Recall the equation used to calculate kinetic energy along with units •Calculate the amount of kinetic energy stored in an object and calculate the elastic potential energy in an object using a given equation •Explain changes in kinetic energy and elastic potential energy •Recall the equation used to calculate gravitational potential energy along with units •Calculate the amount of gravitational potential energy stored in an object •Explain what happens as an object moves down a ramp in terms of energy stores •Recall the definition of specific heat capacity •Recall the equation for calculating the energy stored or transferred as heat in a system •Apply this equation to calculate the temperature of a red hot piece of metal •Define 'power' and recall the equations used to calculate it •Recall the units of power •Rearrange and apply the equation for power to look at energy transferred by various devices •Describe the meaning of 'dissipated' with regards to energy •Describe ways of reducing unwanted energy transfer •Design a building that minimises heat loss and explain how it does this •Appropriately use a range of apparatus to record a range of measurements accurately, including length, area, mass, time, volume and temperature •Appropriate use apparatus to measure energy changes/transfers •Recall the two equations for calculating efficiency •Calculate efficiency as both a decimal and a percentage •Describe the ways of increasing the efficiency of a system (HT only) •State what fuels are mainly used for in the UK •Name at least 5 different ways electricity can be generated •Identify the advantages and disadvantages of building a nuclear power plant •Argue against the use of a particular source of energy •Justify arguments as political, social, economic or ethical •Make simple energy calculations in different scenarios •Rearrange and solve energy calculations •Link energy calculations to solve complex energy questions	SOW being updated	BOLD = Higher tier only RED = Triple Physics only •The poles of a magnet are where the field is strongest. Like poles repel. Unlike poles attract. This is a non-contact force. •A magnetic field is a region where a force acts on a magnetic material – its strength depends on the distance from the magnet. The direction of a field is always from the north pole towards the south pole of the magnet. •Permanent magnets produce their own field. •Induced magnets become a magnet when placed into a magnetic field. They are always attractive and lose magnetism quickly when removed. •Iron, steel, nickel and cobalt are magnetic materials – they are always attracted to a magnet. •A compass contains a small bar magnet that points in the direction of the Earth's magnetic field •Students need to know how to plot a magnet's field using a compass, draw the field pattern for a bar magnet and explain how a compass provides evidence that the Earth's core is magnetic. •When a current flows through a wire a magnetic field is produced which depends on current and distance from the wire. •Shaping the wire into a solenoid increases the strength of the field. The shape of the field is similar to a bar magnet's field. Adding an iron core creates an electromagnet and increases the field strength further. •Students need to be able to describe how to demonstrate the effect of a current and draw the field pattern for a straight wire and a solenoid. •Physics only – students need to interpret diagrams of electromagnetic devices to explain how they work **•The motor effect takes place when a current carrying wire is placed into a magnetic field and a force is exerted. Students should use Fleming's left hand rule for the motor effect and recall factors that affect its strength.** **•F = B x I x l (Force = magnetic flux density x current x length)** **•A coil of wire with a current flowing will tend to rotate in a magnetic field. This is the basis of a motor. Students must explain how the force on a conductor causes the rotation.** •Physics only – loudspeakers and headphones use the motor effect to convert variations in current into pressure variations in sound waves. Students need to explain how they work. •Microphones convert pressure variations in sound waves into electrical current variations. Students must explain how microphones work. •Physics only – If a conductor moves relative to a magnetic field a potential difference is induced. If this is in a circuit a current will flow. This is called the generator effect. •The induced current generates a magnetic field that opposes the original change. •Students should recall factors that affect the size and the direction of the induced current/p.d. and apply the generator effect in a given context. •The generator effect is used in alternators for AC and dynamos for DC. This needs to be explained and graphs of p.d. generated over time need to be drawn or interpreted. •Physics only – A basic transformer consists of a primary coil, secondary coil and an iron core. The ratio of turns on primary to turns on secondary determines the ration of potential difference on primary to secondary. •Vp / Vs = np / ns •If transformers were 100% efficient then electrical input power would equal electrical output power •Vs x Is = Vp x Ip •Explain how AC in one coil induces a current in the other in a transformer. •Be able to calculate the current drawn from the input supply to provide a particular power output. •Apply the equations to explain the advantages of power transmission at high potential differences.
Skills	Maths link – •Rearranging equations •The difference between scalars and vectors and examples of each •Calculating gradients from graphs and recognising what the gradient represents •Determining areas under graphs and recognising what the area represents •Skills to help remember equations and the units of terms in the equation •How to draw graph axis, plot data and draw lines of best fit Literacy link- •Writing and structure of a method for practical lessons and required practical assessment, how to structure 6 mark extended response question, how to incorporate scientific keywords correctly into answers Practical skills- •How to present a risk assessment for practical activities eg: hazard, risk, precaution •How to draw a results table	•Recall of information •Evaluating information and drawing conclusions •Use of mnemonics to learn sequence of Reflex action (SIRSIMER)	Use UV powder on door handles at start of lesson and black light to show transfer of pathogen. Carry out research and explain application of science and personal and social implications related to diseases Carry out research and explain application of science and personal, social, economic and environmental implications related to malaria. Observe prepared blood smears using a microscope or bio-viewer. Draw the cells. Use models to represent phagocytosis and antibody specificity. Growing yogurt bacteria Investigate the effect of antiseptics of antibiotics on bacterial growth using agar plates and measuring zones of inhibition	Testing for gases. Chemical Changes. 1) reactions of metals with acids-hydrogen test 2) reactions of metal carbonates with acids-carbon dioxide test. Separation techniques. Atomic Structure: chromatography introduced.	Maths link- using and rearranging formula, standard units for measurement- volumes and size Literacy link -	Maths link- measuring the volume of mass of chemical substances accurately. Literacy link- writing and structure of a method for practical lessons and required practical. Analysis and evaluation of the method. To be able to structure the 6 mark extended response question, and to incorporate scientific keywords correctly into answers. Tables- to be able to present a risk assessment for the practical activities, such as the hazard, risk and precaution.	Maths link- how to use standard units for volumes and convert between, simple addition to work out electronic configuration and to count numbers of electrons in shells of atoms and ions, Development of scientific drawings eg: structure of bonding types Standard planning and safety for practical experiments, naming and selecting appropriate scientific equipment Use of command word terminology to understand and answer exam questions eg: describe, explain, state, calculate, compare, define	•Recall of information •Rearranging formulae •Organising calculations •Evaluating information and drawing conclusions	SOW being updated	•Investigation skills – bar magnets / electromagnets i.e. variables, controls, safety, etc.
Key Words	Forces•Make objects move or change shape, measures in Newtons. Speed•How something covers a set distance, speed is a scalar quantity. velocity•Speed in a given direction, a vector quantity. Acceleration•How quickly something speeds up distance•A scalar quantity that measures how much ground an object covers when moved. Displacement•Measures how far out of place an object is from A to B Resultant force•The overall single force. This is zero if objects are stationary or at constant speed. Terminal velocity•Maximum speed objects reach when falling. When weight = reactive forces Stopping distance•The amount of time it takes to stop (thinking distance + braking distance (in m). Momentum (HT)•A vector quantity that is a property of moving objects.	Accommodation - To focus on near and far objects Vasodilation - Blood vessels dilate Vasoconstriction - Blood vessels constrict Myopia - Short sightedness rays focus before the retina Hyperopia - Long sightedness rays focus behind the retina Refracts - Bends light rays ADH - released by the pituitary gland •Anti diuretic hormone causes the reabsorption of water back into the bloodstream via the kidney tubules Phototropism - Growth and response to light Geotropism - Growth and response to gravity Auxin - Plant hormones found in shoots and roots	Communicable Disease - A disease that can be passed on to others Non Communicable Disease - A disease that cannot be passed on to others. Pathogen - Microorganisms that cause infectious diseases. Bacteria - Reproduce rapidly in body and may produce poisons (toxins). Virus - Live and reproduce in cells, causing cell damage.	Stationary phase - The medium (material) that does not move. Mobile phase - The liquid that is used to move the sample through the stationary phase. Solvent front - The level reached by the top of the moving solvent. Chromatogram - The final result with the substances separated on it.	Reversable reaction - A reversible reaction is one in which the reactants form products. The products are then able to react together to reform the reactants. The symbol for a reversible reaction is ⇌ . Catalyst - substance that speeds up a chemical reaction without getting used up. A catalyst lowers the activation energy. Biological catalysts are called enzymes. Dynamic equilibrium - A point where the forward and reverse reactions are occurring at the same rate.	Finite - Will run out eventually renewable•Can replace them as we use them Sustainable - generation without compromising the ability of the needs of the current future generations to meet their needs. Potable water - Water that is naturally safe for humans to drink Life cycle assessment(LCA)-LCA is the environmental impact of a product.	Melting point - Temperature at which a solid turns to liquid. Boiling point - Temperature at which a liquid turns to gas. Cation - Positively charged particle Allotropes - Different structural forms of an element. Delocalised - Electrons that are no longer bound to a single atom, and are free to move	Conservation of energy - Energy can never be created or destroyed just transferred from one store to another. Power -The rate of transfer of energy OR the amount of work done in a given time. Specific heat capacity (SHC)•The amount of energy required to raise the temperature of 1kg of a material by 1°C. Conduction - How thermal (heat) energy is transferred in solids by particles colliding. Convection - How thermal energy is transferred in liquids or gases. Relies on movement of particles and convection currents. Insulation - Methods to reduce heat loss from an object. Efficiency - When energy is transferred, some is wasted. The less energy is wasted, the more efficient an object is.	Current - The rate of flow of electrical charge. Potential difference (voltage) - A measure of how much energy is transferred between two points in a circuit. Resistance - A measure of how difficult it is for current to flow through a component. Thermistor - A component whose resistance decreases as temperature increases. LDR - A component whose resistance decreases as light intensity increases.	Magnetic field - A region where a magnetic material experiences a force Solenoid•A wire coiled around an iron core Magnetic Flux Density - How strong a magnetic field is Motor effect - The electromagnetic force on a wire Induced•EP•produced•made a magnetic field or current
End Point Assessment method	Physics Paper 2 Common marking points throughout the unit (CMPs)- feedback provided by teacher at the following points: Lesson 4: velocity CMP-1 Lesson 8: uniform acceleration CMP-2 End of unit forces test (30 mins) to be given after lesson - 16 or 17 (end of unit)	Biology Paper 2 CMP's in lessons 9,14,15 2 Kerboodle assessments (1 to be used as home learning)	Biology Paper 1 CMP in lesson 4 and 8 and end of unit assessment Kerboodle Two kerboddle assessments could be done for home learning	Chemistry Paper 2 Common marking points throughout the unit (CMPs)- feedback provided by teacher at the following points: Lesson 5: Testing for gases and CMP-1 Lesson 9: Instrumental methods and CMP-2 (CHEM ONLY) End of unit test (30mins) to be given after lesson-14 (end of unit)	Chemistry Paper 2 Common marking points throughout the unit (CMPs)- feedback provided by teacher at the following points: Lesson 3. Rates of reaction – CMP1 Lesson 5. Rates of reaction- pressure and catalysts – CMP2 Lesson 8- Reversable reactions – CMP3 End of unit assessment- 30 minutes Lesson 8: CMP – Factors affecting the rate of reaction Lesson 9: End of unit assessment.	Chemistry Paper 2 Common marking points throughout the unit (CMPs)- feedback provided by teacher at the following points: Lesson 7- using resources •CMP Earth's resources assessment. End of unit Earth resources test (30 minutes) to be given after lesson 15 which is the last lesson of the unit.	Chemistry Paper 2 Common marking points throughout the unit (CMPs)- feedback provided by teacher at the following points: Lesson 1: Metallic bonding and CMP-1 Lesson 10: Metallic structures and CMP-2 Lesson 12: Graphene and fullerenes AND CMP-3 End of unit structure and bonding test (30mins) to be given after lesson-14 (end of unit)	Physics Paper 1 CMPs in lessons 5, 7 and 11 2 Kerboodle assessments (1 to be used as home learning)	Physics Paper 1 SOW being updated	Physics Paper 2 •EXP after lesson 3 •End of unit test (Kerboodle) •Opportunity for 6-mark questions: - explain how to plot magnetic fields - Explaining how electromagnetic devices work - Explaining how loudspeakers and headphones work - Explaining how transformers work