SUBJECT: Science

CURRICULUM PLAN



	2	2022-23					HIG	3113
	YEAR 7	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2	
	BIG IDEAS	Introductory Unit, Matter 1, Organisms 1	Energy 1, Organisms 2	Reactions 1, Electricity 1	Reactions 2, Organisms 3	Matter 2, Forces 1	Organisms 4, Waves 1	
SS1 and 2 owledge and Key skills	Knowledge	Health & Safety, Equipment and Measuring, Structure of animal and plant cells, bacteria and unicellular organisms. Differences between alters, elements and compounds, chemical symbols and formulae for elements and compounds, conservation of mass changes of state and chemical reactions.	Energy in Matter, Physical changes, Energy transfers, Diffusion of substances into cells	States of matter, particle kinetics, gas pressure, viscosity. Static and current electricity.	Chemical reactions, Combustion, Thermal Decomposition, ExoEndothermic, Chemical Formula, Chemical equations, Structure and function of major body systems.	The concept of a pure substance and separation techniques. Gravity and Space, Seasons and days	Sound waves. Structure of flowers, plant reproduction and dispersal of seeds, structure and function of human reproductive system, puberly gregarancy and birth	
	Skills	Recognise hazards and risks when prompted, identify and use the most common laboratory explorers. Draw a ber chart, calculate a mean labertly one or more correct unistables and significant other variables. Identify the hypothesis in an investigation from provided sources.	Plot 2 variables from scientific data, use expressions in decimal form, substitute numerical values into algebraic equations.	Select appropriate agrarants from those provided and use with guidance. Using magnification and scale via microcopy Malting accurate measurements. Calculating percentages.	Relate structure to function. Writing chemical formula! equations. Suggest significant variables in an investigation. Constructing and interpreting tables and diagrams.	Make some accurate observations or whole number measurements to questions and ideas under investigation. Pletting 2 variables from experimental valua. Transiting information between graphical and numerical form. Constructing bar charts of gestation in different animals.	Suggest improvements to working methods. Selecting the most appropriate apparatus and method to separate a substance.	
	Key Vocab	Hazard, Risk, Variables, Nucleus, chloroplast, cytoplasm.cell membrane, cell wall, mitochodria, ribosomss, vacuole,	Particle, atom, solid, liquid, gas, freezing, melting, boiling, condensing, evaporating, diffusion, diaphragm	Solid, Liquid, Gaz, Kinetic , Viscosity, Charge, Current, Attract, Repel, Parallel, Series, Resistance	Oesophagus, stomach, intestine, rectume,nzymes, heart, lungs, alvedi, blood vessels. Combustion, Thermal decomposition, Exothermic, Endothermic	Pure, Impure, compound, separation, filtering, evaporating, chromatography, distillation. Mass, weight, gravity, stars, orbit, galaxy	Stigma, style, stamen, anther, carpel,penis, testicles, gland, ovary, oviduct, uterus, vagina, cervix, fertilisation, gestation, umbilical cord. Frequency, amplitude, wavelength, transverse wave, longitudinal wave.	
		AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2	1
	YEAR 8	Introduction- Safety review, Careers in Science. Acids and Alkalis, Ecosystems	Balanced and Unbalanced Forces, Healthy Living , Sound, Chemical reactions	Variation, Motion, Energy transfer	Energy in reactions, Pressure, Rocks, Photosynthesis/Respiration	Light, Evolution	Earth atmosphere, Adaptations	
	Knowledge	Ecosystems, habitats, food security and interdependence. Uses of acids and alkalis, Weder alkation .	Balanced and unbalanced forces, Hooke's Law. A healthy field, growth of bacteria, Esamples of viruses (Covid), thouga of their effects. Balanced (Covid), thouga of their effects. Balanced of their effects of th	Energy transfers in systems, injudiculary energy, Calculations of speed, distance, time, acceleration, humanised electric transportation and accelerating efficiency. Energy recourses and generating electricity.	Pressure calculations, examples of sedimentary, metamorphic and Igneous rocks and how they are formed, rock cycle. Photosynthesis equation, Starch testing of leaves, structure and function of leaves.	Light and vision, the refraction of light, colour. Natural selection, self-cition and the importance of bediversity.	Importance of minerals to plants, carbon cycle and human effects, global earning. Binds and about backers, plant and annual balgeafore.	(
	Skills	Making and recording observations. Making links between units. Translating information between graphical and numerical form. Understanding simple probability.Construct bar charts and line graphs for appropriate data.	Recognise dependent and independent variables. Use appropriate apparatus and materials during lab work. Make and record observations: Change the subject of an equation and calculting means. Identify risks. Constructing tables.	Identifying risks and suggesting improvements to working methods giving reasons. Selecting the most suitable variables to investigate. Constructing and interpreting tables and picting 2 variables from experimental data.	Interpreting flow charts and dagrams, Substituting into equations and changing the subject of an equationmaking experimental botherwistors, and measurements using a range of different methods, dealing with misconceptions.	Changing the subject of an equation, using units appropriately "Joding graphs from experimental data, suggesting improvements to experiments, takking accurate measurements.	Selecting appropriate independent, dependent and corror variables, analysing and evaluating results. Forming a hypothesis and discussion around environmental issues and differing opinions.	,
	Key Vocab	Habitat, population, food chain, food web_predator prey, acid, alkali, indicator, base , neutralisation, salt	Nutrients, carbohydrates, proteins, waves frequency, wavelength, Balanced unbalanced thrust upthrust, springs, Newtons, kilograms, gravity	Variation, characteristics, continuous, discontinous, evolution, natural selection, Velocity, acceleration, input, output, electrical.	Sedimentary, metamorphic, igneous, porous, cycle , carbon dioxide, light, oxygen, glucose, palisade, spongy, meophyll, stomata, exothermic, endothermic	Waves, reflection, refraction, evolution, natural selection, survival of the fittest	Light intesity, control variable, negative correlation, carbon cycle, respiration, photosynthesis, combustion, decomposition, climate change, global warming. The principles of sampling as applied to scientific data,	
	YEAR 9	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2	
	Chemistry							ī
		Atomic etructure, colle	Chemical Changes	Wilstony of the atom/ they periods table	Energy changes	Pevirion	Flactrolysis	
	TOPIC	Atomic structure, cells Atomic structure - atoms, elements, compounds and mixtures The development of the model of the atom - plum pusting and nuclear model Relative electrical charges of subatomic particles, size and mass of atoms Relative atomic mass and isotopes Relative atomic mass and isotopes	Chemical Changes Metals react with oxygen to produce metal oxides reactively series. Knowledge and understanding are limited to the reduction of oxides using carbon	Hilstory of the atom/ ther periodic table The development of the model of the atom - plum pudding and nuclear model Reactivity of the the different groups of ther periodic table	Energy changes When reactions occur energy transfer can be exocharric or endothermic. Understand the difference between endothermic and endothermic. Reaction profiles. The energy change of reactions	Revision Review work completed in KS3	Electrolysis y. Electrolysis of mels/ aluminium electrolysis/ electrolysis of solutions, electrode reactions	
	TOPIC	Aloreic structure - atoms, elements, compounds and mixtures The development of the model of the atom - plum published per a substantial publis	Metals react with oxygen to produce metal oxides reactivity series. Knowledge and understanding are	The development of the model of the atom - pilum pudding and nuclear model Reactivity of the the different groups of ther periodic	When reactions occur energy transfer can be eaothermic or endothermic. Understand the difference between endothermic and endothermic. Reaction		y. Electrolysis of melts/ aluminium electrolysis/	_
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	TOPIC Knowledge Skills Key Vocab	Abortic chiuduse - abortic chiences, compounds and The development of the model of the atom - plum putding and mushar model. Readment of mushar model. Readment of mushar model. It also and mass of abortic articles, and mass of abortic Relative abortic meas and isotopes Electronic services. Sales use of a range of equipment Sales use of a range of equipme	Means want with copyon to produce metal oxides meanthly series. Knowledge and understanding are limited to the reduction of oxides using carbon. Use these to identify where reduction and oxidation. has steen piece. Describe how carbon is used to reduce metal collect. Speak now the steep contact and the collection of the collection of the degreement of metal oxides. Oxidation' oxides' reductions' electrory half equation OLL RIG.	The development of the model of the atom - plum pudding and nuclear model Reactivity of the the different groups of the periodic state. Safet uses of a range of equipment to separate chemical reference to separate chemical reference. Use sit with another periodic separate to the control of	When reaction occur energy transfer can be excellenteric or endothermic. Understand the difference borsews endothermic and endothermic faculties profess. The energy charge of reactions. Draw reaction profess. Investigate energy charge of a reaction to practical least. Excellenteric endothermic energy charge of esaction profess.	Review work completed in KS3 SUMMER 1	y. Electrolysis of mellar sharrarum electrolysis/ electrolysis of solutions, electrolysis reactions predict products of electrolysis/ complete half equations of electrolysis cell Electrolysis/ electrolysis/ electrolysis cell titation/ concentration/ relative molecule mass	
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