		AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Themes	CHANGE: WHERE IM FROM AND WHERE IM GOING Biology	THE ENTERTAINMENT INDUSTRY Biology	HEALTH AND DISEASE Chemistry	THE MEDIA Chemistry	DEMOCRACY Physics	CULTURE Physics
	Lower theme learners can:	 Define a life cycle Define puberty Identify points of the ageing process Define body clock 	 Observation experiment – record changes to a living organism 3 & 4 Create a interactive cell diagram Create a slideshow/picture book about the life cycle Do a live dubbing over a short biology based documentary 	 Create an information poster about getting vaccinations Create a sensory poster on the benefits of medicine Role play – working as a health professional 	 Role play – STEM hero Record a chemistry experiment Role play – science and social media 	 Sensory experiment – matching sounds or objects Explore different types of forces Sensory experiment – explore different materials 	 Sensory experiment exploring colour Explore day and night Sensory experiment what can you do with different states of matter (solids, liquids and gases)
YEAR 7 & YEAR 8 LOWER SCHOOL	Higher theme learners can:	 Life cycles of humans Define puberty: men and women Define physical abilities at different ages and lifestyles Define body clocks in animals 	 Observation experiment – record changes to a living organism Create an educational character/comic using an organ of the body for inspiration Make a fact file from a David Attenborough documentary Add a recorded voiceover on a short biology based documentary 	 Research how are medicine and vaccinations made Research those who created medicines/vaccination Research the benefits and impact of vaccinations 	 Research a STEM hero Record and edit a video of a chemistry experiment Create a social media feed/page about a chemistry experiment 	 Sensory experiment – compare different sounds, movements or objects and record findings Explore ways to make experiments fair and unbiased Make predictions on an experiment and apply a voting system 	 Mixing colour Explore light and shadows Compare states of matter (solids, liquids and gases) to people
YEAR 9 & YEAR 10 & YEAR 11	Themes	LOOKING AFTER MYSELF Biology	LIVING INDEPENDENTLY Biology & Chemistry	TRAVELLING INDEPENDENTLY & SAFELY IN THE COMMUNITY Chemistry	BEING CONFIDENT AND ASSERTIVE Biology	ENTERPRISE – WORKING IN A CAFÉ Physics and Chemistry	LOOKING FOR WORK

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Lower theme learners can:	 Answer: what is in my body and how does it work? Create a health log Make an exercise routine Identify and investigate things that can cause illnesses 	 Investigate man –made and natural materials Explore the 5 human senses Experiment- investigate changes of state Explore surface temperatures of different household materials 	 Explore different types of energy Explore different materials used in transport Identify qualities that make something 'Green' 	 Identify forces (friction, air resistance, gravity, magnetic, electrostatic) Carry out own experiment to investigate a force and share findings – tell others in class or write a short report Answer: how do forces affect people's lives? 	 Investigate changes of state (ice /water/tea at a café!) Explore the relationship between temperature and drink mixtures Investigate electricity in the workplace 	 Research a Physician role Role play: Scientists at work with electricity Participate in a science fair
Higher theme learners can:	 Explore how to look after different systems in the body Make a log to document physical changes you experience Investigate and observe changes during and after an exercise session Answer: How do illnesses affect our body functions 	 Identify man-made and natural materials used in our everyday lives Identify and sort scenarios in which we use our 5 senses to live independently Experiment – investigate and understand the processes that cause changes of state Investigate the relationship between temperature and household bills 	 Explore how energy is converted Explore how materials can be manipulated Research efficiency of different modes of transport 	 Describe forces with examples Design own questions and experiment to investigate a force – write a report to summarise findings (include aim, method, results, conclusions) Answer: How do forces affect people's bodies? 	 Review: investigate and understand what causes change of state Answer: Mixtures vs Solutions – what is the difference Identify safety measures and hazards of using electricity in a cafe 	 Research qualifications for a science based job Role play: Scientists at work with light Role play: Present a groundbreaking scientific discovery

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Lower learners can:	 identify and describe features of a cell including function of each part order cells, tissues, organs, and systems in terms of size, and describe examples Identify and describe the role of human skeleton, joints, and muscles Identify and describe processes involved in breathing Identify and describe processes involved in breathing Describe parts and functions of the digestive system Exploring the effects of disease and lifestyle Describe a healthy diet and list the effects of an unbalanced diet practical 	 Describe photosynthesis and identify the stages. Describe food chains /webs Describe the effects of toxins in the environment and how they pass along the food chain Describe natural selection and importance of biodiversity Describe the nature of genetic material (role and structure of DNA, chromosomes, and genes) Describe variation and genetic disorders practical 	 Describe solids, liquids and gases in terms of the particle model. Recognise differences between states of matter and properties of solids, liquids and gases. Identify features of the periodic table and describe how it is organised. Identify metals and non-metals in the periodic table. Describe the physical properties and patterns of reactions in Group 1 metals and halogens. Explain what is meant by a compound and recognise how compounds are formed and named. Describe properties of elements and the compound that they form. Describe what a polymer is, using examples. Identify polymers' properties and uses. Practical 	 Describe acids and alkali properties and explain methods used to identify them. Describe neutralisation reaction. Describe the composition of the atmosphere and identify which gases are greenhouse gases. Describe carbon cycle Describe effects of human activities on planet (e.g. fuel burning, cattle farming) practical 	 Identify and describe energy transfers by fuels and food. Describe energy stores and transfers Describe forces (push and pull and non- contact) Identify the factors involved in defining speed. Calculate the speed using the speed formula. Practical 	 Describe and draw electrical circuits diagrams. Define current, amps and voltage, in context of an electrical circuit Compare series and parallel circuits Describe the laws of magnetic attraction Describe what an electromagnet is and explain the factors that affect the strength of an electromagnet Identify how sounds are made and how sound waves transfer energy. Identify properties of light and describe reflection and refraction. Practical

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<i>Higher learners can:</i>	 Explain features of a cell and how this varies for different types of cells Explain the functions of major organs, and which systems they are part of Identify and describe problems with the skeletal system Explain gas exchange in humans, including chemical reactions that occur, and impact of lifestyle Explain gas exchange in humans, including chemical reactions that occur, and impact of lifestyle Explain functions of each organ in digestive system Explain in detail the effects of disease and lifestyle on the breathing system Explain the links between diet and obesity and discuss its impact on health Practical 	 Explain photosynthesis and the role of the sun Explain how ecosystems rely on producers and micro- organisms. Explain in detail effects of toxins in environment on animals and plants Explain the evolution evidence in detail Explain in detail the link between chromosomes, genes, and DNA Explain and discuss inherited disorders practical 	 Discuss in detail different properties of solids Explain in detail organisation of elements on the periodic table. Use data to predict the reactivity of metals and non-metals. Compare and describe in detail the properties of elements with the properties of the compounds that they form explain why structures of polymers make them useful to us. practical 	 Explain in detail properties of acids and alkalis Investigate and explain neutralisation reaction in detail Explain how carbon dioxide is released from the burning of fossil fuels Explain processes involved in carbon cycle Explain how human activity is changing Earth's atmosphere and thus climate. practical 	 Explain in detail energy transfers by fuels and food. Explain energy storage, transfer and wastage Explain in detail different types of forces Explain the factors involved in defining speed. Practical 	 Explain measurement of electrical flow around a circuit Explain current and voltage in series and parallel circuits Describe magnetic forces, including explanation of the term non-contact force Compare the use of electromagnets in different applications Describe in detail how sound waves transfer energy. Explain reflection and refraction in detail. practical

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	No Theme	Biology: Plan for Human Body Biology	Biology: Plan for Human Body Chemistry: Chemistry in Our World	Chemistry: Chemistry in Our World Physics: Physics, Electricity, Magnetism and Waves	Physics: Physics, Electricity, Magnetism and Waves	Chemistry: Chemistry in Our World	Enrichment
YEAR 9 & YEAR 10 & YEAR 11 UPPER SCHOOL- EXAMS	<i>learners</i> <i>can:</i>	 Identify and describe features of a cell including their function Order cells, tissues, organs, and systems in terms of size, and describe examples Describe parts and functions of the digestive system Identify respiration process Identify and describe types of pathogens, and types of infectious disease Describe the processes involved in the immune response, and vaccination Describe effects of medical drugs on the human body 	 Identify and describe features of human nervous system, including reflexes Identify examples of hormones and their functions Identify effects of contraceptive pill on menstrual hormones Chemistry Describe how acids react with salts /metals.Do word equations, and describe reactions between acids and alkalis with examples Identify & describe types of reactions (combustion, oxidation, neutralisation, including related temperature changes and factors affecting rates of reaction Identify changes to Earth's atmosphere over the last billion years. identify chemicals in Earth's current atmosphere and locked in rocks/ fossils 	 Describe how carbon was locked into fossil fuels and how atmosphere developed Describe crude oil, including where it comes from and what its' uses are. Also Identify substances released when fossil fuels burn, and effects on organisms Describe effects of human activities (e.g. fuel burning, cattle farming) on planet. Also Describe the composition of safe drinking water Physics Define current, amps, resistance, voltage, in context of an electrical circuit Describe a complete electrical circuit, and an alternating circuit Describe components of a plug, and wire a plug 	 Recap on plugs, then explain energy transfer in everyday electrical appliances Describe the forces exerted by bar magnets including how poles repel or attract Explain the creation of a magnetic force by passing a current through a wire Describe features of transverse and longitudinal waves and identify from diagram Identify wavelength and frequency on a wave diagram and calculate wave speed (frequency x wavelength) Describe features of an electromagnetic waves (transverse, energy transferring) and describe: radio, microwave, infrared, visible light, ultraviolet, x-ray, gamma rays 	 Complete revision and prepare for final exam and TDA Wrap-up, revision, experimentation Exams	experiment Class Science Fair

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Higher learners can:	 Biology Explain features of a cell and how this varies for different types of cell Explain the functions of major organs, and which systems they are part of Explain functions of each organ in digestive system in detail Identify and describe processes involved in respiration Explain how different pathogens and diseases attack the human body Explain the immune response and vaccination process in detail Explain how drugs affect bodies, advantages /disadvantages of their use 	 Explain structure of human nervous system and processes behind reflexes Explain functions of different hormones, including those of the menstrual cycle Explain and evaluate effects of contraceptive pill Chemistry Explain hydrochloric acid produces chlorides, sulphuric acid produces sulphates, and h ow acids react with alkalis and carbonates, inc. substances produced explain how chemical reactions create or take in energy, affecting temperature explain chemical processes involved in changes to Earth's atmosphere explain role of CO2 in how atmosphere developed (dissolving, photosynthesis) 	 Chemistry Explain process of carbon locking into fossils, and how atmosphere developed Explain processes of crude oil being separated into different fuels. Also explain effects and implications of fossil fuel use for human health, and for Earth Explain how human activity is changing Earth's atmosphere and thus climate. Also explain how drinking water can be produced (filtration, distillation, sterilisation) Physics Explain measurement of electrical flow around a circuit Explain functions of plug components, and fuses, wire a plug, select suitable fuse 	 Physics Recap on plugs, then explain energy transfer dependency on power and use (energy = power x time) Describe magnetic forces, including explanation of the term non-contact force Explain how the current in a wire, distance from it, and shaping it affect magnetic force. Also describe an electromagnet (solenoid /coiled wire, plunger, and iron core) Explain difference between transverse and longitudinal waves using the terms, perpendicular oscillation, parallel oscillation, direction of energy transfer, and give examples Define the terms wavelength, amplitude, frequency, and calculate wave speed Describe electromagnetic waves in terms of velocity, wavelength, frequency and order in wavelength and explain difference between types of waves 	 Complete revision and prepare for final exam and TDA Wrap-up, revision, experimentation 	 Design own science experiment Class Science Fair