

		AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Themes	HOME AND SCHOOL AND COMMUNITY Biology	FESTIVALS Biology	LOOKING AFTER OUR WORLD Chemistry	TRAVEL AND TRANSPORT Chemistry	WORLD OF WORK Physics	LEISURE TIME Physics
YEAR 7 & YEAR 8 LOWER SCHOOL	Lower theme learners can:	<ul style="list-style-type: none"> ➤ Identify body parts and appearance ➤ Explore diet and exercise ➤ Identifying personal hygiene routine ➤ Recall advice for a healthy lifestyle 	<ul style="list-style-type: none"> ➤ Answer: what happens to plants and animals in Spring? ➤ Answer: what happens to plants and animals in Summer? ➤ Answer: what happens to plants and animals in Autumn? ➤ Answer: what happens to plants and animals in Winter? 	<ul style="list-style-type: none"> ➤ Answer: What is pollution? ➤ Identify useful chemicals (i.e. cleaning up oil spills) ➤ Answer: What are fossil fuels? 	<ul style="list-style-type: none"> ➤ Answer: How do cars and other vehicles move? ➤ Define and explore carbon footprints ➤ Design a supercar 	<ul style="list-style-type: none"> ➤ Exploring important scientists and their discoveries (i.e. Curie, Einstein, Newton) ➤ Answer: how do scientists carry out experiments? ➤ Design experiments that could help the world 	<ul style="list-style-type: none"> ➤ Explore energy usage in sports and hobbies ➤ Define and explore buoyancy, friction, and air resistance ➤ Define and explore sound waves
	Higher theme learners can:	<ul style="list-style-type: none"> ➤ Identify physical features and internal organs ➤ Explore diet, exercise, and the importance of breathing ➤ Identifying personal hygiene routine and basic first aid ➤ Recall advice to avoid illness and disease 	<ul style="list-style-type: none"> ➤ Answer: what happens to plants and animals in Spring? ➤ Answer: what happens to plants and animals in Summer? ➤ Answer: what happens to plants and animals in Autumn? ➤ Answer: what happens to plants and animals in Winter? 	<ul style="list-style-type: none"> ➤ Identify the chemicals that pollute our environment ➤ Identify helpful chemicals (i.e. cleaning up oil spills) ➤ Identify alternative/renewable energy sources 	<ul style="list-style-type: none"> ➤ Identify fuels vehicles use (and alternative fuels) ➤ Answer: Planes and trains- how much energy is needed? ➤ Design a vehicle 	<ul style="list-style-type: none"> ➤ Exploring important scientists and their discoveries (i.e. Curie, Einstein, Newton) ➤ Exploring gravity and magnetism ➤ Answer: What do scientists study? 	<ul style="list-style-type: none"> ➤ Explore energy usage in sports and hobbies ➤ Define and explore buoyancy, friction, and air resistance ➤ Define and explore sound waves, and explain how they travel
YEAR 9 & YEAR 10 & YEAR 11	Themes	LOOKING AFTER MY FAMILY Biology	MOVING OUT OF HOME Biology & Chemistry	HOLIDAYS Chemistry	EMOTIONAL & PHYSICAL WELLBEING Biology	ENTERPRISE- WORKING IN A SHOP Physics and Chemistry	GOING TO COLLEGE Physics

		AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Lower theme learners can:	<ul style="list-style-type: none"> ➤ Describe house and garden plants, crops, pets and farm animals. ➤ Describe how people take care of plants or animals ➤ Best house plants or pets, and would you want a pet dinosaur?! ➤ Describe how plants and animals breed. ➤ Describe: what are genes? 	<ul style="list-style-type: none"> ➤ Explain how to train a pet? ➤ Answer: are home and garden substances safe to mix? ➤ Describe different metals and their properties (gold, tin foil, steel) 	<ul style="list-style-type: none"> ➤ Describe metals: what are their uses? ➤ Describe the effect of plastic usage on our planet ➤ Answer: how can we save energy when on holiday? 	<ul style="list-style-type: none"> ➤ Explain parts of the brain ➤ Explain the hippocampus ➤ Explain chemicals released by our brains (i.e. adrenaline, serotonin...etc.) 	<ul style="list-style-type: none"> ➤ Answer: moving large items: what vehicles are used? ➤ Explore: materials, properties, and their usage, i.e. why are shopping bags made from plastic or paper, and not metal? ➤ Working at a shop – what is the best way to stack a shelf, or pack a bag? (Heavy things on top or below? How much fits safely on a shelf, in a bag, etc?) 	<ul style="list-style-type: none"> ➤ Answer: how fast is walking, cycling, driving? What affects your choices (weather, temperature, time) ➤ Answer: how does sound get to our ears? ➤ Explore STEM jobs and the future
	Higher theme learners can:	<ul style="list-style-type: none"> ➤ Explain how living things interact and create food chains /webs ➤ Explain what affects plants and their growth ➤ Describe how changes affect pets ➤ Explain humans impact on the environment ➤ Explain how to breed an amazing farm crop, or farm animal. ➤ Explain: what are genes? How they affect generations of humans. 	<ul style="list-style-type: none"> ➤ Explain the different between breeds of dogs and cats ➤ Answer: how substances change when mixed, heated, or cooled? ➤ Describe different metals. How are they created? 	<ul style="list-style-type: none"> ➤ Describe metals, properties, and usage ➤ Describe the effect of plastic usage on our planet ➤ Explain renewable and non-renewable energy ➤ Explain different types of forces 	<ul style="list-style-type: none"> ➤ Explain areas of our brain. What happens if one part is injured? ➤ Explain the amygdala ➤ Answer: how would someone's wellbeing be affected if our brain was not releasing and controlling chemicals properly? 	<ul style="list-style-type: none"> ➤ Answer: Getting things to and from shops – why do shops use big lorries, but customers use cars, buses or trains? ➤ Explore experimentation with different materials- which is strongest/safest? ➤ Answer: electrical safety and efficiency in a shop – if you ran a shop, would you leave lights on all the time? How would you keep things safe for customers? 	<ul style="list-style-type: none"> ➤ Answer: how fast or safe are electric cars? ➤ Answer: how sound travels, and the effect it has on you (i.e. music) ➤ Research STEM jobs in the future? What skills will be most needed?

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YEAR 9 UPPER SCHOOL EXAMS	Lower learners can:	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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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	Higher learners can:	<ul style="list-style-type: none"> ➤ 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 in detail ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 	<ul style="list-style-type: none"> ➤ 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 ➤ 	<ul style="list-style-type: none"> ➤ 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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YEAR 9 & YEAR 10 & YEAR 11 UPPER SCHOOL- EXAMS	No Theme	Biology: Environment, Evolution & Inheritance	Biology: Environment, Evolution & Inheritance Chemistry: Elements, Mixtures & Compounds	Chemistry: Elements, Mixtures & Compounds Physics: Energy, Forces & States of Matter	Physics: Energy, Forces & States of Matter	Biology Enrichment Chemistry Enrichment	Chemistry Enrichment Physics Enrichment
	Lower learners can:	<ul style="list-style-type: none"> ➤ Describe photosynthesis. and identify the stages. Describe plants and animals adaptations to their environments ➤ Describe how people use artificial selection with plants /animals. ➤ Describe the cell nucleus, containing DNA and chromosomes ➤ Describe food chains /webs, and link decay to photosynthesis. Describe the link between decay, carbon, and photosynthesis ➤ Describe plant competition for light, space, water and nutrients. Describe animal competition for food, mates and territory ➤ Describe ways animals and plants cope with environmental change. Describe types of pollution (in water, air, land) and their effects ➤ Give reasons people cause pollution and use resources. Describe evolutionary theory and natural selection ➤ Describe sexual and asexual reproduction, and genetic mixing 	Biology <ul style="list-style-type: none"> ➤ Describe chromosomes and 'genetic engineering' possibilities Chemistry <ul style="list-style-type: none"> ➤ Describe atoms, elements, metals and non-metals, and periodic table. Describe different types of compounds and understand word equations ➤ Describe reactions between metals and non-metals to produce oxides. Describe states of matter and processes where substances change state ➤ Describe graphite and diamond and identify similarities and differences. Describe filtration, distillation, crystallisation, chromatography ➤ Describe reactive and unreactive metals, and processes to separate metals. Identify environmental, social and economic issues related to metal mining 	Chemistry <ul style="list-style-type: none"> ➤ Describe examples of metals and their properties, linking to atom structure. Describe examples of alloys and identify their uses ➤ Describe examples of polymers, identify their properties and uses. ➤ Give problems and benefits related to polymers not being biodegradable Physics <ul style="list-style-type: none"> ➤ Describe energy storage, transfer, wastage, and efficiency, including thermal energy conduction/ insulation ➤ Identify renewable and non-renewable energy sources ➤ Describe forces (push and pull, contact and non-contact) and factors related to their movement, including how friction can produce heat 	Physics <ul style="list-style-type: none"> ➤ Measurement and calculation of speed, identify factors affecting stopping distances ➤ Identify and describe factors affecting human reaction times when stopping ➤ Identify and describe factors affecting braking ➤ Describe unstable atomic nuclei, ionising radiation, and radioactive decay ➤ Describe alpha / beta particles, gamma rays, their properties, uses, and dangers 	Biology <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ How does my body work? ○ Healthy lifestyles and the modern age ○ London and its wildlife ○ Favourite animal and current habitat ○ Genes and their affect on the body Chemistry <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ Chemicals and everyday use ○ Most Useful Chemicals ○ Most Dangerous chemics 	Chemistry <ul style="list-style-type: none"> ➤ Complete project Physics <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ Electrical safety ○ Sound waves and their sources ○ Forces and magnetism on Earth

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	Higher learners can:	<ul style="list-style-type: none"> ➤ Explain photosynthesis, role of the sun. Explain organisms' adaptations and why they promote survival. ➤ Explain how ecosystems rely on producers and micro-organisms. Explain how carbon dioxide released by decay is used by plants. ➤ Explain how competition between plants affects growth. ➤ Explain how animal competition affects survival and breeding. ➤ Explain how living and non-living factors change environments. Explain effects of different types of pollution on living things ➤ Explain how a nucleus controls the cell, and genetic transmission: ➤ Explain how artificial selection is used to promote specific traits. ➤ Explain genetic outcomes of sexual and asexual reproduction ➤ Explain how population growth affects natural environments. Explain how natural selection made simple life more complex 	<p>Biology</p> <ul style="list-style-type: none"> ➤ Explain risks and benefits of genetic engineering <p>Chemistry</p> <ul style="list-style-type: none"> ➤ Explain organisation of elements on the periodic table. Understand and write word equations involving compounds ➤ Write word equations where oxides are produced. explain how particles change when substances change state ➤ Compare diamond and graphite referring to different structures. Explain filtration, distillation, crystallisation, separation e.g. in paper chromatography ➤ Explain processes used to separate metals from ores ➤ Explain economic and environmental issues with metal recycling 	<p>Chemistry</p> <ul style="list-style-type: none"> ➤ Explain how atomic structures of different metals make them useful to us. Explain why alloys are often more useful to us than pure metals ➤ Explain why structures of polymers make them useful to us. ➤ Explain why polymers are not biodegradable and problems/ benefits <p>Physics</p> <ul style="list-style-type: none"> ➤ Explain energy storage, transfer, wastage, and efficiency, including thermal energy conduction/ insulation ➤ Explain differences between types of energy sources ➤ Explain different types of forces, and effects (e.g. heat from friction) 	<p>Physics</p> <ul style="list-style-type: none"> ➤ Measurement and calculation of speed, explain factors affecting stopping distances ➤ Explain factors affecting human reaction times when stopping ➤ Explain factors affecting braking and apply to examples in detail ➤ Explain how unstable atomic nuclei create ionising radiation and radioactive decay ➤ Explain the uses, properties and dangers of each type of radiation 	<p>Biology</p> <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ How does my body work? ○ Healthy lifestyles and the modern age ○ London and its wildlife ○ Favourite animal and current habitat ○ Genes and their affect on the body <p>Chemistry</p> <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ Chemicals and everyday use ○ Most Useful Chemicals ○ Most Dangerous chemics 	<p>Chemistry</p> <ul style="list-style-type: none"> ➤ Complete project <p>Physics</p> <ul style="list-style-type: none"> ➤ Research, create, and complete a presentation on a Biology topic of your choice. Suggestions are: <ul style="list-style-type: none"> ○ Electrical safety ○ Sound waves and their sources ○ Forces and magnetism on Earth