

| | | AUTUMN 1 | AUTUMN 2 | SPRING 1 | SPRING 2 | SUMMER 1 | SUMMER 2 |
|---|-----------------------------------|---|---|--|---|--|--|
| <i>Themes</i> | | CHANGE: WHERE IM FROM AND WHERE IM GOING | THE ENTERTAINMENT INDUSTRY | HEALTH AND DISEASE | THE MEDIA | DEMOCRACY | CULTURE |
| | | Biology | Biology | Chemistry | Chemistry | Physics | Physics |
| YEAR 7 & YEAR 8 LOWER SCHOOL | Lower theme learners can: | <ul style="list-style-type: none"> ➤ Define a life cycle ➤ Define puberty ➤ Identify points of the ageing process ➤ Define body clock | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Create an information poster about getting vaccinations ➤ Create a sensory poster on the benefits of medicine ➤ Role play – working as a health professional | <ul style="list-style-type: none"> ➤ Role play – STEM hero ➤ Record a chemistry experiment ➤ Role play – science and social media | <ul style="list-style-type: none"> ➤ Sensory experiment – matching sounds or objects ➤ Explore different types of forces ➤ Sensory experiment – explore different materials | <ul style="list-style-type: none"> ➤ Sensory experiment – exploring colour ➤ Explore day and night ➤ Sensory experiment – what can you do with different states of matter (solids, liquids and gases) |
| | Higher theme learners can: | <ul style="list-style-type: none"> ➤ Life cycles of humans ➤ Define puberty: men and women ➤ Define physical abilities at different ages and lifestyles ➤ Define body clocks in animals | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Research how are medicine and vaccinations made ➤ Research those who created medicines/vaccination ➤ Research the benefits and impact of vaccinations | <ul style="list-style-type: none"> ➤ Research a STEM hero ➤ Record and edit a video of a chemistry experiment ➤ Create a social media feed/page about a chemistry experiment | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Mixing colour ➤ Explore light and shadows ➤ Compare states of matter (solids, liquids and gases) to people |

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| YEAR 9 & YEAR 10 & YEAR 11 UPPER SCHOOL - PREPARING FOR ADULTHOOD | 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 Physics |
| | Lower theme learners can: | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Investigate man –made and natural materials ➤ Explore the 5 human senses ➤ Experiment- investigate changes of state ➤ Explore surface temperatures of different household materials | <ul style="list-style-type: none"> ➤ Explore different types of energy ➤ Explore different materials used in transport ➤ Identify qualities that make something 'Green' | <ul style="list-style-type: none"> ➤ 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? | <ul style="list-style-type: none"> ➤ Investigate changes of state (ice /water/tea at a café!) ➤ Explore the relationship between temperature and drink mixtures ➤ Investigate electricity in the workplace | <ul style="list-style-type: none"> ➤ Research a Physician role ➤ Role play: Scientists at work with electricity ➤ Participate in a science fair |
| | Higher theme learners can: | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ Explore how energy is converted ➤ Explore how materials can be manipulated ➤ Research efficiency of different modes of transport | <ul style="list-style-type: none"> ➤ 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? | <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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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| YEAR 9 & YEAR 10 & YEAR 11 UPPER SCHOOL- EXAMS | <i>No Theme</i> | Biology: Plan for Human Body | 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 |
| | Lower learners can: | Biology <ul style="list-style-type: none"> ➤ 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 | Biology <ul style="list-style-type: none"> ➤ 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 <ul style="list-style-type: none"> ➤ 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 | Chemistry <ul style="list-style-type: none"> ➤ 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 <ul style="list-style-type: none"> ➤ 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 | Physics <ul style="list-style-type: none"> ➤ 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 | Chemistry <ul style="list-style-type: none"> ➤ Complete revision and prepare for final exam and TDA ➤ Wrap-up, revision, experimentation Exams | <ul style="list-style-type: none"> ➤ Design own science experiment ➤ Class Science Fair |

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| Higher learners can: | <p>Biology</p> <ul style="list-style-type: none"> ➤ 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 | <ul style="list-style-type: none"> ➤ 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 <p>Chemistry</p> <ul style="list-style-type: none"> ➤ Explain hydrochloric acid produces chlorides, sulphuric acid produces sulphates, and how 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) | <p>Chemistry</p> <ul style="list-style-type: none"> ➤ 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) <p>Physics</p> <ul style="list-style-type: none"> ➤ Explain measurement of electrical flow around a circuit ➤ Explain why circuits must be complete, and why the UK has AC mains electricity ➤ Explain functions of plug components, and fuses, wire a plug, select suitable fuse | <p>Physics</p> <ul style="list-style-type: none"> ➤ 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 | <p>Chemistry</p> <ul style="list-style-type: none"> ➤ Complete revision and prepare for final exam and TDA ➤ Wrap-up, revision, experimentation <p>Exams</p> | <ul style="list-style-type: none"> ➤ Design own science experiment ➤ Class Science Fair |