



Science Long Term Overview

KS4- ELC 2 Year Course

Year 1 2021-2022

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| Autumn 1 | 1st Sep 21 | 6th Sep 21 | 13th Sep 21 | 20th Sep 21 | 27th Sep 21 | 4th Oct 21 | 11th Oct 21 | 18th Oct 21 | |
| | <i>Baselines</i> | <i>Biology- The Human Body</i> | | | | | | | |
| | | What is the body made of? | | | | How the body works | | | |
| | | Cell structure/ cell specialism | Tissues/organs | The circulatory system | The digestive system | Respiration | Healthy/ unhealthy lifestyles | Exercise | |
| Autumn 2 | 1st Nov 21 | 8th Nov 21 | 15th Nov 21 | 22nd Nov 21 | 29th Nov 21 | 6th Dec 21 | 13th Dec 21 | | |
| | <i>How the body fights diseases</i> | | | | | | | | |
| | How the body fights diseases | | | | How the body is co-ordinated | | | | |
| | Infectious diseases | White blood cells | Vaccinations | Medical drug testing/ antibiotics | Automatic response systems | Reflex actions | Hormones/ controlling fertility | | |
| Spring 1 | 4th Jan 22 | 10th Jan 22 | 17th Jan 22 | 24th Jan 22 | 31st Jan 22 | 7th Feb 22 | 14th Feb 22 | | |
| | <i>Physics- Electricity, Magnetism and Waves</i> | | | | | | | | |
| | Electrical current | | Domestic electricity | | | Magnetism and electromagnetism | Different types of waves | | |
| | Electrical current/voltage/ resistance | Circuits/ alternating current | Three core flex cable and plug wiring/ fuses and safety | How domestic supply compares with batteries/ cost of electricity | Energy transfer in appliances/ energy transfer calculations | Magnetic poles and fields/ electromagnets | Transverse and longitudinal waves/amplitude , wavelength and frequency | | |
| Spring 2 | 28th Feb 22 | 7th Mar 22 | 14th Mar 22 | 21st Mar 22 | 28th Mar 22 | 4th Apr 22 | | | |
| | <i>(Cont.)</i> | <i>Chemistry- Elements, Mixtures and Compounds</i> | | | | | | | |
| | <i>Electromagnetic waves</i> | Atoms, elements and compounds | | How structure affects properties | Separating mixtures | | | | |
| | Electromagnetic spectrum/ Electromagnetic wave applications | Atoms/elements /periodic table | Compounds/ word equations | States of matter/diamond and graphite | Mixtures | Chromatography | | | |

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| Summer 1 | 25th Apr 22 | 2nd May 22 | 9th May 22 | 16th May 22 | 23rd May 22 | | | | |
| | <i>Chemistry- Elements, Mixtures and Compounds (Cont.)</i> | | | <i>Biology- Environment, Evolution and Inheritance</i> | | | | | |
| | <i>Metals and alloys</i> | | <i>Polymers</i> | What are the feeding relationships between living organisms? | | | | | |
| | Unreactive metals and metal ores/ recycling metals | Properties of metals/ alloys | Polymer examples and properties | Photosynthesis | Adaptations of animals | | | | |
| Summer 2 | 6th Jun 22 | 13th Jun 22 | 20th Jun 22 | 27th Jun 22 | 4th Jul 22 | 11th Jul 22 | 18th Jul 22 | | |
| | <i>Biology- Environment, Evolution and Inheritance (Cont.)</i> | | | | | | | | |
| | What are the feeding relationships between living organisms? (Cont.) | | | What determines where particular species live? | | | | | |
| | Food chains and webs | | Decay | Animal and plant competition | | | | | |
| Year 2 2021-2022 | | | | | | | | | |
| Autumn 1 | 1st Sep 21 | 6th Sep 21 | 13th Sep 21 | 20th Sep 21 | 27th Sep 21 | 4th Oct 21 | 11th Oct 21 | 18th Oct 21 | |
| | <i>Biology- Environment, Evolution and Inheritance</i> | | | | | | | | |
| | What determines where particular species live? | | How has life developed on earth? | | | | | | |
| | Environmental changes | Pollution | Evolution | Natural selection/ artificial selection | Sexual and asexual reproduction | DNA | Chromosomes/ genetic engineering | Chemistry- Chemistry in our world | Reactions of acids |
| Autumn 2 | 1st Nov 21 | 8th Nov 21 | 15th Nov 21 | 22nd Nov 21 | 29th Nov 21 | 6th Dec 21 | 13th Dec 21 | | |
| | <i>Chemistry- Chemistry in our world (cont.)</i> | | | | | | | | |
| | Energy and rate of reaction | | | Earth's atmosphere | | | | | |
| | Acid, alkali and bases reaction | Crystallising salt | Reactions releasing energy | Reactions requiring energy | Rate of reactions | Earth's early atmosphere/ photosynthesis | Decreasing carbon dioxide/ Earth's atmosphere now | | |
| Spring 1 | 4th Jan 22 | 10th Jan 22 | 17th Jan 22 | 24th Jan 22 | 31st Jan 22 | 7th Feb 22 | 14th Feb 22 | | |
| | <i>Chemistry- Chemistry In Our World (cont.)</i> | | | | | | <i>Physics- Energy, Forces and the Structure of Matter</i> | | |
| | Fuels and human impact on the atmosphere | | | | Water for drinking | | Energy, energy transfers and energy resources | | |

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| | Crude oil | Fractional distillation | Fuel combustion | Greenhouse gases | Tap water | Producing safe water | Energy stores | |
| Spring 2 | 28th Feb 22 | 7th Mar 22 | 14th Mar 22 | 21st Mar 22 | 28th Mar 22 | 4th Apr 22 | | |
| | <i>Physics- Energy, Forces and the Structure of Matter (cont.)</i> | | | | | | | |
| | Energy, energy transfers and energy resources (cont.) | | | Forces and work | | Speed and stopping distances | | |
| | Energy transfers | Energy efficiency/ thermal conductivity | Renewable and non-renewable resources | Contact and non-contact forces | Work done | Speed/ stopping distances | | |
| Summer 1 | 25th Apr 22 | 2nd May 22 | 9th May 22 | 16th May 22 | 23rd May 22 | | | |
| | <i>Physics- Energy, Forces and the Structure of Matter (cont.)</i> | | | <i>Biology-Ecology</i> | | | | |
| | Speed and stopping distances (cont.) | | Atoms and nuclear radiation | Adaptations, interdependence and competition | | | | |
| | Reaction time | Braking distance | Alpha, beta and gamma radiation | Communities | Biotic and abiotic factors | | | |
| Summer 2 | 6th Jun 22 | 13th Jun 22 | 20th Jun 22 | 27th Jun 22 | 4th Jul 22 | 11th Jul 22 | 18th Jul 22 | |
| | <i>Biology- Ecology (cont.)</i> | | | | | | | |
| | (Cont.) | Organisation of an ecosystem | Trophic levels in an ecosystem | | | How materials are recycled | | |
| | Adaptations | Levels of organisation | Producers, consumers and decomposers | Trophic levels and pyramids of biomass | Food chains | The water, decay and carbon cycles | Factors effecting decomposition/ aerobic and anaerobic decay | |