

## Year 10 – Part 1

<i>10.1 Atoms &amp; Radioactivity</i>	<i>10.2 Bioenergetics and Plant Organisation</i>	<i>10.3 Electricity &amp; Energy</i>	<i>10.4 Infection</i>	<i>10.5 Energy Changes</i>	<i>10.6 Rates of Reaction</i>
Isotopes and abundance Marie Curie Types of Radiation Atomic models Rutherford's model Changes in the nucleus Half-life Calculating half-life Dangers of Radiation Uses of Radiation <i>Radiation in medicine (triple only)</i> <i>Nuclear fission (triple only)</i> <i>Nuclear fusion (triple only)</i> <i>Nuclear issues (triple only)</i>	Differentiation & specialisation Specialised plant cells Plant tissues and organs Osmosis in plants Transport in plants Evaporation and transportation  Photosynthesis Storing glucose Aerobic respiration Anaerobic respiration	Energy stores Energy equations Energy resources Nuclear fuels Electrical charges Current & voltage Series and parallel Ohm's Law Resistance Power calculations Energy in circuits Efficiency of appliances	Prokaryotes Communicable disease Bacteria <i>Growing bacteria (triple only)</i> Viruses Protists Fungi Spreading disease Preventing disease Discovery of medicines <i>Monoclonal antibodies (triple only)</i> Human defence mechanisms Antibiotics & painkillers Antibiotic resistance Vaccinations <i>Plant disease (triple only)</i> <i>Plant defence responses (triple only)</i>	Endothermic and exothermic reactions Using energy transfers Reaction profiles Bond energies (H) <i>Chemical cells and batteries (triple only)</i> <i>Fuel cells (triple only)</i>	Collision theory Rates of reaction Rates and temperature Rates and concentration Catalysts Reversible reactions Energy in reversible reactions Dynamic equilibrium (H) <i>Haber process (triple only)</i> <i>Making fertilisers (triple only)</i> Altering conditions (H)

## Year 10 – Part 2

<i>10.7 Forces</i>	<i>10.8 Inheritance and Genes</i>	<i>10.9 Organic Chemistry &amp; Analysis</i>	<i>10.10 Cycles &amp; Ecosystems</i>
S-D time graphs Velocity and acceleration V-T graphs Vectors and scalars Contact & non-contact forces Force and acceleration and Newton's Law of motion Resultant force Parallelogram of forces (H) Resolution of forces (H) Weight and terminal velocity Hooke's Law Centre of mass Moments and equilibrium <i>Moments (triple only)</i> <i>Levers and gears (triple only)</i> Forces and braking <i>Momentum (triple only)</i> <i>Conservation of Momentum (triple only)</i> <i>Impact forces (triple only)</i> <i>Safety &amp; forces (triple only)</i>	Types of reproduction Mitosis & meiosis Stem cells <i>Reproduction in fungi &amp; protists (triple only)</i> DNA and the genome <i>DNA structure &amp; protein synthesis (triple only)</i> <i>Gene expression &amp; mutation (triple only)</i> Gregor Mendel & monohybrid inheritance Variation Punnett squares  Selective breeding Pedigree diagrams & sex determination Genetic disorders Ethics of genetic technology Genetic engineering Biotechnology and GM crops <i>Cloning (triple only)</i>	Hydrocarbons Fractional distillation Burning fuels Carbon Footprint Cracking Polymers <i>Alkenes (triple only)</i> <i>Alcohols, carboxylic acids, and esters (triple only)</i> <i>Reactions &amp; uses of alcohol (triple only)</i> <i>Carboxylic acids &amp; esters (triple only)</i>  <i>Polymers (triple only)</i> <i>Polymerization (triple only)</i> <i>DNA &amp; natural polymers (triple only)</i>	Carbon Cycle Communities Abiotic and Biotic factors Quadrats Competition in plants Competition in animals Adaptations Feeding relationships <i>Trophic levels (triple only)</i> <i>Biomass transfer (triple only)</i> <i>Food security (triple only)</i> <i>Farming &amp; sustainability (triple only)</i> Materials cycling <i>Decomposition (triple only)</i> Water cycling Treating water Recycling Life cycle assessments

## Year 11 – Part 1

<i>11.1 Waves</i>	<i>11.2 Evolution</i>	<i>11.3 Atmosphere &amp; Resources</i>	<i>11.4a Magnets &amp; Electromagnets</i>
Types of waves Describing waves Waves & calculations <i>Reflection &amp; refraction (triple only)</i> Sound waves <i>Sound waves (triple only)</i> <i>Ultrasound (triple only)</i> <i>Seismic waves (triple only)</i>  Electromagnetic spectrum Long wavelength waves & communication <i>Infrared radiation (triple only)</i> <i>More about infrared radiation (triple only)</i> Short wavelength waves Short wavelength waves & medicine  <i>Visible light (triple only)</i> <i>Refraction (triple only)</i> <i>Light &amp; colour (triple only)</i> <i>Lenses (triple only)</i> <i>Using lenses (triple only)</i>	Natural selection & Darwin Natural selection in bacteria (AB resistance) Species & hybrids <i>Speciation (triple only)</i> Classification  <i>Theories of evolution (triple only)</i> Evidence for evolution Fossils Extinction Dinosaurs and extinction	Early Earth Earth today Human population Greenhouse gases & humans Global warming Deforestation & peat destruction Maintaining biodiversity Pollutants Water pollution Climate change <i>Impact of environmental changes (triple only)</i>  Finite and renewable resources Energy resources Metals from ores (H) Metals in the crust Alternative metal extraction (H) <i>Rusting (triple only)</i> <i>Alloys (triple only)</i> <i>Polymers (triple only)</i> <i>Ceramics &amp; composites (triple only)</i>	Magnetic fields Electromagnets and their uses Motor effect (H) <i>Generator effects (triple only)</i> <i>Alternating current generator (triple only)</i> <i>Microphones and loud speakers (triple only)</i> <i>Transformers (triple only)</i> <i>Static electricity (triple only)</i> <i>Electric Fields (triple)</i>  <b><i>11.4b Space</i></b>  <i>Start of the universe (triple only)</i> <i>Formation of the solar system (triple only)</i> <i>Planets, satellites, and orbits (triple only)</i> <i>History of a star (triple only)</i> <i>Expanding universe (triple only)</i>

## Year 11 – Part 2

<i>11.5 Homeostasis</i>	<i>Assessment Schedule</i>
Nervous system Neurones Reflexes <i>The Brain (triple only)</i> <i>The eye (triple only)</i> <i>Problems with the eye (triple only)</i> Principles of homeostasis & negative feedback Hormonal control & the endocrine system Thermoregulation <i>The kidney &amp; dialysis (triple only)</i> <i>Kidney transplants (triple only)</i> <i>Removing waste products (triple only)</i> Glucoregulation Type 1 diabetes Human reproduction Hormones and menstrual cycle (H) Artificial fertility (H) & IVF (H) <i>Tropisms and auxins (triple only)</i>	(This cell is currently empty)

