

Curriculum Overview for Year 7 in Science (NEW COURSE)

Year 7 Assessment point 1: end of topic formative assessment at end of unit, Term 1 test week 5th December Year 7 Assessment point 2: end of topic formative assessment at end of unit, Term 1 test week 22nd March Year 7 Assessment point 3: end of topic formative assessment at end of unit, Term 1 test week 16th July Date of Interim Assessment: dates of assessment week Date of Masters Assessment: date of assessment week

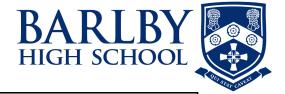
| Half Term | 5th September - 21st October | 31st October - 16th December | 3rd January - 10th February | 20th February - 31st March | 17th April - 26th May | 5th June - 25th July |
|---|---|---------------------------------|--|--|--|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Knowledge and skills which will be covered this year Practical and investigative work is taught within the content, | Introduction and Safety Laboratory design, safety and equipment Assessing risks Selecting equipment for a task Using a Bunsen Measuring techniques | How animals in | Electricity Revise: conductors and insulators What makes a circuit? Components in circuits, series and parallel circuits Resistance in circuits Electrical safety | Acids and alkalis, metals and non-metals Chemical changes (reactions) Acid properties Alkalis and bases Investigating acid reactions- indigestion remedies Neutralisation and making salts Oxidation reactions Metals and | Waves Sound waves behaviour and speed Sound and vibrations Pitch and loudness Hearing and the ear Light- uses and differences to sound Investigating reflection and refraction | Earth and Space/Universe The structure of the Earth Rock types Rock erosion and weathering The rock cycle The night sky Solar system and the planets Earth movement in space- rotation and orbit of planets Moons and |



| students will also build on numeracy and literacy skills through the science curriculum | • | Particle model and particle arrangement in solids, liquids and gases Changing state- melting, freezing, evaporation and boiling Diffusion Expansion and contraction Gas pressure Pure and impure substances Solubility and solutions Filtration, distillation and chromatography as separating techniques. | habitats and organisms. | Reproduction and Variation Variation within a species- continuous and discontinuous variation Adaptations Animal reproduction- reproductive structures, adolescence, functional changes in the body at puberty Menstruation and fertilisation Foetus development Reproduction in plants | | non-metals properties and differences • Reacting metals with acids and water • Displacement reactions- metals in 'competition' Science week activities and enrichment End of term 2 assessment | Colour The eye and sight Speed and Gravity Ideas about forces Balanced and unbalanced forces Investigating motion Motion graphs Gravity on Earth, planets and the Moon Weight and mass | and ideas Cells and Movement Levels of |
|---|---|---|-------------------------|---|--|---|--|--|
|---|---|---|-------------------------|---|--|---|--|--|

Curriculum Overview for Year 8 in Science (NEW COURSE)

Year 8 Assessment point 1: end of topic formative assessment at end of unit, Term 1 test week 5th December Year 8 Assessment point 2: end of topic formative assessment at end of unit, Term 1 test week 22nd March Year 8 Assessment point 3: end of topic formative assessment at end of unit, Term 1 test week 16th July



Date of Interim Assessment: dates of assessment week Date of Masters Assessment: date of assessment week

| Half Term | 5th September - 21st October | 31st October - 16th December | 3rd January - 10th February | 20th February - 31st March | 17th April - 26th May | 5th June - 25th July |
|--|---|---|--|--|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Knowledge and skills which will be covered this year Practical and investigative work is taught within the content, students will also build on numeracy and literacy skills through the science curriculum | Forces and pressure Contact forces and their effects Balanced and unbalanced forces Investigating stretching and tensile forces Pressure Using the pressure equation P=F/A Atmospheric pressure and pressure in fluids Hydraulic systems Turning forces | Breathing and digestion Gas exchange Investigating exercise and breathing rate Effect of drugs and alcohol on the body Impact of smoking Diet and nutrition Deficient diets The digestive system Substances involved in digestion | Reactions and Chemical Energy Physical and chemical changes Particle behaviour in reactions Combustion reactions and burning fuels Thermal decomposition Limestone- reactions and uses Mass in reactions Reaction energy Investigating energy in | Evolution and Inheritance Charles Darwin and his evolution theory Extinction of species and threats to biodiversity Preserving biodiversity Inheritance DNA and genetics, DNA discovery Using genetic science Project- biodiversity research 'the butterflies and | Magnetism Magnets and fields Using magnets and fields Investigating magnetism Electromagnets Making electromagnets Electromagnets in devices Motors and the motor effect- project building a motor | Investigative and enrichment project work based on cognitive science. End of Year 8 assessment window |



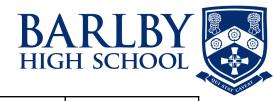


Curriculum Overview for Year 9 in Science NEW COURSE

Year 9 Assessment point 1: end of topic formative assessment at end of unit, Term 1 test week 5th December Year 9 Assessment point 2: end of topic formative assessment at end of unit, Term 1 test week 22nd March Year 9 Assessment point 3: end of topic formative assessment at end of unit, Term 1 test week 16th July

Date of Formative Assessment: dates of assessment week Date of Summative Assessment: date of assessment week

| Half Term | 5th September - 21st October | 31st October - 16th December | 3rd January - 10th February | 20th February - 31st March | 17th April - 26th May | 5th June - 25th July |
|---|---|--|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Knowledge and skills which will be covered this year Practical and investigative work is taught within | accuracy Measuring large and small Timing methods | Heat transfer mechanisms in conduction and convection Investigating | Y9 Environmental chemistry Pollution in the environment Extraction of metals Recycling and reuse Aluminium- the modern metal | Y9 Biology Cells and Life Cell structure and function in plants and animals Prokaryotic and eukaryotic cells Measuring cells and | Cells (cont) Aerobic and anaerobic respiration in humans Anaerobic respiration in microorganism s (yeast) | Preparation for key stage assessment End of term 3 assessment STEM project and enrichment |



| the content, students will also build on numeracy and literacy skills through the science curriculum | safely and measuring the effects Measuring volumes Measurements in reactions Measuring mass in reactions Classification Investigation: carbonate ores Y9 Energy Considerations The future of renewable energies 21st century energy demands Power and energy Saving energy- preserving finite energy resources Work done and machines- levers and pulleys | transfer Reducing heat loss-explaining how methods work Eco homes and future transport End of term 1 assessment | Global warming and the greenhouse effect The carbon cycle Effects of climate change Hydrogen and alternative fuels Comparing fuels Making and using plastics Plastic problems Cleaning the environment Project: Clean up Evolution of the atmosphere | | Y9 Waves and Radiation Transverse and longitudinal waves Wave characteristics and behaviour Amplitude, frequency and wavelength of waves Calculating wave speed Electromagnetic waves and their general behaviour Using light: devices and lenses | |
|---|--|--|---|--|---|--|
|---|--|--|---|--|---|--|



Curriculum Overview for Year 10 in Science (LEGACY COURSE)

Year 10 Assessment point 1: wc 10th October unit assessments and wc 12th December termly assessment Year 10 Assessment point 2: wc 27th March termly assessment Year 10 Assessment point 3: term 3 assessments as per calendar

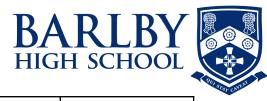
Date of Assessment: dates of assessment week Date of Mock Assessment: date of assessment week

| Half Term | 5th September - 21st October | 31st October - 16th December | 3rd January - 10th February | 20th February - 31st March | 17th April - 26th May | 5th June - 25th July |
|-----------|--|--|--|--|--|-------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| AQA GCSE | <u>Bioenergetics</u> Photosynthesis: reaction and | <u>Homeostasis</u> Maintaining stable conditions in the | Atomic structure and radioactivity Models of the | Chemical changes and energy changes Acids, bases and | Ecology Competition for resources | Complete Forces |



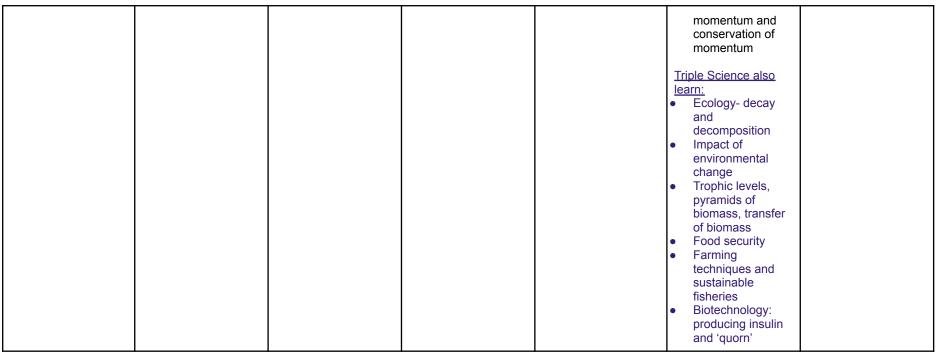
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| Combined | products, how | body, negative | atom and | neutralisation | enabling survival | Revision strategies |
| Science 8464 | plants use glucose | feedback | development of | reactions | Interdependence | and prep for exams |
| | | The nervous | this | Strong acids and | and effects on | |
| AQA GCSE | the rate of | system: how the | • Atom and nucleus | bases: behaviour | populations | |
| | photosynthesis | CNS co-ordinates | size and structure | and reactions, pH | Biotic and abiotic | Year 10 MOCK |
| Biology 8461 | Investigating | a response | Radioactive decay | | factors | EXAMS 3 WEEK |
| Chemistry 8462 | photosynthesis | Synapses and | and types of | and insoluble salts | How adaptations | WINDOW |
| Physics 8464 | Using the inverse | reflexes | radiation, isotopes | in reactions | allow organisms to | |
| | square law | Investigating | Using nuclear | Metals and their | survive | Post exam analysis |
| | Artificial conditions | factors affecting | equations to show | reactions: the | Population cycles- | and feedback |
| Knowledge and | for plant growth | responses: | decay | reactivity series | links to | |
| skills which will be | Respiration in | reaction time | Irradiation and | Reduction and | interdependence | |
| covered this year | animals, | The endocrine | contamination: | oxidation, | Investigating | Year 11 skills |
| , | metabolism and | system and key | dangers and uses | extraction of | distributions of | preparation |
| | the reactions that | glands | of radiation | metals from metal | organisms in | |
| | are involved | Controlling blood | Half life and | oxides | habitats <i>Field trip</i> | |
| Practical and | Anaerobic | glucose and | calculations, use | Redox reactions | work | |
| investigative work | respiration in | diabetes | of half life graphs | Electrolysis and | Water and carbon | |
| is taught within | animals and | Puberty, | | predicting | cycles | |
| • | plants/yeast | hormones and the | Waves | products formed | Biodiversity: the | |
| the content, | Effects of exercise | menstrual cycle | Wave types: | at electrodes | importance of | |
| students will also | on the body: | Hormones | transverse and | Exothermic and | biodiversity | |
| build on | investigating and | involved in female | longitudinal, | endothermic | Demands on | |
| numeracy and | measuring | fertility, control of | mechanical and | reactions: how to | environments from | |
| literacy skills | | fertility | electromagnetic | investigate energy | population | |
| 2 | Quantitative chemistry | Adrenaline and | Investigating wave | changes in | increase | |
| through the | Calculating | thyroxine | behaviour: | reactions | Human effects on | |
| science | relative formula | | refraction, | Reaction profile | the environment: | |
| curriculum | mass | Electricity | reflection, | diagrams and | global warming, | |
| | Percentage mass | Series and parallel | diffraction, | bond energy | deforestation and | |
| | of an element in a | circuits, circuit | absorption | calculations | land use | |
| | compound | diagrams and | The wave | | How can we | |
| | The mole: using | constructing | equation | Triple science also | protect | |
| | mole calculations | circuits. | Electromagnetic | learn: | ecosystems and | |
| | to calculate | Calculations | spectrum: uses | Titration methods | protect | |
| | amounts involved | involving current | and dangers | and calculations | biodiversity? | |
| | in reactions | Investigating | | Fuel cells and | | |
| | Conservation of | resistance in | Triple science also | batteries | Forces | |
| | mass in reactions | circuits | learn: | | Contact and | |
| | Limiting reactants | IV characteristics | Half lives of | | non-contact | |
| | Concentration: | for resistors, | different | Assessment | forces, scalar and | |
| 1 | calculations and | diodes and | radioactive | preparation | vector quantities | |



| units filament lamps isotopes in physics. Triple science also learn: - Percentage yield in reactions - Curren, pd and resistance rules' in circuits. find the missing values - Nuclear fusion - Weight, mass and gravity • Atom economy - Calculating concentration in mol/dm ³ - Domestic - Waves for detection and exploration. - Resultant forces: work dow when a resultant force • Reactions - Domestic - Domestic - Domestic - Reactions - Domestic - Domestic - Reactions - Power and energy calculation store gas volumes - Power and energy calculations for a splances - Resolving forces • Reactions - Power and energy calculation store gas volumes - Domestic ecoluciation using P.E.C.I.V.Wt - National grid and transformers - Resolving forces • Triple science also learn: - Triple science also learn: - Triple science also learn: - Natural and function - Orbital motion - Resolving forces • The eye: structure and function - The train: structure and function - The eye: structure and function - Red shift and electricity and from F=ma - Natural and antificial statellites - Natural energy stored in support the Big bang theory • Static charge related to electricity - Static charge related to - Red shift and electricity election balance in the body (the kidneys) - Red shift and from F=ma < | | | | | | 1 | | | , |
|---|---------|--|--|---|---|---|---|--|-------|
| Plant defences Biotechnology- mycoprotein and Stopping distances and reaction times are important | le • | Triple science also earn: Percentage yield in reactions Atom economy Calculating concentration in mol/dm^3 Reactions involving gases: calculating using gas volumes | Components in sensing circuits Curren, pd and resistance 'rules' in circuits: find the missing values Domestic electricity supplies and safety Power and energy calculations for appliances Calculations using P,E,Q,I,V,W,t National grid and transformers Triple science also learn: The brain: structure and function The eye: structure and function Maintaining water and nitrogen balance in the body (the kidneys) Static charge related to electricity Electric fields Monoclonal antibodies Drug development and testing Plant defences Biotechnology- | • | Nuclear fission Nuclear fusion Sound waves Waves for detection and exploration Lenses and visible light- optics IR,perfect black bodies and radiation Space physics:our solar system Life cycle of stars-difference between stars Orbital motion Natural and artificial satellites Red shift and evidence to support the Big | | • | Weight, mass and gravity Resultant forces: work done when a resultant force moves an object Use scale diagrams to represent and calculate resultant forces Resolving forces Elasticity and Hooke's law Mathematical relationships: elasticity and energy stored in springs Motion: distance, displacement, speed and velocity Acceleration: calculating accn as rate of change of velocity and from F=ma Representing motion in graphical form Newtons laws Terminal velocity Investigating how mass and force affect acceleration Road safety: how stopping distances and reaction times | |





Curriculum Overview for Year 11 in Science (LEGACY COURSE)

Year 11 Assessment point 1: end November mock 1 point, end of unit tests prior to this Year 11 Assessment point 2: end of unit formative tests then wc 1st March Year 11 Assessment point 3: end of unit tests plus practice papers end April

Date of summative Assessments: Date of Mock Assessment:



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|--|---|---------------------------------|--|---|---|-------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| AQA GCSE Combined Science 8464 AQA GCSE Biology 8461 Chemistry 8462 Physics 8464 Knowledge and skills which will be covered this year | Ecology Competition for resources enabling survival Interdependence and effects on populations Biotic and abiotic factors How adaptations allow organisms to survive Population cycles- links to interdependence Investigating distributions of organisms in habitats Water and carbon cycles Biodiversity: the importance of biodiversity Demands on environments from population increase Human effects on the environment: global warming, deforestation and | use of fractions obtained | Rate of Chemical change Particle model and behaviour of particles in reaction mechanisms Representing reaction rates in graph forms Factors that affect a reaction rate Methods of investigating reaction rates e.g. disappearing cross, collecting volume of gas per min Analysing results from reaction rates experiments Reversible reactions and equilibrium conditions Le Chatelier's principle:reversibl e reactions and how changes are counteracted | Inheritance, Variation and Evolution DNA, chromosomes and genes Sexual and asexual reproduction in orgaanisms Meiosis : producing gametes Important chromosomes: male and female, genetic diagrams to show possible gamete combinations (probability) Dominant and recessive alleles and genetic disorders Embryo screening and social and moral implications Variations within species:mutations Evolution theories, speciation and extinction | Revision, exam technique and question practice. Exam preparation | |



| Hill prived p | Reactions of alkenes and alcohols Carboxylic acids, alcohols and functional groups Contact and non-contact orces, scalar and reactions Synthetic and naturally occurring polymers (DNA) Identifying ions by chemical and spectroscopic means | particulates, other gases and acid | Selective breeding Genetic engineering and GM crops Fossils and evidence for evolution theories Antibiotic resistant bacteria Classification systems and evolutionary relationships Triple science also |
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| m • UU di re ca fo • R • El H · • M re el er sp • M di sp • Ad ca as | All students- Mocks All students- Mocks All students- Mocks All students- Mocks All students- Mocks All students- Mocks 1 All students- Mocks | rain Natural and finite resources Reuse and recycling of materials and the links to energy issues Life cycle assessments to show environmental costs of products Potable water and how this is produced in different places Waste water treatment Triple also learn: Corrosion of metals | learn: DNA structure Cloning Space physics:our solar system Life cycle of stars-difference between stars Orbital motion Natural and artificial satellites Red shift and evidence to support the Big bang theory |
| as of frœ ● R | | | |



| graphical form | compositos | | |
|--|------------------------|--|--|
| graphical form Newtons laws | composites. Ammonia | | |
| Terminal velocity | production | | |
| Investigating how | | | |
| mass and force | fertiliser | | |
| affect acceleration | production | | |
| Road safety: how | production | | |
| stopping distances | | | |
| and reaction times | | | |
| are important | | | |
| Momentum: | | | |
| calculating | | | |
| momentum and | | | |
| conservation of | | | |
| momentum | | | |
| | | | |
| Triple Science also | | | |
| learn: | | | |
| Ecology- decay | | | |
| and | | | |
| decomposition | | | |
| Impact of | | | |
| environmental | | | |
| change | | | |
| Trophic levels, | | | |
| pyramids of | | | |
| biomass, transfer of biomass | | | |
| | | | |
| Food security Farming | | | |
| techniques and | | | |
| sustainable | | | |
| fisheries | | | |
| Biotechnology: | | | |
| producing insulin | | | |
| and 'quorn' | | | |
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