



THE BIRKENHEAD PARK SCHOOL

Curriculum Plan 2016/2017 – Science

Year	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Year 7	Introduction to Science: (including health and safety) <ul style="list-style-type: none"> • Graph skills • Cells and tissues • Particles 	<ul style="list-style-type: none"> • Energy transfers • Plant reproduction • Heat transfers 	<ul style="list-style-type: none"> • Atoms and elements • Forces and effects • Microbes 	<ul style="list-style-type: none"> • Electricity • Acids and alkalis 	<ul style="list-style-type: none"> • Environment and adaptations • Pure and impure substances 	<ul style="list-style-type: none"> • Animal reproduction • Energy resources • Variation and classification
Year 8	<ul style="list-style-type: none"> • Photosynthesis • Simple chemical reactions • Exploring space 	<ul style="list-style-type: none"> • Magnets and electromagnets • Food and digestion • Innovative materials 	<ul style="list-style-type: none"> • Compounds • Motion 	<ul style="list-style-type: none"> • Lungs and gas exchange • The periodic table 	<ul style="list-style-type: none"> • Domestic and static electricity • Respiration 	<ul style="list-style-type: none"> • Extracting metals • Waves and sound • Light
Year 9	<ul style="list-style-type: none"> • Muscles and bones • Reactions of acids 	<ul style="list-style-type: none"> • Drugs and health • Inheritance and evolution 	<ul style="list-style-type: none"> • Earth and atmosphere • Application of forces 	<ul style="list-style-type: none"> • Transition science unit 	<ul style="list-style-type: none"> • GCSE Science Biology key concepts • GCSE Science Chemistry key concepts • GCSE Science Physics key concepts. 	<ul style="list-style-type: none"> • GCSE Science Biology key concepts • GCSE Science Chemistry key concepts • GCSE Science Physics key concepts



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Year 10	<p>Cell Biology:</p> <ul style="list-style-type: none"> Looking at cells Cell specialisation Stem cells Cancer Microscopy (biology GCSE) <p>Atomic structure:</p> <ul style="list-style-type: none"> Elements and compounds Atomic structure Bonding <p>Energy:</p> <ul style="list-style-type: none"> Energy transfer Energy dissipation Power and work done Reducing energy losses Energy efficiency 	<p>Cell Biology:</p> <ul style="list-style-type: none"> Cell division Respiration <p>Organisation:</p> <ul style="list-style-type: none"> Photosynthesis Leaf structure Transpiration <p>Structure and bonding:</p> <ul style="list-style-type: none"> Giant covalent bonding Metallic bonding Smart materials Nano science <p>Energy:</p> <ul style="list-style-type: none"> Specific heat capacity Energy resources and supplies <p>Particle model:</p> <ul style="list-style-type: none"> Density Changes of state Latent heat 	<p>Organisation:</p> <ul style="list-style-type: none"> Enzymes Digestion Heart Blood <p>Chemical changes:</p> <ul style="list-style-type: none"> Metal oxides and extraction Acids, bases and alkalis Making salts Titrations <p>Electricity:</p> <ul style="list-style-type: none"> Static Current Circuits Circuit components 	<p>Organisation:</p> <ul style="list-style-type: none"> Gas exchange Heart disease <p>Infection and response:</p> <ul style="list-style-type: none"> Pathogens Diseases Protecting the body <p>Chemical changes:</p> <ul style="list-style-type: none"> Electrolysis <p>Energy changes:</p> <ul style="list-style-type: none"> Exothermic and endothermic Energy changes Fuel cells <p>Atoms and radiation:</p> <ul style="list-style-type: none"> Atomic structure Radioactive decay Nuclear equations Half-life 	<p>Infection and response:</p> <ul style="list-style-type: none"> Immunity New drugs <p>Homeostasis:</p> <ul style="list-style-type: none"> Endocrine system Reflex actions <p>The rate and extent of chemical change:</p> <ul style="list-style-type: none"> Rates of reaction Reversible reactions <p>Hydrocarbons:</p> <ul style="list-style-type: none"> Haber process <p>Atoms and radiation:</p> <ul style="list-style-type: none"> Half-life Radioactivity Medial radioactivity 	<p>Homeostasis:</p> <ul style="list-style-type: none"> Blood glucose Negative feedback Human reproduction IVF Contraception <p>Hydrocarbons:</p> <ul style="list-style-type: none"> Crude oil Alkanes Combustion Alkenes Alcohols Polymerisation <p>Forces:</p> <ul style="list-style-type: none"> Speed and distance-time graphs Velocity-time graphs Resultant force and motion Investigating force



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Year 11	<p>Genetics, variation and evolution:</p> <ul style="list-style-type: none"> • DNA • Meiosis • Asexual/sexual reproduction • Genetics <p>Chemical changes:</p> <ul style="list-style-type: none"> • Electrolysis <p>Atomic structure:</p> <ul style="list-style-type: none"> • Periodic table <p>Water:</p> <p>Forces:</p> <ul style="list-style-type: none"> • Newton's Laws of Motion • Momentum • Vehicle safety • Hooke's Law 	<p>Genetics, variation and evolution:</p> <ul style="list-style-type: none"> • Evolution • Fossils • Genetic engineering • The tree of life <p>Energy changes and bond energies:</p> <ul style="list-style-type: none"> • Hydrogen and fuel cells • Chemical tests • Titrations <p>Waves:</p> <ul style="list-style-type: none"> • Wave speed and equation • Reflection • Refraction • Electromagnetic spectrum 	<p>Ecology:</p> <ul style="list-style-type: none"> • Ecosystems • Predator-prey relationship • Adaptation • Carbon cycle <p>Making ammonia and equilibrium:</p> <p>Alcohol carboxylic acids and esters:</p> <ul style="list-style-type: none"> • Waves • Colour <p>Electromagnetism:</p> <ul style="list-style-type: none"> • Magnetism • Compasses • Solenoid magnetic field • Using electromagnets 	<p>Ecology:</p> <ul style="list-style-type: none"> • Land use • Global warming • Pollution • Biodiversity <p>Revision</p> <p>Electromagnetism:</p> <ul style="list-style-type: none"> • Calculating force on a conductor • Electric motors 	Revision	Revision