

Year 7 - 6 lessons per fortnight					
Au1 – 21 lessons (approx.)	Au2 – 21 lessons (approx..)	Sp1 – 18 lessons (approx.)	Sp2 – 18 lessons (approx.)	Su1 – 18 lessons (approx.)	Su2 – 18 lessons (approx.)
<u>Introduction lessons</u> <u>7.1 Introduction to science</u> 1. Behaviour and Lab Safety 2. Lab equipment 3. Fire safety and Bunsen burners 4. Accurate measurements HSW - resolution and accuracy <u>Biology 1</u> <u>7.2 Cells</u> 1. Life Processes 2. Animal Cells 3. Plant cells (Eukaryotic cells) 4. Introduction to Microscopy 5. Microscopy HSW- Diagram skills 6. Specialised Cells in animals 7. Levels of organisation in animals 8. Levels of organisation in plants <u>Physics 1</u> <u>7.3 Forces</u> 1. Naming forces 2. Force diagrams and balanced forces 3. Resultant Forces 4. Mass and Weight	5. Friction 6. Friction HSW – variables and hypothesis 7. Speed 8. Speed rearranging 9. Distance-time graphs (A) <u>7.4 Energy</u> 1. Energy stores 2. Energy pathways 3. Energy accounts/conservation <u>Chemistry 1</u> <u>7.5 The Particle Model</u> 1. States of Matter HSW 2. Particle Model 3. Changing State 4. Modelling the particle model SM 5. Application of Particle Model 6. Brownian Motion (A) <u>7.6 Atoms, Elements and Periodic Table</u> 1. Atoms and Elements and symbols	<u>Biology 2</u> <u>7.7 Reproduction</u> 1. Reproductive organs - female 2. Reproductive organs - male 3. Puberty 4. The menstrual cycle 5. Tampon investigation 6. Fertilisation 7. Pregnancy 8. Impact of lifestyle on pregnancy (A) <u>Chemistry 2</u> <u>7.8 Intro to Compounds and Mixtures</u> 1. Chemical vs Physical Changes 2. Compounds and Mixtures 3. Making compounds HSW- writing risk assessments 4. Naming Compounds 5. Writing word equations	<u>Chemistry 2 (cont.)</u> <u>7.9 Acids and Bases</u> 1. Intro to Acids and Bases 2. Use of indicators HSW 3. Neutralisation 4. Naming salts 5. Neutralisation HSW <u>Physics 2</u> <u>7.10 Electricity</u> 1. Conductors vs Insulators 2. Electric circuits and components 3. Current in series 4. P.d. in series 5. Current and p.d. HSW <u>7.11 Magnetism</u> 1. Magnets and magnetic materials 2. Magnetic fields 3. Electromagnets and their uses 4. Electromagnets PAG (A) variables, evaluating methods	<u>Chemistry 3</u> <u>7.12 Equations and Common Chemical Reactions</u> 1. Word and symbol equations 2. Balancing Equations theory 3. Balancing Equations practice 4. Acids and Metals 5. Acid and Metals HSW variables 6. Acids and metal carbonates (A) 7. Displacement 8. Oxidation HSW – writing methods 9. Precipitation and thermal decomposition (A) <u>Biology 3</u> <u>7.13 Environment and Feeding Relationships</u> 1. Habitats 2. Adaptations 3. Food Chains and Food Webs 4. Pyramids 5. Classification <u>7.14 Food and Digestion</u> 1. Food Groups	<u>Physics 3</u> <u>7.15 Sound and light</u> 1. Wave introduction 2. Wave properties 3. Sound: pitch and volume 4. How do we hear? (A) 5. Speed of waves Revision End of Year Exam x 2 Feedback <u>7.16 Space</u> 1. Earth's Days 2. Earth's Seasons 3. The Solar System 4. Changing ideas about the Solar System SM (A)

	2. Element symbols and Chemical formulas 3. Periodic table 4. Atomic Structure SM 5. Protons, Electrons and Neutrons Revision Christmas Assessment Feedback			2.Food Tests – Starch and Protein 3.Food Tests – Fats and Sugars 4.The Digestive Systems 5.Digestive Enzymes (A) 6.Non-Communicable Disease – Malnutrition, Starvation, Obesity	
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Year 8 – 6 lessons per fortnight					
Au1 – 21 lessons (approx.)	Au2 – 21 lessons (approx..)	Sp1 – 18 lessons (approx.)	Sp2 – 18 lessons (approx.)	Su1 – 18 lessons (approx.)	Su2 – 18 lessons (approx.)
<u>Physics 1</u> <u>8.1 Motion</u> - Speed & velocity - Free body daigrams - Distance-time graphs - Distance-time graph HSW plotting and interpreting graphs - Unbalanced forces - Acceleration theory - Acceleration practice (A) - Speed-time graphs <u>8.2 Energy</u> - Energy stores and transfers - Mechanical work - Mechanical Power <u>Biology 1</u> <u>8.3 Organ Systems</u> - Respiratory System with lung dissection - Non-Communicable Respiratory Diseases – smoking, asthma - Circulatory System – blood and blood vessels - Circulatory System – heart with dissection (use terms - chambers, valves, blood vessels)	<u>Chemistry 1</u> <u>8.4 Fundamentals</u> - Word and Symbol Equations - Balancing equations - Conservation of Mass - Explaining Decreases and increases in Mass HSW - Compounds & Mixtures <u>8.5 Purity & Separating Mixtures</u> - Pure and Impure - Solubility and basic separation - Separating Mixtures Filtration vs Crystallisation HSW scientific diagrams and writing methods - Separating Mixtures Experiment HSW - Simple Distillation - Fractional Distillation (A) - Chromatography & Rf values (A) Revision Christmas Assessment Feedback	<u>Physics 2</u> <u>8.6 Electricity</u> - Current in series ($I = Q/t$) - Current in parallel circuits - P.d. in series - P.d. in parallel - Resistance <u>8.7 Thermal physics</u> - Heat Energy vs temperature - Heating and cooling curves. - Conduction - Convection - Radiation <u>Biology 2</u> <u>8.8 Plants and the environment</u> - Parts of a Plant Including the Flower with flower dissection - Asexual vs Sexual Reproduction - Pollination – Wind and Animal - Fertilisation, Dispersal and Germination	<u>Biology 2 (cont.)</u> <u>8.9 Unicellular Organisms</u> - Recap classification - Bacteria - Good gut bacteria and communicable bacterial diseases (cholera, tuberculosis) - Fungi – uses and communicable diseases (Chalara Ash Dieback, ringworm, athlete's foot, thrush) - Viruses – communicable diseases (HIV/AIDS) - Protists – communicable diseases (malaria) <u>Chemistry 2</u> <u>8.10 Metals</u> - Properties of metals - Structure of Metals - Metals and oxygen (Rusting) - Metals and water HSW - Metals and Acids HSW - Group 1 Metals - Reactivity series - Displacement theory & Equations - Displacement practical - Extraction of copper HSW (A)	<u>Chemistry 3</u> <u>8.11 Rates of Reaction</u> - Collision Theory - Factors effecting rates - Effect of concentration practical planning HSW - variables - Effect of Concentration practical - Interpreting graphs - Effect of Catalysts and Activation energy (A) <u>Physics 3</u> <u>8.12 Light</u> - Transverse and longitudinal recap - Properties of light - Reflection - Refraction - How we see (inc. basic lenses)	<u>Biology 3</u> <u>8.13 Habitats and Human Impact</u> - Polar regions - Forests - Savannahs - Oceans - Deserts - Coasts - Fresh Water - Mountains - British Wildlife All to include how humans impact those habitats Revision End of Year Exam x 2 Feedback <u>Physics 3(cont.)</u> <u>8.14 Gravitational forces</u> - Newton and Gravitational force (inc inverse square) - Weight mass and recap - Measuring mass HSW (A) - Satellites & orbits <u>Chemistry 3 (cont.)</u>

5.Non-Communicable Cardiovascular Disease 6.Skeletal System – Bones 7.Skeletal System – Tendons and Ligaments 8.Muscular System 9. Nervous system 10. Endocrine system 11. Urinary system					<u>8.15 Earth Science</u> 1. Structure of the Earth 2. Rock Cycle (A) 3. Current atmosphere, greenhouse effect and global warming SM 4. Pollution including Acid Rain (A)
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Year 9 – 8 lessons per fortnight					
Au1 – 28 lessons (approx.)	Au2 – 28 lessons (approx..)	Sp1 – 24 lessons (approx.)	Sp2 – 24 lessons (approx.)	Su1 – 24 lessons (approx.)	Su2 – 24 lessons (approx.)
<u>Chemistry 1</u> <u>9.1 Chemistry Fundamentals</u> 1. Elements, mixtures and compounds 2. Naming compounds 3. Balancing Equations (new) 4. Gas tests HSW (A) <u>9.2 Energy in Reactions</u> 1. Energy in chemical reactions HSW 2. Energy change theory 3. Energy change practice 4. Energy change calculations (A) 5. Calorimetry (new) 6. Calorimetry HSW (new) <u>9.3 Chemical reactions</u> 1. Acid Alkali Base Salt (new) 1. Neutralisation 2. Acid and metal, Acid and metal carbonate 3. Oxidation 4. Precipitation (A) <u>Biology 1</u> <u>9.4 Genetics and Variation</u>	<u>9.5 Enzymes</u> 1. Enzyme structure and action 2. Digestive Enzymes 3. Highly processed food and diet (A) 4. Amylase and Starch –pH and denaturation 5. Milk and Trypsin –temperature and denaturation 6. Denaturation summary 7. Enzymes in industry (A) <u>Physics 1</u> <u>9.6 Newton’s Laws of Motion</u> 1. Free body diagrams/Balanced and unbalanced 2. Newton’s 1st law 3. Terminal Velocity (A) 4. Newton’s 2nd law (theory) 5. Newton’s 2nd law (practice) 6. Acceleration investigation (A) 7. Newton’s 3rd law <u>9.7 Generating electricity</u> 1. Power stations 2. The national grid	<u>Chemistry 2</u> <u>9.8 Atoms and the Periodic Table</u> 1. Discovery and development of the atom SM 2. Rutherford Exp 3. Structure of the atom (P, N, E) 4. Structure of the atom (Electron configuration) 5. Ions and Ionic Formulae 6. Development of the periodic table SM 7. The Modern periodic table 8. Relative atomic and formula mass 9. Alkali Metals 10. Alkali Metals Reactivity 11. Halogens (A) 12. Halogen Displacement HSW (A) 13. Transition Metals (A) 14. Group 2 and stability of metal carbonates (new) <u>Biology 2</u> <u>9.9 Exchange in organisms</u> 1. Diffusion (including factors) 2. Osmosis 3. Osmosis (solutes) (A)	<u>Physics 2 (cont.)</u> <u>9.11 Simple Machines</u> 1. Density 2. Forces on an inclined plane 3. Pressure 4. Hydraulics 5. Moments 6. Moments HSW 7. Hooke’s law theory 8. Hooke’s law HSW - errors 9. Paper aeroplane project (HSW) <u>Biology 2</u> <u>9.12 Ecology</u> 1. Keywords and quadrats for estimating populations 2. Abiotic factors and communities (belt transects) 3. Biotic factors and communities 4. Parasitism 5. Mutualism	<u>Biology 2 (cont.)</u> <u>9.12 Ecology</u> 11. Energy transfer (A) 12. Assessing Pollution (A) 13. Food Security (A) 14. Rates of decomposition (A) <u>Physics 3</u> <u>9.13 Nuclear physics</u> 1. Nuclear structure and radioactivity (structure of atom + isotopes) 2. Penetrating power of α, β, γ 3. Uses of α, β, γ 4. Half-life theory 5. Half-life practice (graph skills) 6. Decay equations (A) <u>Chemistry 3</u> <u>9.14 Separating Techniques</u> 1. The particle model 2. Changes of state 3. Mixtures: Pure vs Impure 4. Solubility: key terms	<u>Biology 3</u> <u>9.15 Photosynthesis</u> 1. Photosynthesis 2. Adaptations of the Leaf 3. Testing a Leaf for Starch 4. Adaptations of the Root 5. Adaptations of the Stem – Xylem and Phloem 6. Limiting Factors (A) <u>Revision</u> <u>End of Year Exam x 2</u> <u>Feedback</u> <u>9.16 Respiration</u> 1. Aerobic Respiration 2. Role of the respiratory, digestion and circulatory system in delivering reactants including heart and breathing rate with exercise (A) 3. Anaerobic respiration 4. Respiration in plants <u>Physics 3</u> <u>9.17 Cosmology</u> 1. Earth’s Days, Earth’s Seasons and The Solar System recap

1. DNA 2. Continuous and Discontinuous Variation 3. Inherited and Environmental Variation 4. Genetic cross diagram 5. Discovery of DNA (A) 6. Charles Darwin and Natural Selection 7. Selective Breeding 8. Genetic Engineering (A) 9. Cloning (A)	3. Electricity in the home 4. Electrical fault finding and safety. 5. Practical – Finding resistance of Constantan. 6. Electric Bills and energy efficiency. 7. Electrical power (A) Revision Christmas Assessment Feedback	4. Active transport Physics 2 9.10Electromagnetic waves 1. Properties of waves 2. Visible spectrum and IR discovery 3. The electromagnetic spectrum 4. X-rays and Gamma rays (A)	6. Biodiversity and Humans 7. Preserving biodiversity 8. Water Cycle 9. Carbon Cycle 10. Nitrogen Cycle (A)	5. Filtration and Crystallisation – Method writing 6. Filtration and Crystallisation HSW 7. Chromatography HSW 8. Chromatography – Rf Values 9. Simple Distillation HSW 10. Potable Water (A) 11. Fractional Distillation (A)	2. Scales in the universe and unit conversions 3. Life cycle of the sun 4. Telescopes 4. Modelling the Big Bang 5. Evidence for the Big Bang SM
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