Science Learning Journey

ORMISTON SWB ACADEMY

[OAT] Ormiston Academies Trust

AN OAT ACADEMY

Year 11

ORMISTON SWB ACADEMY

- Exam Revision
- Carbon, nitrogen and water cycle
- *HSW: The effect of abiotic factors on populations*
- Ecosystems, communities and interdependence
- *HSW: Investigating respiration*
- Blood and circulatory system
- Efficient transport and exchange
- **Combined Biology Topics 8-9**
- Climate change
- The Earth's changing atmosphere
- Complete and incomplete combustion
- Hydrocarbons and homologous series
- Crude oil and fractional distillation
- **Combined Chemistry Topics 15-17**
- *HSW: Investigating springs*
- Bending and stretching
- Gas temperature and pressure
- Energy and changes of state
- *HSW: Particles and density*
- Electromagnetic induction
- Magnetism and the motor effect
- **Combined Physics Topics 10-13**
- Rates of reaction and energy changes
- Groups in the periodic table
- Dynamic equilibrium
- Obtaining and using metals
- Electrolysis
- Conservation of mass, empirical formula and moles
- Reactions of metals and carbonates
- HSW: Investigating neutralisation
- Acids, alkalis and indicators
- **Combined Chemistry Topics 8-15**
- Vector diagrams and objects affecting each other
- Work and power
- Radioactive decay and half-life
- Background radiation
- Developing the atomic model
- Uses and dangers of the EM spectrum
- The electromagnetic spectrum
- *HSW: Investigating wave speeds*
- Momentum
- Newton's Laws
- **Combined Physics Topics 2-8**
- *HSW: Respiration*

Year 10

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- Blood, heart and circulatory system
- Hormonal control
- Transpiration and translocation
- *HSW: Light intensity and photosynthesis*
- DNA, alleles and inheritance
- Meiosis
- Neurotransmission
- Growth and stem cells
- Mitosis
- **Combined Biology Topics 2-8**
- Movement of molecules
- *HSW: Factors affecting enzyme activity*
- Enzyme action
- Enzymes and nutrition
- *HSW: Preparing specimen slides*
- Eukaryotic and prokaryotic cell strcuture
- **Biology Topic 1**
- Velocity and acceleration
- Speed-distance time graphs
- Vectors and scalars
- Energy resources
- Energy efficiency
- Energy transformations
- Energy stores
- **Physics Topic 1 and Topic 3**
- Bonding models
- Properties of metals
- Allotropes
- Covalent bonding
- Ionic bonding
- Elements and the periodic table
- Isotopes and electronic configuration
- Atomic structure
- *HSW: Investigating inks*
- Kinetic theory and purifying substances
- **Chemistry Topics 1-7**
- Natural selection
- DNA, genes and extinction
- Environmental and inherited variation
- **B3a: Genetics and Evolution**
- Polymers
- Composite materials
- Ceramics
- **C3a: Materials for the future**
- Speed, distance and time
- Moments
- The particle model

Year 9

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- Recycling
- Geology
- Earth Structure
- **C2c: Earth Science**
- Groups of the periodic table
- Metals, non metals and alloys
- Developing the periodic table
- **C2b: The Periodic Table**
- Quantitative chemistry
- *HSW: Factors affecting rates of reaction*
- Metal reactivity, extraction and displacement
- Chemical reactions and chemical formula
- Physical and chemical changes
- **C2a: Chemical Reactions and Quantitative Chemistry**
- Plant products
- *HSW: Photosynthesis*
- Leaf structure and function
- Pollination, seed dispersal and fertilsation
- Classification and biodiversity
- **B2d: Plants**
- *HSW: Who gets the heart?*
- Smoking, drugs and alcohol
- Disease transmission
- Microbes
- **B2c: Health**
- Decomposition
- Fungi, bacteria and protoctists
- Unicellular and multicellular
- **B2b: Unicellular Organisms**
- *HSW: Fitness investigation*
- Anaerobic and aerobic respiration
- Lung structure, function and disease
- The heart and circulatory system
- **B2a: Respiration**
- Static electricity and electromagnetism
- *HSW: Insulators and conductors*
- Series and parallel circuits
- **P2c: Electricity and magnetism**
- Colour and filters
- Reflection and refraction
- **P2b: Light**
- Using sound
- Making and detecting sound
- **P2a: Sound**
- **P3a: Fluids, forces and motion**

Year 8

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- Human activity and impact
- Interdependence
- Sampling an ecosystem
- *HSW: Investigating adaptations*
- *HSW: Food testing*
- The digestive system and enzymes
- The musculoskeletal system
- The reproductive system
- **B1b: Body Systems**
- Cells to systems
- Cell specialism
- *HSW: Using microscopes*
- Plant and animal cell structure
- Life processes
- **B1a: Cells**
- Gravity in space
- Days, nights and seasons
- The Solar system and beyond
- **P1c: Earth and Space**
- Pressure, Drag and Upthrust
- *HSW: Friction*
- Balanced and unbalanced forces
- **P1b: Forces**
- *HSW: Energy in food*
- Energy stores and transformations
- Renewable and non-renewable resources
- **P1a: Energy**
- *HSW: Neutralisation in real life*
- The pH scale, strong and weak acids and alkalis
- Hazards
- **C1c: Acids and Alkalis**
- Filtration, distillation and chromatography
- Solutions
- Pure and Impure
- **C1b. Separating Mixtures**
- Atomic Structure
- Density and Pressure
- Brownian Motion and Diffusion
- States of matter and changes of state
- **C1a: States of matter and atoms, elements and compounds**
- Scientific methods and variables
- Equipment and Measurements
- Lab Safety
- **A: Introduction to Science**

Year 7

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