

# Curriculum Detail 2017-2018

Subject

## Science

### Topics covered at Key Stage 3:

**Biology** – Cells, Body Functions, Reproduction, Health and Lifestyles, Ecosystem Processes, Adaptation.

**Chemistry** – Acids, Particle Behaviour, Elements, Reactions, Periodic Table, Separation, Metals and Acids.

**Physics** - Forces, Space, Sound, Light, Electricity and Magnetism, Energy, Motion, Earth.

Thinking Scientifically, Practical Skills

### Topics covered at Key Stage 4 Year 10 and 9: EXAM BOARD AQA

**GCSE Biology** – Cell biology, Organisation, Infection and response, Bioenergetics, Homeostasis and response. Inheritance, variation and evolution, Ecology.

**GCSE Chemistry** – Atoms, Bonding, Moles, Chemical Reactions & Energy Changes, Rates, Equilibrium, Organic Chemistry, Analysis & the Earth's Resources.

**GCSE Physics** – Conservation and dissipation of energy, Energy transfer by heating, Energy Resources, Electrical Circuits, Electricity in the Home, Molecules and Matter, Radioactivity, Forces, Motion, Pressure, Waves and Electromagnetic Waves, Light, Electromagnetism and space (triple only).

### Topics covered at Key Stage 5:

**AQA Biology – Year 1 AS Biology**–Cell Biology, Structure of organic molecules, Protein synthesis, Cell division, Cell specialisation, Movement of substances, Body structures, Plant adaptations.

**Year 2 A2 Biology**- Populations, Ecosystems, Photosynthesis, Respiration, Sampling, Hardy-Weinberg, Genetic analysis

**AQA Chemistry – Year 1** – Atomic structure, Amount of substance, Bonding, Energetics, Basic Kinetics, Equilibria, Redox Reactions, Group II, Group VII, Alkanes, Halogenoalkanes, Alcohols and Organic analysis.

**Year 2** - Kinetics, Thermodynamics, Acids, Bases and Buffers, Periodicity, The Transition Metals, Reactions of Inorganic Compounds in Aqueous Solution, Nomenclature & isomerism, Carbonyl compounds, Aromatic chemistry, Amines, Polymerisation, Organic synthesis & analysis, Structure determination and Chromatography.

**EDEXCEL Physics – Year 1 AS Physics** – Mechanics, Electrical Circuits, Materials and Waves and the Particle Nature of Light

**Year 2 A2 Physics** - Further Mechanics, Electric and Magnetic Fields, Nuclear and Particle Physics, Thermodynamics, Space, Nuclear Radiation, Gravitational Fields and Oscillations

**EDEXCEL BTEC Level 3 Applied Science** - Unit 1 Principles and Applications of Science 1, Unit 2 Practical Scientific Procedures and Techniques, Unit 3 Science Investigation Skills, 1 Optional Unit. Unit 4 Laboratory techniques and their applications, Unit 5 Principles and Applications of Science II, Unit 6 Investigative Project, 1 Optional Unit.