Subject: Y10 Combined Science

OVERVIEW

Students follow the AQA GCSE Combined Science course and will gain a thorough grounding in each of the three sciences. Not only will students develop their knowledge and understanding of biology, chemistry and physics but they will enrich their experience by completing practical activities and learning through discovery. Students continue to build on the knowledge and understanding gained from Year 9, studying topics that build in complexity. Lessons include regular retrieval practice and past paper questions to build up recall and application skills. Students are taught by two teachers, each taking 5 lessons a fortnight.

Aut

Biology

B1 cells

Transport in Cells, Osmosis Practical, Stem cells, Mitosis, Cancer

B2 Organisation

Digestive system, Enzymes, Practical, Circulatory System, Heart, Blood & Blood vessels, Respiratory System, Adaptations of

Chemistry

C1 Atomic Structure

Atomic Structure, development of atomic model, history of periodic table, group 1 elements, group 7 elements

C2 Bonding

Ionic Bonding, Reactivity of Metals, Covalent Bonding, Metallic Bonding, Simple molecules, allotropes of carbon

Physics

P1 Energy

Energy pathways & transfers, Kinetic Energy, Gravitational Potential Energy, Elastic Energy, Renewable and non-renewable energy sources.

P2 Electricity

Circuits & symbols, series circuits, parallel circuits, resistance equation, resistance of

Assessment:

End of topic test for each unit.

Spr

Biology

B3 Infection

Pathogens, communicable Diseases, Viruses, Bacteria, Fungi and Protists, Immune Response, Vaccinations, Clinical Trials, Monoclonal antibodies, Plant disease

Chemistry

C3 Quantitative Chemistry

Relative Formula Mass, Reacting Masses, Balancing equations

C4 Chemical Changes

Reactivity of metals, Reactions of acids, Displacement, forming salts, Electrolysis

Physics

P3 Particle Model

Particle model, density, Change of state and internal energy, Latent heat, Pressure

Assessment:

End of topic test for each unit.

Sum

Biology

B4 Bioenergetics

Photosynthesis, Adaptations of a leaf, Respiration, Effects of exercise on the body

B7 Ecology

Communities, Adaptations, Cycling materials, Sampling populations, Biodiversity, Human impact on

Chemistry

C5 Energy Changes

Exothermic and endothermic reactions, energy change investigations, energy level diagrams, calculating bond energy

C6 Rates of Reaction

Rates, Effect of concentration on rates of reactions, effect of surface area, effect of temperature

Physics

P4 Atomic Structure

Atomic Structure, History of the atom, Alpha, Beta and Gamma radiation, Half life, irradiation & contamination

Assessment:

End of Year exam will be 3 x Paper 1

End of topic test for each unit.

Useful resources for supporting your child at home:

- Knowledge retriever and workbook (provided)
- CGP Combined Science Revision Guide
- BBC Bitesize revision pages
- Youtube: Cognito Science lessons

Homework:

Weekly exam question and Sparx science must be completed