

St Cuthbert Mayne School Curriculum Map



Department: Science

Year 10

Department Intent and overview

Developing Scientists of the future

Key Stage 4 Curriculum Summary

Building on the fundamental concepts of Science

Autumn Term 1

Topic/Unit	Bonding and Structure	Organisation
Knowledge (Content covered)	• Ionic bonding and the properties of ionic compounds • Covalent bonding and the properties of covalent compounds • Metallic bonding and the properties of metallic compounds	• Organs • Digestive system • Enzymes • The heart • Blood • Ventilation • Cancer • Plant tissues and organs • Transpiration
Skills	Grasping scientific concepts which we cannot see.	Deepening understanding of key biological concepts Following experimental methods safely
Assessment	Pre-and Post progress check multiple choice, end of unit assessment	Pre-and Post progress check multiple choice, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Chemical Engineer	Nurse

Autumn Term 2

Topic/Unit	Electricity
Knowledge (Content covered)	• Current potential difference and resistance • Series and parallel circuits • Domestic use and safety • Energy Transfers

Skills	Carrying out complex practical work safely. Following scientific methods
Assessment	Pre-and Post progress check multiple choice, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Electrical engineer

Spring Term 1

Topic/Unit	Magnetism	Rate and the extent of chemical change
Knowledge (Content covered)	• Magnetism • Magnetic fields • Electromagnets • Electric motors • Fleming's Left Hand Rule	• Calculating rates • Investigating temperature • Investigating surface area • Investigating temperature • Catalysts • Energy changes
Skills	Using experimental techniques to prove a scientific hypothesis	Carrying out complex practical work safely. Following scientific method
Assessment	Pre-and Post progress check multiple choice, end of unit assessment	Pre-and Post progress check multiple choice, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Mechanical Engineer	Pharmacologist

Spring Term 2

Topic/Unit	Bioenergetics	Energy
Knowledge (Content covered)	• Photosynthesis • Aerobic Respiration • Anaerobic respiration • Metabolism	• Energy Transfer • Kinetic energy • Gravitational potential energy • Elastic potential energy
Skills	Deepening understanding of key biological concepts Following experimental methods safely	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science
Assessment	Pre-and Post progress check multiple choice, end of unit assessment	Pre-and Post progress check multiple choice, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Biochemist	Energy Engineer

Summer Term 1

Topic/Unit	Quantitative Chemistry	Chemical Changes
Knowledge (Content covered)	• Relative formula mass • Calculating limiting reactants • Calculating concentrations	• Formation of metal oxides • Reactivity series • Metals and acids • Displacement • Neutralisation • Electrolysis
Skills	Enhancing Mathematics in Science	Carrying out complex practical work safely. Following scientific methods

Assessment	Pre-and Post progress check multiple choice, end of unit assessment	Pre-and Post progress check multiple choice, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Pharmacist	Chemist

Summer Term 2

Topic/Unit	Chemical Changes	Mock exams and Feedback
Knowledge (Content covered)	• Formation of metal oxides • Reactivity series • Metals and acids • Displacement • Neutralisation • Electrolysis	• Biology paper 1 • Chemistry Paper 1 • Physics paper 1
Skills	Carrying out complex practical work safely. Following scientific methods	Examination technique and experience
Assessment	Pre-and Post progress check multiple choice, end of unit assessment	Full GCSE papers
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Chemist	