

St Cuthbert Mayne School Curriculum Map



Department: Science

Year 9

Department Intent and overview

Developing Scientists of the future

Key Stage 3 Curriculum Summary

Exploring the fundamental concepts of Science

NOTE: Science groups may have more than one teacher. In these cases students will be taught two units simultaneously, one by each teacher, so as not to disrupt learning and ensure continuity.

Autumn Term 1

Topic/Unit	Cell Biology	Atomic Structure and the periodic table
Knowledge (Content covered)	• Types of cell • The use of microscopes • Specialised cells • Transport across membranes	• Arrangement of subatomic particles • History of the atom • Arrangement of the periodic table • Properties of the elements in the periodic table
Skills	Use of specialised scientific equipment Linking mathematical understanding to scientific scenarios	Grasping scientific concepts which we cannot see. Using experimental techniques to prove a scientific hypothesis
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	Microbiologist	Pharmacist

Autumn Term 2

Topic/Unit	Atomic structure and the periodic table	Energy
Knowledge (Content covered)	• Arrangement of subatomic particles • History of the atom • Arrangement of the periodic table • Properties of the elements in the periodic table	• Energy Transfer • Kinetic energy • Gravitational potential energy • Elastic potential energy
Skills	Grasping scientific concepts which we cannot see. Using experimental techniques to prove a scientific hypothesis	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	Pharmacist	Energy Engineer

Spring Term 1

Topic/Unit	Infection and response	Organic Chemistry
Knowledge (Content covered)	• Pathogens Defences against disease Vaccinations • Drug development	• Crude oil • Alkanes • Fractional distillation • Cracking • Alkenes • Polymers
Skills	Deepening understanding of key biological concepts Following experimental methods safely	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	Haematologist	Chemist

Spring Term 2

Topic/Unit	Chemistry of the atmosphere	Atoms and radiation
Knowledge (Content covered)	• The early atmosphere • Development of life sustaining atmosphere • Greenhouse gases	• Atomic Structure Discovery of the structure of the nucleus • Alpha, beta and gamma radiation
Skills	Carrying out complex practical work safely. Following scientific methods	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	Climate analyst	Nuclear Engineer

Summer Term 1

Topic/Unit	Atoms and radiation	Ecology
Knowledge (Content covered)	• Atomic Structure Discovery of the structure of the nucleus • Alpha, beta and gamma radiation	• Classification • Adaptation • The carbon cycle • The water cycle
Skills	Following scientific methods Enhancing Mathematics in Science	Applying theory to investigate current environmental issues Linking mathematical understanding to scientific scenarios

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

Summer Term 2

Topic/Unit	Ecology	Waves
Knowledge (Content covered)	• Sampling • Biodiversity • Deforestation • Global warming	• Types of wave • Calculating waves • The electromagnetic spectrum
Skills	Applying theory to investigate current environmental issues Linking mathematical understanding to scientific scenarios	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science
Assessment	Re-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	Ecologist	Audiologist