

St Cuthbert Mayne School Curriculum Map 2021-2022



Department: Science

Year 9

Department Intent and overview

Developing Scientists of the future

Key Stage 3 Curriculum Summary

Exploring the fundamental concepts of Science

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	Re-and Post progress check multiple choice, 2x DIRT tasks	Re-and Post progress check multiple choice, 2x DIRT tasks
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Microbiologist	Pharmacist

Autumn Term 2

Topic/Unit	Atomic structure and the periodic table	Particle model of matter
Knowledge (Content covered)	<ul style="list-style-type: none"> ● Arrangement of subatomic particles ● History of the atom ● Arrangement of the periodic table ● Properties of the elements in the periodic table 	<ul style="list-style-type: none"> ● Density ● States of matter ● Internal energies ● Specific latent heat
Skills	Grasping scientific concepts which we cannot see. Using experimental techniques to prove a scientific hypothesis	Using experimental techniques to prove a scientific hypothesis Following scientific methods
Assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Pharmacist	Physicist

Spring Term 1

Topic/Unit	Organisation
Knowledge (Content covered)	<ul style="list-style-type: none"> ● Organs ● Digestive system ● Enzymes ● The heart ● Blood ● Ventilation ● Cancer ● Plant tissues and organs ● Transpiration
Skills	Deepening understanding of key biological concepts Following experimental methods safely
Assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Nurse

Spring Term 2

Topic/Unit	Organic Chemistry	Chemistry of the atmosphere
Knowledge (Content covered)	<ul style="list-style-type: none"> ● Crude oil ● Alkanes ● Fractional distillation ● Cracking ● Alkenes 	<ul style="list-style-type: none"> ● The early atmosphere ● Development of life sustaining atmosphere ● Greenhouse gases

	<ul style="list-style-type: none"> Polymers 	
Skills	Carrying out complex practical work safely. Following scientific methods	Carrying out complex practical work safely. Following scientific methods
Assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Chemist	Climate analyst

Summer Term 1

Topic/Unit	Atoms and radiation	Infection and response
Knowledge (Content covered)	Atomic Structure Discovery of the structure of the nucleus Alpha, beta and gamma radiation	Pathogens Defences against disease Vaccinations Drug development
Skills	Following scientific methods Enhancing Mathematics in Science	Deepening understanding of key biological concepts Following experimental methods safely
Assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Nuclear Engineer	Haematologist

Summer Term 2

Topic/Unit	Waves
Knowledge (Content covered)	Types of wave Calculating waves The electromagnetic spectrum
Skills	Carrying out complex practical work safely. Following scientific methods Enhancing Mathematics in Science
Assessment	Pre-and Post progress check multiple choice, 2x DIRT , end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Audiologist