

St Cuthbert Mayne School Curriculum Map 2021-2022



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	Electricity
Knowledge (Content covered)	<ul style="list-style-type: none">• Ionic bonding and the properties of ionic compounds• Covalent bonding and the properties of covalent compounds• Metallic bonding and the properties of metallic compounds	<ul style="list-style-type: none">• Current potential difference and resistance• Series and parallel circuits• Domestic use and safety• Energy Transfers

Skills	Grasping scientific concepts which we cannot see.	Carrying out complex practical work safely. Following scientific methods
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	Chemical Engineer	Electrical engineer

Autumn Term 2

Topic/Unit	Magnetism	Bioenergetics
Knowledge (Content covered)	<ul style="list-style-type: none"> ● Magnetism ● Magnetic fields ● Electromagnets ● Electric motors ● Fleming's Left Hand Rule 	<ul style="list-style-type: none"> ● Photosynthesis ● Aerobic Respiration ● Anaerobic respiration ● Metabolism
Skills	Using experimental techniques to prove a scientific hypothesis	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	Mechanical Engineer	Biochemist

Spring Term 1

Topic/Unit	Rate and the extent of chemical change	Energy
Knowledge (Content covered)	Calculating rates Investigating temperature Investigating surface area Investigating temperature Catalysts	Energy Transfer Kinetic energy Gravitational potential energy Elastic potential energy
Skills	Carrying out complex practical work safely. Following scientific method	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	Pre-and Post progress check multiple choice, 2x DIRT, end of unit assessment
Gatsby 4 (Linking curriculum learning to careers) GATSBY BENCHMARK 4	Pharmacologist	Energy Engineer

Spring Term 2

Topic/Unit	Homeostasis and response	Quantitative Chemistry
Knowledge (Content covered)	The nervous system The reflex arc Blood glucose levels The menstrual cycle Contraception	Relative formula mass Calculating limiting reactants Calculating concentrations
Skills	Deepening understanding of key biological concepts Following experimental methods safely	Enhancing Mathematics in Science
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	Biomedical scientist	Pharmacist

Summer Term 1

Topic/Unit	Chemical Changes
Knowledge (Content covered)	<ul style="list-style-type: none"> ● Formation of metal oxides ● Reactivity series ● Metals and acids ● Displacement ● Neutralisation ● Electrolysis
Skills	Carrying out complex practical work safely. Following scientific methods
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

Summer Term 2

Topic/Unit	Using Resources
Knowledge (Content covered)	Water purification Recycling
Skills	Relating science to the real world

	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	Environmental Scientist