CLAYTON HALL ACADEMY
Faculty and Department Curriculum and Assessment Handbook

Name of Faculty/Department: **Science – Key Stage 3**

Throughout the document, the following colour coding has been used: **Biology**, **Chemistry**, **Physics**

Our Curriculum Intent

Science Curriculum Intent

The Science Department is a passionate and talented team of well qualified Science teachers who are dedicated to ensuring that students at Clayton Hall Academy have a solid grounding in science.

The intent of the curriculum is to:

- **Foster curiosity for life and the natural world**
- **To provide students with the scientific skills and knowledge required to function as a well-rounded member of British society**
- **Provide a challenging curriculum that encourages future scientists and prepares them for their next stages.**

Gold Standard Teaching and Learning in Science

We expect that in Science this includes:-

- clear learning aims each lesson and a clear route to achieving success
- high demands of pupil involvement and engagement with their learning
- an appropriate use of a range of pedagogies and learning strategies
- Students talking and writing like a scientist using key vocabulary
- regular practical lessons focused on developing students understand of working scientifically
- regular use of encouragement and rewards to engage and motivate pupils
- full coverage of the National Curriculum KS3 Programme of Study
- the opportunity to make connections between Science study and the wider world including applications and STEM careers

Long Term Assessment Plan – Key Stage 3

Note that each term topics will be taught in different order to avoid shortages of lab equipment. By the end of each term all students have studied the same content.

Year 7

When?	What we are Learning and Assessing e.g. Topics/ Skills etc	How we are Assessing e.g. Extended writing, Project, exam etc	Links Backwards and Forwards
Autumn 1	• Introduction to Practical work - This covers safety in the laboratory, basic skills and carrying out investigations • Body Systems - Introduction to microscopes looking at cells, tissue, organs and organ systems. • Mixtures and Separation looks at methods of separating mixtures. • Forces continues the KS2 journey of understand what forces are and what they can do adding mathematical models. • NB Body Systems is twice the size of the other topics.	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Body systems builds on KS2 Animals and human body parts. • Mixtures and separation follows Y5 Properties and changes of materials • Forces builds on KS1 and 2 Forces
Autumn 2			• Body Systems links to cells and organ systems in Y7 Reproduction and Y8 Food and Breathing • Mixtures and Separation builds into Y7 Particle Model and Y8 Periodic Table • Forces supports Y8 Effects of Forces
Spring 1	• Reproduction covers reproductive organ systems, fertilisation and pregnancy. • The Particle Model begins to develop the concept of atoms and particulate nature of matter. • Energy is an introduction to the concept of energy and how it can be measured. • NB Energy is twice the size of the other topics.	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Reproduction uses understanding from Y7 Body Systems. • The Particle Model builds on ideas from Mixtures and separation. • Energy builds on KS2 ideas from Light and Sound topics.
Spring 2			• Reproduction links to KS4 Reproduction. • The Particle Model prepares students for KS4 Atomic Structure. • Energy concept is applied through KS3 physics and builds to KS4 Conservation and dissipation of Energy.

When?	What we are Learning and Assessing e.g. Topics/ Skills etc	How we are Assessing e.g. Extended writing, Project, exam etc	Links Backwards and Forwards
Summer 1	• Ecosystems develops ideas of feeding relationships and interdependence. • Acids and Alkalis introduces these chemical families, the pH scale and neutralisation. • Sound and Light introduces the concept of waves to explain sound and light • NB Sound and Light is twice the size of the other topics.	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Ecosystems builds on Y4, Y5 and Y6 Living things and their habitats • Acids follows from changes of materials in KS2. • Sound and Light follows on work in Y6 Light and Y4 Sound
Summer 2			• Ecosystems links to KS4 Organising animals and plants • Acids and Alkalis links to KS4 Chemical Changes • Sound and Light links to KS4 Wave properties

Year 8

When	What we are Assessing e.g. Topics/ Skills etc	How we are Assessing e.g. Extended writing, Project, exam etc	Links Backwards and Forwards
Autumn 1 **Autumn 2**	• Food and Breathing covers the organs and function of the digestive system and those associated with breathing and respiration. • The Periodic Table covers the development and interpretation of the periodic table. • Electricity and Magnetism looks at building electric circuits and the phenomena of magnets. • • NB Food and Breathing is twice as long as other topics	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Food and Breathing applies understanding of cells and tissues from Y7 Body Systems • The Periodic Table builds on and develops further the particle model • Electricity and Magnetism follows KS2 work on electric circuits and magnets in forces. • Food and Breathing links forward to KS4 Respiration and DIgestion • The understanding of the Periodic Table is strengthened in KS4 Periodic table. • Electricity is further deepened in KS4 Electric Circuits and Electricity at Home. Magnets are returned to in KS4 Magnetism.
Spring 1 **Spring 2**	• **Plants topic develops ideas of classification, photosynthesis and plant reproduction.** • **Metals and Their Uses looks at further develop ideas around chemical reactions looking at those involving metals.** • **The Effects of Forces continues to develop the concept of the particle model looking at particles in changes of state and how these explain pressure and upthrust as well as looking at turning forces.** • **NB The effects of forces is twice as big as the other topics.**	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Plants **topic builds on Cells from Body Sytems in Y7 and Reproduction in animals as well as Plants in Living Things from KS2** • **Metals and Their** Uses **builds on ideas of particles developed in Y7 Chemistry** • **The Effects of Forces builds on Y7** Forces**.** • **Plants topic is developed further in KS4 Photosynthesis** • **Metals** and **Their Uses links to KS4 Chemical Changes** • **The Effects of Forces links to KS4 Forces in Balance** and **Particles**

When	What we are Assessing e.g. Topics/ Skills etc	How we are Assessing e.g. Extended writing, Project, exam etc	Links Backwards and Forwards
Summer 1 **Summer 2**	• **Unicellular Organisms develops understanding of micro-organisms.** • **Reactivity builds further understanding of chemical reactions and the reactivity series.** • **Earth and Space looks at The Earths position in the Universe and develops understanding of Gravity.** • **Genetics develops knowledge of variation, inheritance and evolution**	• Science investigation knowledge and skills are assessed regularly against our Science assessment map. • Topics assessed from classwork, mid-unit progress assessment and end of topic tests.	• Unicellular **Organisms builds from Cells in Y7 Body systems** • **Reactivity** follows **Y8 Metals and their reactions.** • **Earth and Space follows from KS2 Earth and** Space • **Genetics builds on Y6 Evolution and Inheritance.** • Unicellular Organisms links to KS4 Cell Structure and Communicable diseases • Reactivity prepares students for KS4 Chemical Changes • Earth and Space is only followed in KS4 Triple Science Physics - Space Topic • Genetics links to KS4 Genetics and Evolution

Key Stage 3 Science Overview

We follow the National Curriculum KS3 Science Programme of Study

What resources could I buy or borrow that will help my child?

Any National Curriculum Linked KS3 Science revision resource will cover the same topics as we do.

BBS Bitesize KS3 (England) website has extensive information, quizzes and videos to support learning in KS3 Science.

What can I do to encourage my child to take further interest in Science?

Podcasts and TV shows about Science
Reading Popular Science books
Develop understanding of the multitude of STEM (Science Technology Engineering and Maths) Careers.