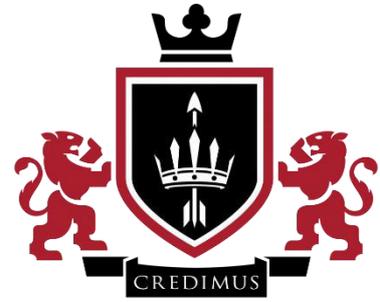


Y7 KLAB Curriculum



KING'S LEADERSHIP
ACADEMY BOLTON



Y7 Science Curriculum

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Intent, Implementation and Impact

The physicist Richard Feynman once said “what we are looking for, is how everything works”, he was right! Science is a subject that opens up the world by imbuing pupils with the collective knowledge of over two thousand years of acquired knowledge. Our curriculum will ensure that every child leaves the school viewing the world in a different light, able to make decisions about their career, health and engagement with science within society. Furthermore, we want no pupil to feel shut out from accessing documentaries, museums, stories and media about science. Science knowledge is the entitlement of every child!

Richard Feynman also said “there are no miracle people”. We stand by that statement at Kings and take all pupils through a well sequenced, knowledge rich curriculum. Further to this, we believe the best route to mastery in science is practice, teacher led lessons and hard work!

Throughout their time at kings, pupils will study a wide range of subjects across biology, chemistry, physics and astronomy. These topics range from human biology or the formation of the universe to the structure of atoms. Our programme of study is identical for all pupils at key stage three. When pupils get to GCSE, we will help them to choose one of two streams:

Combined science 9-1 (AQA)

This stream awards pupils **two GCSE** grades, and covers biology, chemistry and physics. This is still a suitable stream for those who wish to pursue careers which require science knowledge.

Separate science (AQA)

This stream awards pupils with **three distinct GCSE's**:

GCSE Biology (9-1)

GCSE Chemistry (9-1)

GCSE Physics (9-1)

These courses contain **all of the combined science** content, but provide **extra depth** for each subject. This course occupies one of the GCSE option slots for a pupil.

SCIENCE LC1

SUBJECT	Science	YEAR	7	LEARNING CYCLE	1		
Module(s)	Introduction to cells and the body.						
Outline and Rationale	<p>This topic is taught at the start of year 7 as pupils bring little understanding of the life sciences with them from key stage two. Up to a third of eleven-year-old pupils have trouble distinguishing between objects which are alive, dead, or having never been alive. Many more have as little understanding of human organ systems as 18th century citizens.</p> <p>Biology is the study of living things – so this unit starts with an understanding of what it means to be an organism (from a biological perspective). In addition, structure function relationships (cellular adaptations or structure) pervade biology and so throughout this learning sequence pupils should develop a foundational understanding of how organisms are organised at different scales (scale is something that pupils additionally find hard to conceptualise).</p> <p>These core themes are taught through:</p> <ul style="list-style-type: none"> -Microscopy -Specialised cells -Two different organ systems (part of the digestive system and the gas exchange system) <p>Once taught, this unit will lay the foundations for study of other organ systems and their specialised cells – such as the human reproductive system, the nervous system, and the endocrine system (at key stages four and five). By establishing that organisms require nutrients for the life processes, it allows pupils to understand competition amongst organisms within an ecosystem later in key stage three. This unit is a powerful introduction to the most important themes in secondary school biology.</p>						
Learning Cycle Overview	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	<ul style="list-style-type: none"> -What are organisms? -Animal cells -Plant cells -Microscopy 	<ul style="list-style-type: none"> - Organ systems - Specialised cells 	<ul style="list-style-type: none"> -Nutrients -Deficiency disease 	<ul style="list-style-type: none"> -Food and digestion 	<ul style="list-style-type: none"> - Breathing and gas exchange 	<ul style="list-style-type: none"> Revision Assessment 	<ul style="list-style-type: none"> Gap week (review of topics Week 1-5)

SCIENCE LC2

SUBJECT	Science	YEAR	7	LEARNING CYCLE	2		
Module(s)	Energy and Forces						
Outline and Rationale	Energy and forces are a fundamental aspect in creating a knowledge base for multiple Physics topics and phenomena. This topic allows pupils to develop base level knowledge of energy and forces; building upon KS2 knowledge. During this module students will familiarise themselves with the different types of energy stores and transfers along with contact and non-contact forces. This topic is a requirement to be taught at the beginning of KS3 to provide a solid foundation for all physics topics . Students will start with an introduction to the types of energy stores and transfers allowing them to describe how and an object's initial energy store is transferred to its final energy store. Later in the topic students will look at different types of forces and how they can affect the motion of an object. These skills include key numerical data processing, results tables and graphs. Numerical skills are built upon and developed through various calculations, collecting data and also analysis of results to come to conclusions. This builds upon the scientific method which is taught in LC1.						
Learning Cycle Overview	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	Types of energy stores and transfers	Conservation of energy Energy at home - power and efficiency	Forces - introduction (balanced/unbalanced, resultant force diagrams)	Friction, Speed and acceleration	Reducing friction, air-resistance (force diagrams)	Revision Assessment	Gap week (review of topics Week 1-5)