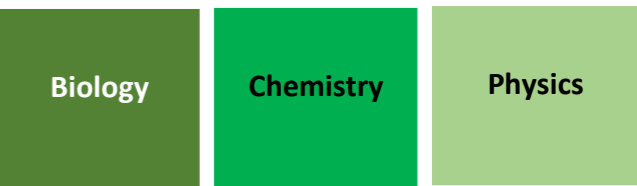


Science Learning Journey



KS3 Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

KS3 Aims

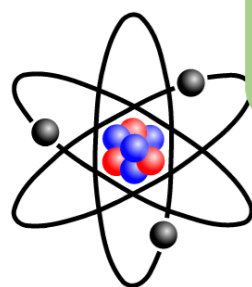
The national curriculum for science aims to ensure that all pupils: ♣ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics ♣ develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them ♣ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

KS1-2 Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

KS1-2 Aims

The national curriculum for science aims to ensure that all pupils: ♣ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics ♣ develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them ♣ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.



Summer 1.2: Force fields and electromagnets

Force fields, static and current electricity, resistance,

Summer 1.1: Forces and motion

Forces and movement, energy, speed, turning forces

Spring 1.2: Reactivity

Types of explosions, energy and reactivity, displacement, extracting materials

Spring 1.1: Making materials

About ceramics, polymers, composite materials, recycling materials

Autumn 1.2: Plant growth

Plant reactions and adaptations, plant products and crop growing

Autumn 1.1: Genetics and evolution

Environmental and inherited variation, DNA, genes

Summer 2.2: Physics transition to GCSE

Differences, fields, cause and effect, models, variables

Summer 2.1: Physics revision and projects

Models in science, energy, forces, waves, machines

Spring 2.2: Chemistry transition to GCSE

Ions, energy and transfers, rates and reaction, equations

Spring 2.1: Chemistry revision and projects

Working scientifically, separating substances

Autumn 2.2: Biology transition to GCSE

Diseases, control systems, testing medicines, ecology

Autumn 2.1: Biology and revision projects

Working scientifically, cells, systems, organs, reproduction

Autumn 1.1: Food and nutrition

Nutrients, uses of nutrients, balanced diets, digestion

Autumn 1.2: Plants and their reproduction

Classification and biodiversity, types of reproduction, pollination, fertilisation and dispersal

Spring 1.1: Combustion

Burning fuels, oxidation, fire safety, air pollution, global warming

Spring 1.2: The periodic table

Dalton's atomic model, chemical properties, physical and chemical trends

Summer 1.1: Fluids

The particle model, changing state, pressure, floating and sinking, drag

Summer 1.2: Light

Light on the move, reflection, refraction, cameras and eyes, colour

Autumn 2.1: Breathing and respiration

Aerobic & anaerobic respiration, gas exchange system, getting oxygen

Autumn 2.2: Unicellular organisms

Microscopic fungi, bacteria, protocists

Spring 2.1: Metals and their uses

Metal properties, corrosion, metals, acids and water, pure metals and alloys

Spring 2.2: Rocks

Rocks and their uses, igneous and metamorphic, weathering and erosion, sedimentary rocks

Summer 2.1: Energy transfers

Temperature changes, transferring energy, power and efficacy

Summer 2.2: Earth and space

Seasons, gathering evidence, magnetic earth, gravity and space, beyond the solar system

Year 9

