

ABC Links to literacy

We develop scientific literacy through reading scientific literature aloud, and applying knowledge to extended writing questions. We discuss key concepts with our peers to help embed key terms.

AUTUMN - 2

Topic name: **The fundamentals of chemistry (Solubility and chemical reactions)**

Why study this topic?

Through learning about chemical reactions, we will understand how elements and compounds take their final form in everyday life. It is important to develop knowledge of different physical properties as well as our procedural knowledge around reading and interpreting graphs.

SPRING - 2

Topic name: **The basics of biology (Organ systems and Variation)**

Why study this topic?

It is important to understand how organs work together as part of organ systems to maintain the conditions needed for the body cells to survive.

It is also important to understand the role of variation in survival of different species under different circumstances, as our differences in characteristics are what make us more capable of survival.

SUMMER - 2

Topic name: **Forces and energy (Light, sound, heating and cooling)**

Why study this topic?

It is important to understand that energy can exist in different stores. Light, sound, heating and cooling are all experienced by us at all times, and they are all linked to how energy can be transferred! This topic forms the basis for our Year 8 Physics learning.

Subject Intent statement

We learn science as it is interesting, exciting and relevant to our everyday lives. It will help us make sense of the world and develop skill sets that enable us to embody the Enfield way, which is to LEARN: Lead, Excel, Aspire, Stay Resilient, and Nurture.

AUTUMN - 1

Topic name: **The fundamentals of chemistry (Substances and mixtures)**

Why study this topic?

It is important to understand what substances and mixtures and be able to classify substances and mixtures using their melting points. Learn how mixtures can be separated by physical processes, and why compounds require chemical processes, is also important in real-world applications.

SPRING - 1

Topic name: **The basics of biology (Cells, inheritance and the genome)**

Why study this topic?

Cells are the basic unit of life. Understanding the idea that all life has a "genome" (genetic material) that is passed on to their offspring and demonstrate that this genetic material can be extracted as a chemical substance called DNA will form the basis of future learning about biological organisation.

SUMMER - 1

Topic name: **Forces and energy**

Why study this topic?

We experience forces at all times, without even realising. An understanding of balanced and unbalanced forces will enable us to determine motion and understand the role of friction.

123 Links to Numeracy

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AUTUMN - 2

Topic name: **Waves, Force and Energy**
Why study the topic?

To help explain everyday events and are central to many gadgets we use. They spark curiosity, help you understand the world better, and build problem-solving skills. This foundation is essential for future learning and making informed choices.

2

SPRING - 2

Topic name: **The atmosphere and chemical reactions**
Why study this topic?

Understanding these concepts links everyday experiences to broader scientific principles. This knowledge encourages curiosity, fosters informed decision-making about the environment, and reveals the fascinating science behind common occurrences.

4

SUMMER - 2

Topic name: **Organisms and ecosystems**
Why study this topic?

To understand how plants, animals, and environments interact to create balance and sustainability. This knowledge promotes responsible actions, appreciation for biodiversity, and comprehension of humanity's role within these systems. This helps us make informed choices that impact the health and future of our planet.

6

1

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3

SPRING - 1

Topic name: **The Earth and Chemical changes**
Why study this topic?

To understand how our planet and everyday life are connected through simple reactions. Knowing what's beneath our feet and how different materials react, we can make sense of things like why volcanoes erupt or why food changes when cooked. This knowledge connects us to the world, makes science relatable, and helps us see the magic in everyday life.

5

AUTUMN - 1

Topic name: **Space and Force**
Why study the topic?

To foster curiosity, understand Earth's place in the universe, appreciate scientific achievements, grasp fundamental physics concepts, and inspire potential future careers in STEM fields. Space studies broaden horizons, encouraging critical thinking and a sense of wonder about our vast cosmos.

SUMMER - 1

Topic name: **Health, inheritance and evolution**
Why study this topic?

To get insights into why we resemble our parents, how diseases work, and why diversity exists in nature. This foundational knowledge helps us make informed health choices, appreciate the complexity of life, and recognize the interconnectedness of all living beings through time.

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AUTUMN – 2

Topic name: **Cell biology 2**

Why study this topic?

By understanding how cells work in healthy and diseased states, cell biologists working in animal, plant and medical science will be able to develop new vaccines and more effective medicines

Topic name: **Energy 1**

Why study this topic?

Energy is essential to life and all living organisms. The sun, directly or indirectly, is the source of all the energy available on Earth.

Our energy choices and decisions impact Earth's natural systems in ways we may not be aware of, so it is essential that we choose our energy sources carefully

2

SPRING – 2

Topic name: **Organisation**

Why study this topic?

Understanding how the many different types of cells form tissues, organs and organs systems of a multicellular organism.

4

SUMMER - 2

Topic name: **Quantitative chemistry**

Why study this topic?

Quantitative chemistry is a very important branch of chemistry because it enables chemists to calculate known quantities of materials. It is used widely in pharmacology and industrial chemistry.

Topic name: **Electricity**

Why study this topic?

Electrical charge is a fundamental property of matter everywhere. Understanding the difference in the properties of conductors, insulators and semiconductors make it possible to create the devices that power our modern world.

6

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1

AUTUMN - 1

Topic name: **Cell biology 1**

Why study this topic?

By understanding how cells work in healthy and diseased states, cell biologists working in animal, plant and medical science will be able to develop new vaccines and more effective medicines.

Topic name: **Atomic structure and the periodic table**

Why study this topic?

Electrons, neutrons and protons are the building blocks of atoms. If we know how atoms are constructed and behave, we gain a better understanding of matter in the universe.

3

SPRING – 1

Topic name: **Energy 2**

Why study this topic?

Energy is essential to life and all living organisms. The sun, directly or indirectly, is the source of all the energy available on Earth. Our energy choices and decisions impact Earth's natural systems in ways we may not be aware of, so it is essential that we choose our energy sources carefully

Topic name: **Bonding, structure and properties of matter**

Why study this topic?

This helps scientists to design and engineer new materials with desirable properties for specific uses.

5

SUMMER - 1

Topic name: **Infection and response**

Why study this topic?

Pathogens are microorganisms such as viruses and bacteria that cause infectious diseases in animals and plants. They frequently produce toxins that damage tissues and make us feel ill. The study of these pathogens is important in the development of future treatments.

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AUTUMN - 2

Topic name: **The Human Nervous System**

Why study this topic? In this section, I will explore the structure and function of the nervous system and how it can bring about fast responses.

Topic name: **Particle Model of Matter**

Why study this topic?

We learn about particles and matter as it will enable us to predict properties and behaviour of solids, liquids and gasses.

SPRING - 2

Topic name: **Forces in balance**

Why study this topic? Engineers analyse forces when designing a variety of machines and instruments. By studying this topic, I will be able to develop the skill sets engineers use to drive society.

Topic name: **Crude Oil, Fuels and organic motion**

Why study this topic?

This topic will help me appreciate how chemists are able to make organic molecules and modify them in many ways to make new and useful materials such as polymers and pharmaceuticals.

SUMMER - 2

Topic name: **Chemical Analyses**

Why study this topic?

This topic will teach me how to analyse and detect specific chemicals using various qualitative test.

Topic name: **Forces and Pressure**

Why study this topic?

I will be able to appreciate how environmental conditions impact all working instruments and experiments.

1

2

4

6

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SPRING - 1

Topic name: **Homeostasis in action**

Why study this topic?

Through studying this topic, I will learn about the importance of the hormonal system in bringing about much slower changes. This will enable me to appreciate and understand why my body behaves the way it does.

Topic name: **Energy Changes**

Why study this topic?

By learning about the concept of energy which emerged in the 19th century, I will be able to explain fascinating physics phenomena such as the work output of steam and how limits to the use of fossil fuels and global warming are critical problems for this century.

3

AUTUMN - 1

Topic name: **Chemical Changes**

Why study this topic? Knowing about different chemical changes will allow you to predict what new substances will form and use this knowledge to develop a wide range of different materials.

Topic name: **Bioenergetics**

Why study this topic?

This topic will help me explore how plants harness the Sun's energy in photosynthesis in order to make food

5

SUMMER - 1

Topic name: **Forces and Motion**

Why study this topic?

Through studying this topic, I will be able to make sense of how complex and advanced machinery all involve the basic laws of motion

Topic name: **Crude Oil, Fuels and organic reactions**

Why study this topic?

This topic will help me appreciate how chemists are able to make organic molecules and modify them in many ways to make new and useful materials such as polymers and pharmaceuticals.

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AUTUMN - 2

Topic name: **Inheritance, variation and evolution**

Why study this topic?

To learn about how we inherit our physical characteristics and how humanity has evolved over millions of years to gain the traits it has now.

Topic name: **Ecology (Part 1)**

Why study this topic?

To understand how we engage with our environment in a sustainable way.

2

SPRING - 2

GCSE Revision

4

SUMMER - 2

GCSEs completed.

6

1

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5

AUTUMN - 1

Topic name: **Chemistry of the atmosphere**

Why study this topic?

Atmospheric chemistry plays an important role in understanding climate change.

Topic name: **Using resources**

Why study this topic?

To make a positive impact on our environment by learning about recycling, reusing and reducing waste.

Topic name: **Waves**

Why study this topic?

To understand how waves carry information and energy from one place to another, like with our mobile phones and Wi-Fi.

3

SPRING - 1

Topic name: **Magnetism and electromagnetism**

Why study this topic?

To understand how a magnet moving in a coil can produce electric current, and also that when current moves around a magnet it can produce movement.

SUMMER - 1

GCSE Exams

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