

# Science Learning Journey

You will learn about using the Earth's resources, potable water, life cycle assessments, the Haber process, the Solar system, satellites, red shift

You will learn about adaptations, competition, interdependence, biodiversity, the composition of the atmosphere, pollutants and their effects, magnetism, the motor effect, transformers

You will learn about reproduction, variation, evolution, classification, purity of substances, chromatography, identification of ions, waves, electromagnetic waves.

You will learn about fractional distillation, cracking, carbon compounds and their reactions, polymers.

## Final Exam Preparation

C10 – Using resources  
P8 - Space physics (P only)

B7 – Ecology  
C9 – The Atmosphere  
P7 – Magnetism

B6 – Inheritance, variation and evolution  
C8 – Chemical analysis  
P6 - Waves

C7 – Organic chemistry

You will learn about, photosynthesis, respiration, reactions of metal compounds and acids, different methods of extracting metals, how to make circuits consisting of a range of different components and how to calculate resistance.

You will learn about the energy changes in chemical reactions and different types of cells.

You will learn about homeostasis, the nervous system, hormonal systems in both animals and plants, rate of reaction, reversible reactions, equilibria, forces and their interactions, work done, energy transfers, elasticity.

B4 – Bioenergetics  
C4 – Chemical changes  
P2 - Electricity

C5 – Energy changes

B5 – Homeostasis and response  
C6 – The rate and extent of chemical change  
P5 - Forces

## YEAR 11

You will learn what causes diseases and how we can reduce and prevent the spread of disease, how to calculate the quantity of reactants/products in chemical reactions, the structure of the atom, half-life and different types of radiation.

You will learn about the different processes and systems in animal and plants, the different types of bonding and structures of materials and how this affects their properties, use the particle model to help explain internal energy and pressure changes.

You will learn about the structure of cells, how substances are transported in/out of cells, what is inside atoms, the patterns of elements on the periodic table, energy stores, how to calculate different types of energy.

B3 – Infection & response  
C3 - Quantitative chemistry  
P4 – Atomic structure

B2 - Organisation  
C2 – Bonding structure and properties  
P3 – Particle model of matter

B1 – Cell Biology  
C1 – Atomic structure and the periodic table  
P1 - Energy

## YEAR 10

You will learn what happens to atoms in chemical reactions. You will also find out how chemical reactions transfer energy and why chemical reactions are important.

You will learn how to extract metals from the Earth and what we can do to prevent vital resources from running out. You will also find out about the atmosphere and global warming.

Forces  
1.3, 1.4

Reactions  
6.3, 6.4

Ecosystems  
9.3, 9.4

Waves  
4.3, 4.4

Earth  
7.3, 7.4

Genes  
10.3, 10.4

You will understand how forces acting upon an object can explain how it is moving. You will also learn about pressure in fluids, floating and sinking.

You will learn how the body transfers energy from food by the process of respiration. You will find out how anaerobic respiration can be useful. You will also discover how plants make their own food through photosynthesis.

You will learn what affects the energy that waves transfer and how they interact with surfaces they hit and matter they travel through.

You will learn how organisms that exist today evolved and how scientists are trying to prevent extinction of species. You will also discover how you inherit characteristics through genetic material.

You will explore ways of classifying elements and find out about the patterns in their physical and chemical properties.

## YEAR 9

Electromagnets  
2.3, 2.4

Organisms  
8.3, 8.4

Energy  
3.3, 3.4

Matter  
5.3, 5.4

You will learn how to make a magnet using electricity and how to make it stronger. You will also learn about magnetic devices and how to model magnetic fields.

You will learn how we breathe and how smoking, drinking alcohol and taking drugs can damage us. You will discover what makes a balanced diet and how foods are broken down to release energy.

You will learn about doing work and transferring energy with radiation and particles.

Sound and light are waves. You will learn about hearing, loudness, pitch, how do we see objects and how light behaves.

You will learn about the chemical reactions of metals and acids. You will use patterns in properties to predict products in reactions.

Reactions  
6.1, 6.2

Electromagnets  
2.1, 2.2

Genes  
10.1, 10.2

Earth  
7.1, 7.2

Waves  
4.1, 4.2

You will learn about forces, how they arise, and how they change the motion of an object.

You will learn about what is happening in a circuit and how to model it, circuit components, electric charges and batteries.

You will learn what causes differences between organisms and how variation can help organisms survive. You will also learn about human reproduction and changes that happen during adolescence and pregnancy.

You will learn about the structure of the Earth and how materials are recycled. You will also learn about the size and scale of the Solar system and galaxy, along with the movement of Earth and the Moon.

Forces  
1.1, 1.2

Organisms  
8.1, 8.2

Matter  
5.1, 5.2

Ecosystems  
9.1, 9.2

Energy  
3.1, 3.2

Working scientifically

You will learn why you have a skeleton and how it works together with your muscles to enable movement. You will also look inside organisms to find out what they are made from.

You will learn why substances have different properties in their solid, liquid and gas states.

You will learn how organisms are connected and interact within ecosystems. You will also look closely at feeding relationships, competition and flowering plants.

Working scientifically gets you working in similar ways to scientists.

You will learn how to calculate energy and how to generate energy. You will learn about energy stores and energy transfers.

## YEAR 7

Welcome

