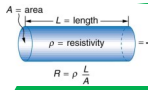




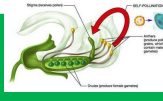
# Learning Journey Science

'Safe Happy Learning'

Measuring	Key Skills	Predicting
Classifying	Analysis	Inferring



Term 5



Term 6

Summer

### Resistance and Parallel Circuits

Electrical resistance and thickness and length of wire. Making parallel circuits, voltage, loops and measuring current. Comparing series and parallel circuits and mains electricity.

### Reproduction in Plants

Flower structure, pollination and fertilisation, insects and food security. Fruits and seeds, germination and facts affecting germination, seed dispersal.

Term 4



Term 3

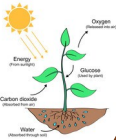
### Disease and Drugs

Infectious and non infectious diseases, gas exchange in healthy humans, lifestyle diseases, asthma, vaping and smoking. Recreational drugs, depressants, stimulants and solvent abuse.

### Carbon Cycle and Climate Change

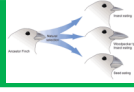
Formation of fossil fuels, gases in the atmosphere, atmospheric carbon, and the carbon cycle.

Spring



Yr 9

Term 1



Term 2

### Plants, Nutrition and Photosynthesis

Plant nutrition, photosynthesis, adaptations of plants and absorbing light, gas exchange and stomata.

### Adaptation, Competition, Natural Selection and Evolution.

Fossils how species change over time. Understanding time scales, heritable variations and natural selection, models of natural selection and evolution.

Autumn



Term 6



Term 5

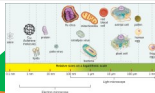
### Diet and Exercise

Good and ill health, balanced diet, food as a source of building materials and energy. Imbalanced diet, starvation and deficiency diseases, obesity. The effect of exercise on the human body, breathing and heart rate.

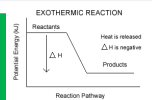
### Fuels and Energetics

Heating and cooling, cooling curve, exothermic and endothermic chemical reactions, comparing fuels, power stations and renewable energies sources.

Summer



Term 3



Term 4

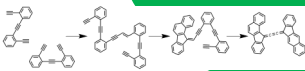
Spring

### Species and Classification/ Variation within Species

Classifying organisms, classification in the field and classification at a cellular level. Variations within species

### Series Circuits

Chemical reactions and the principle of conservation of mass. Word equations. Exothermic and endothermic reactions. What are acids and alkalis. Using indicators. Neutralisation reactions to make salts.



Term 2



Term 1

Yr 8

### Understanding Chemical reactions

Acids, metals and carbonates

### Moving by Force

Measuring speed, interpreting distance—time graphs, changing speed and Newton's first Law.

### Biodiversity

Interdependence between ecosystems. Plants and animals are adapted for their environment. Ecological sampling of living organisms and conserving biodiversity

Autumn

Term 5



Term 6

Summer

### Alkaline and Acids

Chemical reactions and the principle of conservation of mass. Word equations. Exothermic and endothermic reactions. What are acids and alkalis. Using indicators. Neutralisation reactions to make salts.

### Sound /Light

Describing sound waves. Understanding oscilloscope traces. Describing how we can insulate sound. Describing how sound and ultrasound can be used. Use the terms transparent, translucent and opaque correct, refraction, properties of different longitudinal and transverse waves.

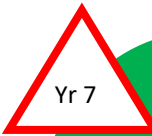
Term 4

Term 3

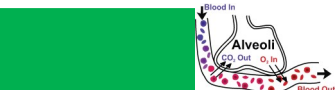


**Forces and Space**  
What are forces? Balanced and unbalanced forces. Objects in the solar system

**Particles/Atoms/Compounds**  
Particle model, change of state. Diffusion and gas pressure. Differences between atoms elements and compounds. Writing basic chemical formula.



Term 1



Term 2



**Cells/Reproduction/Structures and Functions/**  
Basic structure of animal and plant cells. Movement of substances across membranes. Reproduction in mammals and plants. Cells, tissues and organs. Gas exchange. The skeleton, muscles and joints.

**Atoms Elements and Compounds**  
What are atoms and elements. How can we represent chemicals using symbols. Definitions of atom and element. The difference between physical and chemical properties.



Term 6



Term 5

**Fossils**  
Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Consolidating information and learning.

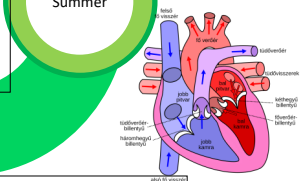
**Variation and Adaptation**  
Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.



Term 3

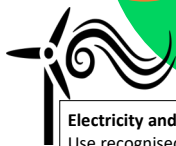


Term 4



**Light and Light Pollution**  
Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Light pollution, glare, light trespass, skyglow.

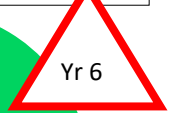
**The Circulatory System**  
Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Describe the ways in which nutrients and water are transported within animals, including humans.



Term 2



Term 1

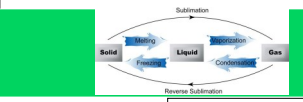
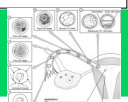


**Electricity and Renewable Energy**  
Use recognised symbols when representing a simple circuit in a diagram. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches. What is renewable energy.

**Living Things and Their Habitats**  
Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals.



Term 5



Term 6



**Reproduction**  
Describe the life process of reproduction in some plants and animals. Male and female parts of plants, pollination and fertilisation. Sexual reproduction in mammals—fertilisation, egg cell and embryo.

**Reversible and irreversible changes**  
Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Plastics and pollution



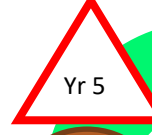
Term 3



Term 4

**Animals including Humans/Life cycles**  
Describe the changes as humans develop to old age. Including adolescence and puberty, periods, hormones and reproduction. Adulthood and the elderly.

**Properties of Materials**  
Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets.



Term 1



Term 2

**Forces**  
Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Forces, contact force, friction and motion. Air resistance, water resistance and gravity.

**Space**  
Solar system, planets, orbit and the sun. Describe the Sun, Earth and Moon as approximately spherical bodies.



Term 6

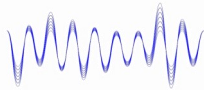


Term 5

**Digestive system/ Food Chain**  
Comparing the teeth of carnivores and herbivores and suggesting reasons for differences. Identify the different types of teeth in humans and their simple functions. Describe the simple functions of the basic parts of the digestive system in humans. Construct and interpret a variety of food chains, identifying producers, predators and prey.

**Habitats—impact of Humans**  
Recognise that environments can change, and that this can sometimes pose dangers to living things. Deforestation, natural resources and the effect on the environment and biodiversity.





Term 3

Term 4

Spring

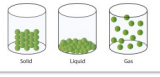
**Sound/Analysing Data**

Recognise that vibrations from sounds travel through a medium to the ear. Identify how sounds are made, associating some of them with something vibrating. Explore and use classification keys to help group, identify and name a variety of living things in their local

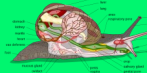
**Electricity—Energy**

Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. Energy that flows in wire, appliances and energy uses.

Term 2



Term 1



Yr 4

Autumn

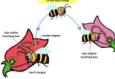
**State of Matter**

Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

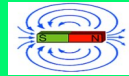
**Grouping and classifying Living Things**

Recognise that living things can be grouped in a variety of ways—plants, animals vertebrate and invertebrate. Explore and use classification keys to help group, identify and name a variety of living things in ir local and wider environment

Term 5



Term 6



Summer

**Living Things – plants**

Look at flowers and understand how pollination, seed formation and seed dispersal play a part in the life cycle of a plant. Learn how water is transported inside plants. Learn about the functions of the parts of a plant

**Forces and Magnets**

Compare how things move on different surfaces, push, pull, friction and contact force. Say whether two magnets will attract or repel each other Describe magnets as having 2 poles. Identify materials that are attracted to magnets. Notice that magnetic forces can act at a distance, they don't require contact

Term 4

Term 3



**Light and shadows**

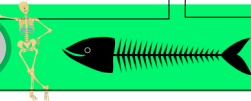
Look at the patterns of changing size of shadows. Notice that shadows are formed when light is blocked by an object. Realise that the sun can be dangerous. Notice that light is reflected from surfaces. Understand that you need light to see things and darkness is the absence of light

**Fossils and soil**

Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Fossilisation – the process through which a fossil is formed. Investigate soil types—chalky, sandy, clay and peat, how they were formed and their properties. Recognise they are made from rock particle.

Spring

Term 1



Term 2



Yr 3

**Animals**

Identify that humans and other animals have skeletons and muscles for support, protection and movement. Identify bones in human and animal skeletons and animals with and without spines. Identify that animals and humans, need the right types and amount of nutrition from the food they eat.

**Materials—Rocks**

Understand that soils are made from rock and organic matter. Compare and group together different rocks from their appearance and simple physical properties. Rocks have different textures, properties and appearances and that rocks can change over time

Autumn

Term 6



Term 5



**Growing Up - Animals and Human**

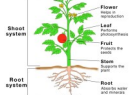
Lifecycles, parents and offspring, notice that animals, including humans produce young that grow into adults. Reptiles, amphibians and birds and most insects lay eggs. These are their offspring. Amphibians can live on land and in water

**Bulbs and seeds**

Identify and label the differences and similarities between bulbs and seeds. Observe and describe how seeds and bulbs grow into mature plants. Record and communicate their findings using simple scientific vocabulary

Summer

**Parts of a Plant**



Term 3



Term 4



Spring

**Living Things -Plants (light and dark)**

What do plants need to grow—water, light and suitable temperature. Investigating the effects light and dark. Identifying— flowers, fruit, vegetables and herbs comparing similarities and differences, labelling parts of plants, experimenting with growing their own

**Living Things - Habitats**

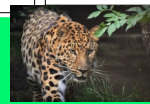
Identify habitats—deserts, woodland, polar, oceans. Identify plants and animals that live in each habitat including carnivores, herbivores, birds, reptiles and fish. Investigating how environmental conditions effect habitats

Yr 2

Term 2



Term 1



Autumn

**Exploring Material**

Identify wood, plastic, glass, metal, water and rock. Describe the simple properties of wood, plastic, glass, metal, water and rock. Group materials on the basis of their properties and recycling

**Animals and Humans**

Identify and name fish, amphibians, reptiles, birds and mammals. Identify and name animals that are carnivores, herbivores and omnivores