**Science at Mount Primary**

**Long Term Plan**

**Key Concepts**

**Working Scientifically:**

Learning the methodologies of the discipline of science

**Biology:**

Understand plants – becoming familiar with different types of plants, their structure and reproduction

Understand animals and humans- becoming familiar with different types of animals, humans and the life processes they share

Investigating living things- becoming familiar with a wider range of living things including insects and understanding life processes

Understand evolution and inheritance- understanding that organisms come into existence, adapt, change and evolve and become extinct

**Chemistry**

Investigate materials- becoming familiar with a range of materials, their properties, and uses and how they may be altered or changed

**Physics**

Understand movement, forces and magnets- understanding what causes motion

Understand the Earth’s movement in space- understanding what causes seasonal changes, day and night

Investigating light and seeing- understanding how sound is produced, how it travels and how it is heard

Understand electrical circuits- understanding circuits and their role in electrical appliances

**Topics**

| **Year** | **Topic** | **Overview** | **Rationale** |
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| EYFS |  | - Know about growth and decay in living things – that plant needs water and light to survive and will wither and die without them. That food; fruit, vegetables, bread, yoghurt etc will start to rot and decay due to micro-organisms such as bacteria**,** yeasts and fungi feeding on the fruit and breakingit down.  - Know in order for living things to survive they need air, water, food, light, shelter. | Practical activities to explore growth and change in outdoor and indoor classroom – growing seeds and plants, caterpillars, ladybirds and tadpoles.  Opportunities to develop local environment and discuss the impact we have on it and how we can care for it. |
| Year 1 | Seasonal Changes | Name the season and months of the year  Describe types of weather  Understand the features of different seasons  Explore the general types of weather | Links with weather in Y1 Geography curriculum |
|  | Animals including humans | Name different types of animals  Explore body parts and how we use them  Name and understand the senses |  |
|  | Everyday materials | Name everyday materials  Understand that materials have different uses  Classify materials and explore the suitability | Links with STEM and DT |
|  | Plants | Name and locate different types of leaves and plants  Sort and classify different parts of the plant/tree  Explore how plants change over time  Explore different types of trees | Taught in the summer term to allow children to experience growth and change practically  Build on EYFS ‘Understanding of the World’ curriculum |
| Year 2 | Living things and their habitats | Understand living, dead and never lived  Understand a habitat and a micro-habitat and explore different habitats  Explain a food chain | Links to local area and habitats- beach, parks |
|  | Materials | Name, describe and sort properties of common materials  Understand that materials can change | Links with STEM and DT  Build of vocabulary from Year 1- describing properties |
|  | Animals including humans | Understand different stages of life and the life cycle of some animals  Explore the basic needs of a human  Understand good hygiene  Importance of exercise and understand the importance of a healthy diet | Links with PSHE and PE curriculum  Build on EYFS and Y1 curriculum and managing basic needs |
|  | Plants | Name the parts of a plant including bulbs and plants with fruits  Understand germination  Name some common plants and explore what they need to grow | Taught in the summer term to allow children to experience growth and change practically  Build upon Y1 curriculum when naming plants and the parts of the plant |
| Year 3/ 4  Cycle A | Animals including humans | Learn terms and definitions for carbohydrates, proteins, vitamins & minerals, fibre  Plan balanced menu with all food groups  Name and locate some bones in the skeleton and state some purposes  Compare skeletons of different mammals | Links with PSHE and PE curriculum  Build on animal knowledge from KS1 lessons |
|  | Light | Understand light and darkness  Understand terms transparent, translucent and opaque and classify objects  Investigate changing shadows |  |
|  | Rocks | Describe properties of rocks  To know how fossils are formed  Understand what soil is and how its properties vary  Investigate properties of soils |  |
|  | Forces and magnets | Understand what a force is and how objects move on surfaces  Investigate everyday materials in terms of being magnetic/non-magnetic  Explore how magnets attract and repel each other |  |
|  | Plants | Identify the parts of flowering plants and their functions  Understand what plants need to grow  Understand how water is transported in plants  Explore pollination  Understand seed formation and dispersal  Explore the life cycle of flowering plants and the importance of flowers | Building on KS1 lessons  Taught in the summer term to allow children to experience growth and change practically |
| Year 3/ 4 Cycle B | Living things and their habitats | Understand why animals change their habitat  Understand the difference between vertebrates and invertebrates  Explore how humans have an impact the environment |  |
|  | Animals including humans | Understand the digestive system  Understand the different types of teeth  Know the different types of animals and understand food chains |  |
|  | States of matter | Understand states of matter  Explore states of matter and their properties  Understand and describe the water cycle |  |
|  | Sound | Understand how we hear  Explore sound and investigate sound insulation |  |
|  | Electricity | Identify electrical appliances  Create a circuit using electrical components |  |
| Year 5/6 | Animals including humans | Understand the circulatory system and understand how organs in the body  Explore a healthy diet  Understand gestation for different animals including humans | Links with Y1 naming the different parts of the body  Building on Y2 knowledge of healthy diet |
|  | Light | Explore how shadows are formed  Investigate and explore light sources | Use knowledge from Y3/4 Light topic |
|  | Evolution and inheritance | Understand evolution and explore how plants/animals have changed/adapted  Have an awareness of inheritance and characteristics  Understand natural selection  Explore the importance of fossils | Links with ‘Animals including humans’ previously taught in KS1 and LKS2 |
|  | Earth and Space | Identify different parts of the solar system  Name the planets and understand orbits and how long they take  Explore the position of the earth |  |
|  | Electricity | Understand what makes a complete circuit and identify symbols  Understand how and why switches and motors are used |  |
| Year 5/ 6  Cycle B | Forces | Understand forces and how they are measured  Explore forces that act between moving surfaces  Explore real-life examples of forces |  |
|  | Properties and changes of materials | Explore how matter can change state  Understand the difference between a thermal insulator and thermal conductor |  |
|  | Living things and their habitats | Understand vertebrate and invertebrate  Explore how plants create their own food chain  Compare different types of animals  Understand different types of reproduction  Explore metamorphism  Understand how life cycles differ |  |