**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 yearDescribe types of weatherUnderstand 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 usesClassify materials and explore the suitability  | Links with STEM and DT |
|  | Plants | Name and locate different types of leaves and plantsSort and classify different parts of the plant/treeExplore how plants change over timeExplore 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 livedUnderstand 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 materialsUnderstand that materials can change  | Links with STEM and DTBuild of vocabulary from Year 1- describing properties  |
|  | Animals including humans | Understand different stages of life and the life cycle of some animalsExplore the basic needs of a humanUnderstand good hygieneImportance 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 fruitsUnderstand 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 practicallyBuild 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, fibrePlan balanced menu with all food groupsName and locate some bones in the skeleton and state some purposesCompare skeletons of different mammals | Links with PSHE and PE curriculum Build on animal knowledge from KS1 lessons  |
|  | Light | Understand light and darknessUnderstand terms transparent, translucent and opaque and classify objectsInvestigate changing shadows |  |
|  | Rocks | Describe properties of rocksTo know how fossils are formedUnderstand what soil is and how its properties varyInvestigate properties of soils |  |
|  | Forces and magnets | Understand what a force is and how objects move on surfacesInvestigate everyday materials in terms of being magnetic/non-magneticExplore how magnets attract and repel each other |  |
|  | Plants  | Identify the parts of flowering plants and their functionsUnderstand what plants need to growUnderstand how water is transported in plantsExplore 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 systemUnderstand the different types of teeth Know the different types of animals and understand food chains  |  |
|  | States of matter | Understand states of matterExplore states of matter and their properties Understand and describe the water cycle  |  |
|  | Sound  | Understand how we hearExplore 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 bodyExplore a healthy dietUnderstand gestation for different animals including humans  | Links with Y1 naming the different parts of the bodyBuilding 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/adaptedHave an awareness of inheritance and characteristicsUnderstand 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 systemName the planets and understand orbits and how long they takeExplore 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 measuredExplore forces that act between moving surfacesExplore real-life examples of forces |  |
|  | Properties and changes of materials  | Explore how matter can change stateUnderstand 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  |  |