**Science Overview – Year Four**

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|  | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year Four** | **States 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.  \*Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.  Pupils should explore a variety of materials and develop simple descriptions of states of matter.  Pupils should understand and describe materials which are solids, liquids and gases.  Pupils should undertake practical investigations to show how solids, liquids and gases change states. For example – when an ice cube (solid) is heated then it becomes water (liquid) or how water evaporates when heated and how it comes a gas. | **States 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.  \*Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.  Pupils should explore a variety of materials and develop simple descriptions of states of matter.  Pupils should understand and describe materials which are solids, liquids and gases.  Pupils should undertake practical investigations to show how solids, liquids and gases change states. For example – when an ice cube (solid) is heated then it becomes water (liquid) or how water evaporates when heated and how it comes a gas. | **Sound**  \*Identify how sounds are made, associating some of them with something vibrating.  \*Recognise that vibrations from sounds travel through a medium to the ear.  \*Find patterns between the pitch of a sound and features of the object that produced it.  \*Find patterns between the volume of a sound and the strength of the vibrations that produced it.  \*Recognise that sounds get fainter as the distance from the sound source increases.  Pupils will be able to understand how sound travels in sound waves. They will be able to understand that sound is made through vibrations. They will see this clearly through a practical demonstration of an acoustic guitar. Pupils will learn how pitch, tone and volume can be changed in a variety of ways. | **Electricity**  \*Identify common appliances that run on electricity.  \*Construct a simple series electrical circuit, identifying and naming its basic pats, including cells, wires, bulbs, switches and buzzers.  \*Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.  \*Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  \*Recognise some common conductors and insulators, and associate metals with being good conductors.  Pupils will be able to construct a series of simple circuits including – bulbs, cells (batteries), switches and motors.  Pupils will be able to draw circuits using pictorial representations using the correct scientific circuit symbols.  Pupils should be taught about the dangers of electricity and will understand man-made and natural sources of electricity. | **Animals including humans (teeth and digestion)**  \*Describe the simple functions of the basic parts of the digestive system in humans.  \*Identify the different types of teeth in humans and their simple functions.  Pupils will be taught about the main parts of the digestive system and their role in successful digestion in the human body. For example: the mouth, teeth, oesophagus, stomach, small/large intestine and anus.  Pupils will also learn about the different roles of different teeth in the human mouth. For example: incisors, molars, canines etc.  **Animals including humans (food chains)**  \*Construct and interpret a variety of food chains, identifying producers, predators and prey.  Pupils should learn about different terms such as: predator, prey and consumer. They should be able to organise animals into these groups and create, label and describe different food chains. | **Living things and their habitats**  \*Recognise that living things can be grouped in a variety of ways.  \*Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.  \*Recognise that environments can change and that this can sometimes pose dangers to living things (including global warming and acid rain impact).  Pupils will learn about the local environment throughout the half-term to identify and study plants and animals in their local habitat.  Pupils will identify how the habitat of different animals’ changes throughout different seasons and climates.  Pupils will be able to group a wide variety of living things that include animals and plants.  Pupils should be able to understand the term vertebrate and group animals into categories including fish, amphibians, reptiles, birds and mammals.  They should be able to group and recognise invertebrates such as: snails, slugs and worms.  Pupils should explore and write a balanced argument related to the positives and negatives of human impact on the environment. Thus, including littering in the oceans, deforestation, garden ponds etc. |

**Throughout the course of the year – pupils will also cover the working scientifically objectives as listed below:**

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| Ask relevant questions and use different types of scientific enquiries to answer them |
| Set up simple practical enquiries, comparative and fair tests |
| Make systematic and careful observations and, where appropriate take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers |
| Gather, record, classify and present data in a variety of ways to help in answering questions |
| Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables |
| Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions |
| Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions |
| Identify differences, similarities or changes related to simple scientific ideas and processes |
| Use straightforward scientific evidence to answer questions or to support their findings |

**Science 2019/20 is currently being taught alternate weeks alongside Philosophy for Children.**