BRABIN'S ENDOWED PRIMARY SCHOOL

Science Curriculum Overview

Cycle A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1/2	**Animals including humans (Humans)**	**Senses**	**Plants (Identify and describe)**	**Being Scientists (We are Scientists)**	**Animals including humans (Exercise and hygiene)**	**Everyday materials**
Key Learning	*notice that animals, including humans, have offspring which grow into adults *identify, name, draw and label the basic parts of the human body * ask simple questions and recognising that they can be answered in different ways *use their observations and ideas to suggest answers to questions *take accurate measurements using simple equipment *gather and record data to help answer questions	*say which part of the body is associated with each sense *observing closely, using simple equipment *performing simple tests *gather data and record	*identify and name a variety of common wild and garden plants, including deciduous and evergreen trees *identify and describe the basic structure of a variety of common flowering plants, including trees	*asking simple questions and recognising that they can be answered in different ways *observe closely, using simple equipment *perform simple tests *use their observations and ideas to suggest answers to questions	*find out about and describe the basic needs of animals, including humans, for survival (water, food and air) *describe the importance for humans of exercise, eating the right amounts of different types of food *recognise the importance of hygiene	*distinguish between an object and the material from which it is made *identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock *describe the simple physical properties of a variety of everyday materials *sort and classify materials according to their properties

Year 3/4						
	Teeth and the Digestive system	***Rocks and Fossils***	***Light and Shadows***	***Plants-functions or parts and plant growth***	**Electricity- series circuits, switches, conductors and insulators**	***Famous European Scientist Investigations***

Key Learning	*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 *construct and interpret a variety of food chains, identifying producers, predators and prey	*compare and group together different kinds of rocks on the basis of their appearance and simple physical properties *describe in simple terms how fossils are formed when things that have lived are trapped within rock *recognise that soils are made from rocks and organic matter	*recognise that they need light in order to see things and that dark is the absence of light *notice that light is reflected from surfaces *recognise that light from the sun can be dangerous and that there are ways to protect their eyes *recognise that shadows are formed when the light from a light source is blocked by an opaque object *find patterns in the way that the size of shadows change	*identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers *explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant *investigate the way in which water is transported within plants *explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	*identify common appliances that run on electricity *construct a simple series electrical circuit, identifying and naming its basic parts, 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.	*gathering, recording, classifying and presenting data in a variety of ways to help in answering questions *recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables *reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions *using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions *identifying differences, similarities or changes related to simple scientific ideas and processes

Year 5/6	**Electricity**	**Life Cycles: animals and plants**	**Reversible and Irreversible Changes**	**Investigation week and Famous Scientists**	**Earth and Space**	**Human Body: exercise, nutrition and the heart Human Life Cycles**

Key Learning	**to recognise a series circuit* **how does the number of cells in a circuit affect the brightness of a bulb or volume of a buzzer?* **Recognise circuit symbols and the item in the circuit they represent.*	*To know the life cycles of a mammal, an amphibian, an insect and a bird. *How do they compare? *To understand how animals reproduce sexually. *To know the difference between sexual and asexual reproduction in plants.	*to know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. *To decide how mixtures might be separated, including through filtering, sieving and evaporating. *To understand that dissolving, mixing and changes of state are reversible change. * Understand that some changes result in the formation of new materials and are irreversible, for example burning .	*Plan different types of scientific enquiries including variables * To make predictions and reporting findings from enquiries * Identify scientific evidence that has been used to support or refute ideas or arguments	* To know that the Sun, Earth and Moon are spherical shaped *Describe the movement of the Earth and other planets in the solar system. *Describe how the moon moves in relation to the Earth. * To explain how day and night are caused by the movement of the Earth orbiting the Sun.	**To describe the changes as humans develop to old age.* * Know the main parts of the human circulatory system. *Describe the functions of the heart, blood vessels and blood. *Know the impact of diet, exercise, drugs and lifestyle on a person's body. *Understand how nutrients and water are transported within animals, including humans.
Cycle B	***Autumn 1***	***Autumn 2***	***Spring 1***	***Spring 2***	***Summer 1***	***Summer 2***
Year 1/2	**Animals including humans (Classification of animals)**	**Seasonal change (ongoing throughout the year)**		**Living things and their habitats**	**Plants (Growth)**	**Uses of Everyday Materials**

Key Learning	*identify and name a variety of common animals including fish, amphibians, reptiles, mammals and birds *identify and name a variety of common animals that are carnivores, herbivores and omnivores *describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, and mammals, including pets) *identifying and classifying *using their observations and ideas to suggest answers to questions	*observe changes across the four seasons *observe and describe weather associated with the seasons and how day length varies. *identify how the changing seasons affect the people, plant life and animal life. * observing closely, using simple equipment *gather information and record in charts and tables		*explore and compare the differences between things that are living, dead, and things that have never been alive *identify that most living things live in habitats to which they are suited *describe how different habitats provide for the basic needs of different kinds of animals and plants *identify and name a variety of plants and animals in their habitats, including micro-habitats *describe how animals obtain their food from plants and other animals *Classify objects found in the local environment. *Create simple food chains for a familiar local habitat from first-hand observation and research.	*observe and describe how seeds and bulbs grow into mature plants *find out and describe how plants need water, light and a suitable temperature to grow and stay healthy *ask simple questions and recognise that they can be answered in different ways *observe closely using simple equipment *record their observations in different ways	*identify and compare the suitability of a variety of everyday materials for particular uses (include wood, metal, plastic, glass, brick, rock, paper and cardboard) *recognise how the shape of some materials can be changed by squashing, bending, twisting and stretching *sort and classify materials *test materials and gather evidence *use evidence to help answer questions
Year 3/4	**Sound**	**States of Matter**	**Healthy Lifestyles and Nutrition**	**Investigations/ Enrichment**	**Habits and animals**	**Forces**

Key Learning	*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.	*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) *identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	*identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat *identify that humans and some other animals have skeletons and muscles for support, protection and movement	*asking relevant questions and using different types of scientific enquiries to answer them *setting up simple practical enquiries, comparative and fair tests *making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers *using straightforward scientific evidence to answer questions or to support their findings.	*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	*compare how things move on different surfaces *notice that some forces need contact between two objects, but magnetic forces can act at a distance *observe how magnets attract or repel each other and attract some materials and not others *compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials *describe magnets as having two poles *predict whether two magnets will attract or repel each other, depending on which poles are facing
Year 5/6	**Forces**	**Light reflection and shadows**	**Evolution and Inheritance**	**Material properties**	**Investigations/ Enrichment**	**Animal Classification**
Key Learning	*Understand that objects fall towards the Earth because of the force of gravity . *Identify the effects of air resistance, water resistance and friction *Recognise that some mechanisms (levers, pulleys and gears) allow a smaller force to have a greater effect.	*Know that light appears to travel in straight lines. * To explain to how objects are seen because of the reflection of light into the eye. *To explain why shadows have the same shape as the objects that cast them.	*To know that that living things have changed over time and that fossils show us about the past. * To understand that living things produce offspring of the same kind, which vary and are not identical to their parents. *To know how animals and plants are adapted to suit their environment in different ways and that this may lead to evolution.	*To be able to compare and group together everyday materials on the basis of their properties. *To understand the terms hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. *Give reasons for the uses of everyday materials, including metals, wood and plastic.	*To take measurements, using a range of scientific equipment, with precision, repeat readings for increasing accuracy *To record data and results of using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	* To know how living things are classified into broad groups *To know that characteristics and similarities and differences determine groupings of micro-organisms, plants and animals. *To give reasons for classifying plants and animals based on specific characteristics.