Broxbourne CE Primary School Science Overview

Enquiry key:
Comparative and fair testing Observation over time Pattern seeking Identifying, classifying and grouping Research

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EY1	Autumn/Winter		Spring Different types of animals Healthy eating		Summer Planting and growing Looking after our teeth	
EY2	Healthy eating Looking after our teeth \ good oral hygiene Animals Ourselves and Creatures Autumn/Winter Minibeasts		Growing and Farming Living things – eggs and lifecycles Plants/Food Spring		Clothes for the season Summer Habitats and Homes	
Year 1	**Seasonal Changes** Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies					
	Everyday Materials		**Animals, Including Humans**		**Plants**	
Key Aims and Objectives	• Distinguish between an object and the material it is made from • Identify and name a variety of materials • Describe the simple physical properties of materials and compare and group them together		• Identify and name animals (carnivores, herbivores and omnivores) • Describe and compare the structure of a variety of animals • Identify, name, draw and label the basic parts of the human body		• Identify and name a variety of plants, including deciduous and evergreen trees • Identify and describe the basic structure of a variety of common flowering plants, including trees	
Enquiry Mapping	Observation over time – e.g. leaves changing colour & falling from the trees; changes in weather; collecting weather data changes in hours of daylight shoots and flowers	Identifying, classifying and grouping – e.g. which materials will keep us warm? Protect an egg? Are waterproof? Sorting objects by material. Comparative and fair testing – e.g.	Observation over time – e.g. leaves changing colour & falling from the trees; changes in weather; collecting weather data changes in hours of daylight shoots and flowers	Identifying, classifying and grouping – e.g. what characteristics do all mammals share? Sorting animals into groups; sorting animals into omnivores/herbivores/ carnivores.	Observation over time – e.g. growing plants from seeds/bulbs. Pattern seeking – e.g. Do taller plants grow from larger seeds? Do all beans curl clockwise as they grow?	Observation over time – e.g. leaves changing colour & falling from the trees; changes in weather; collecting weather data changes in hours of daylight shoots and flowers

Year 2	**Animals Including Humans – Growth and Survival**	**Uses of Everyday Materials**	**Plants**	**Living Things and their Habitats**
Key Aims and Objectives	• Notice that animals, including humans, have offspring which grow into adults • Find out about and describe the basic needs of animals • Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	• Identify and compare the suitability of a variety of everyday materials for particular uses • Find out how the shapes of solid objects made from some materials can be changed	• 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	• 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 and describe how different habitats provide for the basic needs of different kinds of animals and plants

Broxbourne CE Primary School Science Overview

				• Identify and name a variety of plants and animals in their habitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain
Enquiry Mapping	Identifying, classifying and grouping - sorting animals in to relevant animal group, life cycles of animals Research- animals groups & athletes diets and exercise	Identifying, classifying and grouping - classifying materials based on their properties Comparative and fair testing - Investigating properties of materials (Are they bendy? Can they be changed?)	Observation over time/fair testing - observing beans growing and recording observations. Comparing the growth of plans in the dark/light/water/no water etc. Pattern seeking- growing bean plants	Identifying, classifying and grouping -sorting animals based on habitats and identifying animals based on footprints/habitat etc.

Year 3	Animals – Nutrition, Skeletons, Muscles and Movement	Light	Forces and Magnets	Rocks	Plants
Key Aims and Objectives	• 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	• Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous • Recognise that shadows are formed when the light from a light source is blocked by a solid object • Find patterns in the way that the size of shadows change	• Compare how things move on different surfaces • Observe how magnets attract or repel each other • Compare and group together a variety of materials on the basis of whether they are attracted to a magnet • Describe and investigate magnetic poles	• Compare and group together different kinds of rocks • 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	• Identify and describe the functions of different parts of flowering plants • Explore the requirements of plants for life and growth and how they vary from plant to plant • Investigate how water is transported within plants • Explore the life cycle of flowering plants
Enquiry Mapping	Identifying, classifying and grouping – Food groups/What do our pets eat? Sorting skeleton types Pattern seeking – Mighty muscles	Comparative and fair testing -Investigating length of shadows	Comparative and fair testing - Investigating Friction, investigating the strength of different magnets Pattern seeking - Investigating light with mirrors	Identifying, classifying and grouping - compare different types of rocks Research - How are fossils formed? Mary Anning Comparative and fair testing - Investigating the permeability of different soils	Comparative and fair testing/Observation over time - What do plants need to grow well? Investigating how water moves through plants

Year 4	All Living Things – Grouping and Classifying living things	Electricity	Sound	Animals Including Humans – Digestive System, Teeth, Food Chains	States of Matter

Broxbourne CE Primary School Science Overview

Key Aims and Objectives	• Explore and use classification keys to help group, identify and name a variety of living things • Recognise that environments can change and that this can pose dangers to living things; Man-made and natural changes	• Identify common appliances that run on electricity • Construct a simple series electrical circuit • Identify whether or not a lamp will light in a simple series circuit • Recognise the effect of switches • Recognise some common conductors and insulators	• Identify how sounds are made, linking 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	• 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 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
Enquiry Mapping	Identifying, classifying and grouping -Keys, Venn diagrams	Research - Biography of Thomas Edison Identifying, classifying and grouping - using circuits to identify which materials are conductors and insulators of electricity	Research- researching the ear and how it works Pattern seeking - whole school sound survey	Observation over time/Comparative and fair testing (teeth) - How different drinks affect your tooth enamel Identifying, classifying and grouping (digestive system) – sorting stomach types	Identifying, classifying and grouping – solids, liquids and gases Comparative and fair testing - Which material is a good insulator?

Year 5	Forces	Living Things and their Habitats	Earth and Space	Properties and Changes of Materials
Key Aims and Objectives	• Explain that unsupported objects fall towards the Earth because of the force of gravity • Identify the effects of air resistance, water resistance and friction, that act between moving surfaces • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • Describe the life process of reproduction in some plants and animals • Describe the changes as humans develop to old age	• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system • Describe the movement of the Moon relative to the Earth • Describe the Sun, Earth and Moon as approximately spherical bodies • Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky	• Compare and group together everyday materials on the basis of their properties and response to magnets • 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 • Give reasons, based on

				evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic • Demonstrate that dissolving, mixing and changes of state are reversible changes • Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible
Enquiry Mapping	Comparative and fair testing – Air resistance (parachutes)/ Friction Research – Gravity, streamlined designs	Pattern seeking - comparing data linked to animal gestation period and life cycle Observation over time – asexual plant reproduction Research – mammal research/ computing link	Research – solar system, sun, famous astronomers Identifying, classifying and grouping – grouping planets according to similarities and differences	Identifying, classifying and grouping – identifying and sorting materials with similar and different properties Observation over time – separating materials, irreversible changes, dissolving Comparative and fair testing – conductors and insulators

Year 6	Animals Including Humans	Living Things and their Habitats	Evolution and Inheritance	Light	Electricity
Key Aims and Objectives	• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood • Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans	• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics	• Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • 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	• Recognise that light appears to travel in straight lines • Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye • Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then our eyes • Use the idea that	• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • 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 • Use recognised symbols when representing a simple circuit in a diagram

			adapted to suit their environment in different ways and that adaptation may lead to evolution	light travels in straight lines to explain why shadows have the same shape as the objects that cast them		
Enquiry Mapping	Research - the human body Observation over time/Comparative and fair testing - How heartrate changes with exercise	Pattern seeking - How things grow, what they need. Identifying, classifying and grouping - classification keys to identify animals, investigating habitats Observation over time/Comparative and fair testing - mould investigation.	Pattern seeking - beak investigation	Comparative and fair testing - Refraction of light experiments, light investigation	Research - famous scientists Comparative and fair testing - investigating circuits	