Coleridge Primary School

SCIENCE

CREATIVE, CARING, RESILIENT

Whole School Progression Map

	EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
PLANTS	Examine change over time, for example, growing plants, and change that may be reversed, e.g. melting ice. • We plant seeds, plants, vegetables, bulbs and look at how they grow over time. Make predictions. • Look at parts of the flowers and plants • Investigate how plants absorb water by looking at colour experiment using flowers. • What insects are attracted to plants and pollination.	• 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.	• 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. **(Y2 - Living things and their habitats)**	• 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.	• Recognise that living things can be grouped in a variety of ways**. (Y4 - Living things and their habitats)** • Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. **(Y4 - Living things and their habitats)** • Recognise that environments can change and that this can sometimes pose dangers to living things**. (Y4 - Living things and their habitats)**	• Describe the life process of reproduction in some plants and animals. **(Y5 - Living things and their habitats)**	• 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. **(Y6 - Living things and their habitats)** • Give reasons for classifying plants and animals based on specific characteristics**. (Y6 - Living things and their habitats)**
ANIMALS, INCLUDING HUMANS	Talk about members of their immediate family and community. • Name and describe people who are familiar to them, what makes us different. Paint portraits Look at body parts and people who work to help ud duch as doctors, dentists. A visit from the dental nurse and teeth models always present in the Nursery for children to play with. Using our senses. We look at the 5 senses.	• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • 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 (fish, amphibians, reptiles, birds and mammals, including pets) • identify, name, draw and label the basic parts of the human body and say which	• notice that animals, including humans, have offspring which grow into adults • 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, and hygiene. • Identify and name a variety of plants and animals in their habitats, including microhabitats**. (Y2 - Living things and their habitats)**	• 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.	• 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.	• describe the changes as humans develop to old age. • Identify and name a variety of plants and animals in their habitats, including microhabitats. **(Y2 - Living things and their habitats)**	• 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

	Habitats, animals through the different seasons and their behaviour. Use stories and no fiction books to discuss different types of animals. We discuss characteristics of animals, we classify and group them in many ways, such as where they live, habitats, what they eat. Use vocabulary mammals, reptiles, birds. • Recognise some environments that are different to the one in which they live.	part of the body is associated with each sense					and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats) • Give reasons for classifying plants and animals based on specific characteristics**. (Y6 - Living things and their habitats)**
MATERIALS	• Teach skills and knowledge in the context of practical activities, e.g. learning about the characteristics of liquids and solids by involving children in melting chocolate or cooking eggs. • Explore the natural world around them. • Cooking once a week. Effects of heat and cold on different ingredients. Carry out experiments on how we make ice and the effects of heat. Play and experiment with different materials such as flour, water, paint, water. Introduce language such as solid, liquid, gas and what this might look like. Look at different materials, grouping according to their properties such as card, plastic, metal. Look at how to change the materials and sort for recycling. Colour mixing using paints, playdough, food colouring.	• 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 • compare and group together a variety of everyday materials on the basis of their simple physical properties.	• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses • find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	• Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. **(Y3 - Rocks)** • Describe in simple terms how fossils are formed when things that have lived are trapped within rock**. (Y3 - Rocks)** • 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**. (Y3 - Forces and magnets)**	• 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.	• compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), 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, including through filtering, sieving and evaporating • 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, including changes	

	Testing materials when building constructions for strength and appropriateness. Making lava lamps using oil, water, alka seltzer. Mixing oil and water.					associated with burning and the action of acid on bicarbonate of soda.	
THE SEASONS	• Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Understand the effect of changing seasons on the natural world around them. We focus everything around the seasons and what the children see around them. Looking at change, habitats, weather, environment, clothes. Every season children are taken on a walk to observe characteristics and changes.	• observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies.		• Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. **(Y3 - Light)**		• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. (Y5 - Earth and space)	
ALL LIVING THINGS AND THEIR HABITATS	As above We have tadpoles, caterpillars in the classrooms to observe, and watch grow. We also look at what bugs are around in our environment such as ladybird lifecycles. Make bird feeders, bird houses, bug hotels, bird watching making own binoculars.		• 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, and how they depend on each other • 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, using the idea of a simple food chain, and identify and name different sources of food.		• 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 environment • recognise that environments can change and that this can sometimes pose dangers to living things.	• 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 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.

ROCKS	• Explore the natural world around them. (Reception – Living things and their habitats) We look at volcanoes and how lava changes into rock. We group and identify different materials such as glass, wood.	• Distinguish between an object and the material from which it is made**. (Y1 - Everyday materials)** • Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock**. (Y1 - Everyday materials)** • Describe the simple physical properties of a variety of everyday materials. **(Y1 - Everyday materials)** • Compare and group together a variety of everyday materials on the basis of their simple physical properties**. (Y1 - Everyday materials)**	• Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. (Y2 - Uses of everyday materials)	• 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 living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. **(Y6 - Evolution and inheritance)**
LIGHT	• Describe what they see, hear and feel whilst outside. Use festivals to discuss and observe light candles fireworks. Drawing around shadows in the playground, observing the effects of light in the garden.	• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **(Y1 - Animals, including humans)** • Describe the simple physical properties of a variety of everyday materials. **(Y1 - Materials)**		• 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 a solid object • find patterns in the way that the size of shadows change.		• Compare and group together everyday materials on the basis of their properties, including transparency, **(Y5 - Properties and changes of materials)**	• Recognise that light travels 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 to our eyes • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
FORCES	• Explore the natural world around them. • Describe what they see, hear and feel whilst outside. Making ramps and testing them with toy cars, what makes them go faster? Slower? Look at different materials to make the car faster or slower.		• Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. **(Y2 - Uses of everyday materials)**	• 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		• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces	

	Eruptions in volcano looking at the gas forcing out the lava. Experiments to show this using bi carb and vinegar. Coca cola and mentos.			not others describe magnets as having two poles • predict whether two magnets will attract or repel each other, depending on which poles are facing. • 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		• recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	
SOUND	• Describe what they see, hear and feel whilst outside. Using musical instruments to observe sounds. Singing, using our voice. Telephone experiment with cups and string. Speaking into pipes and loose parts to experiment with sound.	• Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. **(Y1 - Animals, including humans)**			• 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.		
ELECTRICITY	Discussions on what electricity is and where does it come from. Lemon as a battery experiment.				• 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 link		• 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.

					this to whether or not a lamp lights in a simple series circuit • recognise some common conductors and insulators, and associate metals with being good conductors.		
EARTH AND SPACE	• focus on our local environment and what the children are familiar with. Night and day Daily weather reports. Globes set up with maps, pictures of landmarks and features such as deserts, Antarctic, rainforest. Looking and using maps to locate countries and places. Differences bewtween space and earth such as gravity, floating. We make vehicles to travel around the world using loose parts. Continent names, countries Introduce planet names, Differences between land and sea.	• Observe changes across the four seasons**. (Y1 – Seasonal changes)** • Observe and describe weather associated with the seasons and how day length varies**. (Y1 – Seasonal changes)**				• 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.	
EVOLUTION AND INHERTIANCE	• lifecycles and how we change.		• 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, and how they depend on each other. **(Y2 - Living things and their habitats)** • Notice that animals, including humans, have offspring which grow into adults. **(Y2 - Animals, including humans)**	• Describe in simple terms how fossils are formed when things that have lived are trapped within rock. **(Y3 - Rocks)** Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **(Y3 - Plants)**	• Recognise that environments can change and that this can sometimes pose dangers to living things. **(Y4 - Living things and their habitats)**	• Describe the life process of reproduction in some plants and animals. (Living things and their habitats - Y5)	• 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 adapted to suit their environment in different ways and that adaptation may lead to evolution.