

Progression of Science

Bredbury Green Primary School



	The Planet	Discoveries	The Body
Year 1	Seasonal Changes Know that there are four seasons and that weather changes across the year. Know that day length changes with the seasons. Explain how the weather and the length of the day change in different seasons. Plants Know the names of a variety of common wild and garden plants, including deciduous and evergreen trees. Know the basic parts of common flowering plants and trees, including roots, stems, leaves and flowers. Explain how the structure of flowering plants and trees helps them to grow and survive. Animals (Classification) Know the names of a variety of common animals, including fish, amphibians, reptiles, birds and mammals. Know that animals can be grouped as carnivores, herbivores or omnivores based on what they eat. Explain how the structures of different animals help us to identify, describe and compare them	Materials Know the difference between an object and the material from which it is made. Know the names and simple physical properties of a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Explain how materials can be compared and grouped based on their physical properties.	The Human Body and Senses Know the names of the basic parts of the human body. Know which body parts are linked to each of the five senses. Explain how we use our senses to understand and explore the world around us.
Year 2	Habitats and Food Chains Know the difference between things that are living, dead and things that have never been alive. Know that plants and animals live in habitats and microhabitats that provide what they need to survive. Explain how animals depend on plants and other animals for food using simple food chains.	Observe a plant grow Know that seeds and bulbs grow into mature plants. Know that plants need water, light and a suitable temperature to grow and stay healthy. Explain how different conditions help plants to grow and survive. Properties of Materials Know that different materials such as wood, metal, plastic, glass, brick, rock, paper and cardboard are suitable for different purposes. Know that the shape of some solid objects can be changed by squashing, bending, twisting or stretching. Explain why certain materials are used for specific purposes and how their shape can be changed by physical forces.	Survival and Offspring Know that animals, including humans, have offspring that grow into adults. Know that animals, including humans, need water, food and air to survive. Explain how living things grow and what they need to stay alive. Exercise Know that exercise helps humans to stay healthy. Know that eating a balanced diet and keeping clean are important for good health. Explain how exercise, healthy eating and hygiene help the body to stay healthy and strong.
End Points	Our Living Planet - Observe and describe seasonal change on Earth, including how weather and day length vary across the four seasons. - Identify and compare living things on our planet, including plants and animals, their basic structures, characteristics and how they can be grouped and classified. - Explain how living things depend on Earth's environments to survive, including how habitats provide for needs and how simple food chains show relationships between living things Scientific Discovery - Identify and describe materials and their properties, including naming common materials, distinguishing objects from materials, and grouping them based on their physical properties. - Investigate how plants grow and develop, knowing that seeds and bulbs grow into mature plants and that water, light and suitable temperatures are needed for healthy growth. - Explain how materials behave and are used in the world, including how they can be changed by forces and why different materials are chosen for different purposes. Understanding the Human Body - Identify and name parts of the human body and senses, including linking sense organs to sight, hearing, smell, taste and touch, and describing how we use our senses to explore the world. - Understand how humans grow and survive, knowing that humans have offspring that grow into adults and that all living things need water, food and air to stay alive. - Explain how humans keep their bodies healthy, including how exercise, a balanced diet and good hygiene support growth, strength and wellbeing.		

Year 3	Flowering Plants and their Functions Know the functions of the main parts of flowering plants, including roots, stem/trunk, leaves and flowers. Know that plants need air, light, water, nutrients and space to grow, and that different plants may have different requirements. Explain how water is transported in plants and how flowers are involved in reproduction, including pollination, seed formation and seed dispersal Rocks and Fossils Know that rocks can be compared and grouped based on their appearance and simple physical properties. Know that fossils are formed when living things are trapped and preserved in rock over time. Explain that soil is made from broken-down rock and organic matter, and how rocks and fossils help us understand the past.	Light and Shadow Know that light is needed to see things and that darkness is the absence of light. Know that light can be reflected from surfaces and that the Sun can be dangerous to our eyes. Explain how shadows are formed when light is blocked and how the size of shadows can change. Forces and Magnets Know that different surfaces affect how objects move and that some forces require contact while magnetic forces can act at a distance. Know that magnets attract or repel each other, have two poles, and only attract certain materials. Explain how magnets behave, including attraction and repulsion, and how this depends on their poles and the materials involved	Movement and Survival Know that animals, including humans, need the right types and amounts of nutrition and cannot make their own food. Know that humans and some other animals have skeletons and muscles that support movement and protect the body. Explain how nutrition, skeletons and muscles help animals, including humans, to survive and move.
Year 4	Classification and Environments Know that living things can be grouped and classified in different ways. Know how to use classification keys to identify and name living things in different environments. Explain how environmental changes can affect living things and sometimes create risks for survival Food Chains Know that food chains show how living things are linked by what they eat. Know that producers, predators and prey have different roles within a food chain. Explain how living things depend on each other in a food chain by identifying producers, predators and prey. The Water Cycle Know the stages of the water cycle, including evaporation and condensation. Know that temperature affects the rate of evaporation. Explain how evaporation and condensation work together in the water cycle and how warmer temperatures increase the rate of evaporation.	States of Matter Know that materials can be grouped as solids, liquids or gases. Know that some materials change state at specific temperatures when heated or cooled, measured in degrees Celsius (°C). Explain how changes in temperature cause materials to change state, including key examples such as ice melting at 0°C and water boiling at 100°C. Electricity Know that many common appliances use electricity and that simple circuits are made from basic components such as cells, wires, bulbs, switches and buzzers. Know that a lamp will only light when there is a complete circuit, and that a switch controls whether the circuit is open or closed. Explain how electrical circuits work, including how electricity flows in a complete loop and how conductors and insulators affect this.	The Digestive System Know the basic parts of the human digestive system. Know the simple functions of the main parts of the digestive system. Explain how food is processed as it moves through the digestive system. Our Teeth Know the different types of teeth in humans. Know the simple functions of each type of human tooth. Explain how different teeth help humans to eat and break down food. Sound Know that sounds are made when objects vibrate and that vibrations travel through a medium to the ear. Know that pitch is linked to features of the object that produces the sound and volume is linked to the strength of vibrations. Explain how sounds are produced and change in pitch and volume, and how they become quieter with distance from the source.
End Points	Our Living Planet - Understand how living things grow, survive and are classified, including the structure and function of flowering plants, how water is transported in plants, how reproduction occurs, and how living things can be grouped and identified using classification systems and keys. - Understand how Earth processes and materials change over time, including how rocks and fossils form, how soil is created, and how the water cycle works through evaporation and condensation influenced by temperature. - Explain how living things and environments are interconnected, including how food chains show relationships between producers, predators and prey, and how environmental changes can affect living things and their survival Scientific Discovery - Understand how light and forces affect the world around us, including how light travels, is reflected, and forms shadows, and how forces (including magnets and contact forces) can change movement and act at a distance. - Understand how materials behave and change, including grouping matter as solids, liquids and gases, and describing how changes in temperature can cause reversible changes of state with key examples such as melting and boiling points.		

	- Understand how electricity and magnets can be used in systems, including how simple circuits work, how switches control electrical flow, and how materials can be classified as conductors or insulators based on their properties Understanding the Human Body - Understand how the human body supports movement and survival, including the role of nutrition, skeletons and muscles, and how animals obtain and use food to stay alive. - Understand how the human body processes food, including the main parts and functions of the digestive system and how different types of teeth help break down food. - Explain how sound is produced and changes over distance, including how vibrations create sound, how pitch and volume are affected, and how sound becomes quieter as it travels away from its source		
Year 5	Life Cycles Know that mammals, amphibians, insects and birds have different life cycles. Know that plants reproduce through processes such as pollination, seed formation and seed dispersal. Explain how the life cycles of mammals, amphibians, insects and birds differ, and how they reproduce	Materials and States of Matter Know that everyday materials can be grouped according to properties such as hardness, solubility, transparency, electrical and thermal conductivity, and magnetism. Know that some substances dissolve to form solutions and that mixtures can be separated using methods such as filtering, sieving and evaporation. Explain how materials can be grouped and compared using evidence from tests, and how some changes (like dissolving and state changes) are reversible while others form new materials and are not reversible Earth and Space Know that the Earth and other planets in the solar system move around the Sun, and that the Moon moves around the Earth. Know that the Sun, Earth and Moon in the solar system are approximately spherical bodies. Explain how the Earth’s rotation within the solar system causes day and night and the apparent movement of the Sun across the sky. Forces Know that gravity is a force in the solar system that causes unsupported objects to fall towards the Earth. Know that air resistance, water resistance and friction are forces that act between moving surfaces. Explain how forces such as gravity, friction, air resistance and water resistance affect movement, and how mechanisms like levers, pulleys and gears can change the size of a force	Human Development Know the main stages of the human life cycle from birth to death. Know that humans change physically, emotionally and mentally as they grow, including key changes during puberty. Explain how humans develop over time, including changes such as growth in height and body size, development of adult characteristics during puberty, and the final stage of life leading to death.
Year 6	Classification and the Linnaean System Know that living things, including microorganisms, plants and animals, are classified into broad groups such as micro-organisms, plants and animals, and that these groups can be subdivided further. Know that animals can be classified into vertebrates (fish, amphibians, reptiles, birds and mammals) and invertebrates (such as insects, spiders, snails and worms), based on observable characteristics. Explain how living things are classified using similarities and differences, including the use of classification keys, and recognise that scientists such as Carl Linnaeus developed systems for grouping living things.	Evolution and Inheritance Know that fossils provide evidence that living things have changed over time and that different organisms lived on Earth millions of years ago. Know that living things produce offspring that inherit characteristics from their parents, but there is variation so offspring are not identical. Explain how inherited variation and environmental adaptation can lead to evolution over long periods of time, using fossil evidence to show how species have changed. Light and the Eye Know that light travels in straight lines and that we see objects when light travels from light sources and is reflected into the eye. Know that reflection is the process where light bounces off surfaces into our eyes, allowing us to see non-luminous objects. Explain how the behaviour of light travelling in straight lines helps us understand reflection and why shadows form with the same shape as the objects that cast them. Electricity and Circuits Know that the brightness of a lamp and the volume of a buzzer in a circuit depend on the number and voltage of cells used.	The Circulatory System Know that the human circulatory system includes the heart, blood vessels (arteries, veins and capillaries) and blood. Know that the heart pumps blood around the body, blood vessels transport blood, and blood carries oxygen, nutrients and waste products. Explain how the structure and function of the heart, blood vessels and blood work together in a double circulatory system to transport oxygen and nutrients around the body and remove waste products. Lifestyle and the Body Know that diet, exercise, drugs and lifestyle choices can affect how the human body functions. Know that nutrients and water are transported around the body by the circulatory system. Explain how diet, exercise, drugs and lifestyle impact body function and how the circulatory system transports nutrients and water to where they are needed in animals, including humans.

		Know that components in a circuit (such as bulbs, buzzers and switches) can vary in function, affecting brightness, loudness and whether a circuit is on or off. Explain how changes in a simple series circuit affect how components work and represent circuits accurately using recognised symbols.	
End Points	Our Living Planet - Understand how different groups of living things reproduce and develop, including comparing the life cycles of mammals, amphibians, insects and birds, and describing plant reproduction through pollination, fertilisation, seed formation and seed dispersal. - Understand how living things are scientifically classified, including how organisms are grouped into microorganisms, plants, animals, vertebrates and invertebrates based on observable and shared characteristics. - Explain how classification systems are used in science to organise living things, including the use of classification keys, reasoning about similarities and differences, and recognising the significance of scientists such as Carl Linnaeus in developing systems of classification. Scientific Discovery - Understand how matter behaves and changes, including how materials can be grouped by their properties, how mixtures and solutions can be separated, and how changes of state and dissolving can be reversible or lead to new materials. - Understand Earth, space and natural forces, including how the Earth, Sun, Moon and planets move within the solar system, how gravity and other forces affect motion, and how light travels in straight lines to explain reflection, shadows and day and night. - Explain how living things, electricity and evolution can be understood through scientific evidence, including how fossils and inheritance show evolution over time, and how electrical circuits work and can be represented using scientific symbols. Understanding the Human Body - Understand how humans develop through the life cycle, including physical, emotional and mental changes from birth to death, with particular focus on growth and puberty. - Understand how the circulatory system supports life, including the structure and function of the heart, blood vessels and blood, and how a double circulatory system transports oxygen, nutrients and waste products around the body. - Explain how lifestyle choices affect the human body, including how diet, exercise, drugs and other factors influence health, and how the circulatory system distributes essential substances needed for survival and wellbeing.		