



Progression of Science Knowledge

Area of Learning	By end of EYFS / Readiness for KS1	By the end of KS1	End of lower KS2	End of KS2
<p>Animals including humans</p>	<p>Humans</p> <ul style="list-style-type: none"> • Explain and give examples of how they use their arms, hand, legs, feet and chest • Label parts of the body on a diagram • Identify and describe the main senses and the body parts connected to their use. • Describe what senses can help us do. • Know the functions of hair, mouth, ears, eyes. • Understand that humans grow and change. • Describe some of their own body changes. • Understand the importance of staying healthy. • Describe a balanced diet. • Know the difference between healthy and unhealthy food. • List ways they changed since a baby. • Understand that all humans are unique but share some similarities and differences. <p>Animals</p> <ul style="list-style-type: none"> • Understand which creatures are insects and invertebrates describing some differences. • Identify what insects and invertebrates need to survive • Describe the differences between spiders, flies and centipedes, name and draw their main body parts . • Know that animals are living things. • Identify living and non-living things. • Identify main features of a bird and why then need a nest. • Know which animals live on a farm and some products they produce eg milk /eggs • Know that dinosaurs lived long ago, describing some different types and how are similar to some creatures today. 	<p>Humans</p> <ul style="list-style-type: none"> • Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. • 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. <p>Animals</p> <ul style="list-style-type: none"> • 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) 	<p>Humans</p> <ul style="list-style-type: none"> • 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 . <p>Animals</p> <ul style="list-style-type: none"> • Construct and interpret a variety of food chains, identifying producers, predators and prey. 	<p>Humans</p> <ul style="list-style-type: none"> • Describe the changes as humans develop to old age. • Identify and name the main parts of the human circulatory system. • 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.

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Living things and their habitats	<ul style="list-style-type: none"> • Describe an animal's habitat • Explain what some animals' habitats are like and what they need to survive. • Know where some domestic and wild animals live. • Describe an animals habitat and identify those that are domestic and wild. • Identify what insects and invertebrates need to survive , • Observe insects and invertebrates closely in their habitats • Describe where insects and invertebrates live • Describe what a habitat is 	<ul style="list-style-type: none"> • 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; and how they depend on each other • Identify and name a variety of plants and animals in their habitats, including microhabitats. • 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. 	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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.
Plants	<ul style="list-style-type: none"> • Explain why a plant is a living thing and what it needs to live. • Explain the life cycle of a plant. Label the key features of a plant. • Understand where plants come from. • Understand which vegetables grow overground or underground. Name several types of vegetables. Identify three different types of vegetables. • Use clues to identify a fruit. Identify and describe a range of fruit. • Describe what happens to a tree during the four seasons. 	<ul style="list-style-type: none"> • Identify and name a variety of common and 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 into mature plants. • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. 	<ul style="list-style-type: none"> • 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. 	
Inheritance and evolution				<ul style="list-style-type: none"> • 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.

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Seasonal changes Weather	<ul style="list-style-type: none"> Explain the differences between rain, ice and water. Understand the role of clouds. Understand wind direction. Describe what causes wind. Recall that wind is the movement of air. Understand and explain seasonal changes. 	<ul style="list-style-type: none"> Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies 		
Materials	<ul style="list-style-type: none"> Understand which materials are needed to build a home. Explain which material is the most absorbent . Explain which material is good for different clothing. Describe clothes needed in the rain and in different seasons. 	<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> Compare and group everyday materials based on properties, including hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets . Know that some materials will dissolve in liquid to form a solution. 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 associated with burning and the action of acid on bicarbonate of soda.
Rocks			<ul style="list-style-type: none"> 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. 	

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States of Matter	<ul style="list-style-type: none"> • Describe the changes batter mix goes through as it starts to cook. • Explain what happens to chocolate when it starts to melt. • Explain what happens to chocolate when it starts to become hard. • Use a mould to make an ice cube. Explain how ice is formed. • Describe the best conditions for melting ice. • Understand that snow melts when the weather gets warmer. • Explain what is need to do to build the perfect sandcastle. Understand how to make a mixture. 		<ul style="list-style-type: none"> • 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. • Measure or research the temperature at which different elements changes state. • Describe temperature using degrees Celsius (°C) . • Identify the part played by evaporation and condensation in the water cycle. • Associate the rate of evaporation with temperature. 	
Earth and Space	<ul style="list-style-type: none"> • Know there are other planets in our solar system. • Understand how far planets are from the Sun. • Describe what different planets are like. • Know there are other planets in our solar system. • Explain why space travel is important. 			<ul style="list-style-type: none"> • 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.
Light	<ul style="list-style-type: none"> • Understand how a rainbow is formed. 		<ul style="list-style-type: none"> • Recognise that light is needed in order to see things. • Know 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. 	<ul style="list-style-type: none"> • 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 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.

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Forces	<ul style="list-style-type: none"> Describe what happens when pushes and pulls oppose each other . Suggest examples of pushes and pulls. Identify if an action is a push or a pull. Describe what happens when pushes and pulls oppose each other. Group objects based on whether they sink or float. Explain what sink means. Explain what float means. 		<ul style="list-style-type: none"> Compare how things move on different surfaces. Notice that some forces need contact between 2 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 2 poles . Predict whether 2 magnets will attract or repel each other, depending on which poles are facing. 	<ul style="list-style-type: none"> 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. Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect.
Electricity	<ul style="list-style-type: none"> Identify where electrical appliances can be used. Identify what I need to do to stay safe when using electrical appliances. Explain why water and electricity do not mix. 		<ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts: cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit of a complete loop with a battery. Recognise that a switch opens and closes a circuit to turn a lamp on or off. Recognise some common conductors and insulators; associate metals with being good conductor. 	<ul style="list-style-type: none"> 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.
Sound	<ul style="list-style-type: none"> Understand sound as vibrations 		<ul style="list-style-type: none"> 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. 	

