

Science Progression of Core Knowledge

YEAR GROUP	Environment	Animals including humans	Plants	Physical processes	Materials
EYFS	LIVING THINGS AND THEIR HABITATS <ul style="list-style-type: none"> I know some plants and animals in the surrounding natural habitat. I know that plants and animals can be different in different places. I know that things are different in the different seasons. 	<ul style="list-style-type: none"> I know some animals that live in different habitats. I know some different habitats. I know how to describe people who are familiar to me. I know how to take care of themselves. 		LIGHT <ul style="list-style-type: none"> I know about shadows. I know about rainbows. FORCES <ul style="list-style-type: none"> I know how to change how things work. I know how the wind can move objects. I know how objects move in water. SOUND <ul style="list-style-type: none"> I know about sounds outside and can identify the source. Make sounds EARTH AND SPACE <ul style="list-style-type: none"> I know about the Solar System and stars. I know about space travel 	<ul style="list-style-type: none"> I know there is a range of materials, including natural materials. I know how to make objects from different materials, including natural materials. I know how to observe, measure and record how materials change when heated and cooled. I know how materials change over time and in different conditions
1	SEASONAL CHANGE <ul style="list-style-type: none"> I know some of the changes you can see across the four seasons. I can describe weather associated with the seasons and how day length varies. <p><i>Sunny, rainy, windy, snowy, winter, summer, spring, autumn, sun, sunrise, sunset, day length</i></p>	HUMANS <ul style="list-style-type: none"> I can Identify, name, draw and label the basic parts of the human body. I know some of the differences and similarities between humans. ANIMALS <ul style="list-style-type: none"> I know there are a variety of common animals including fish, amphibians, reptiles, birds and mammals; they can be carnivores, herbivores or omnivores. I know the basic structure of some animals including fish, amphibians, reptiles, birds and mammals. I know that there are similarities and differences between animals. I know that animals are alive; they move, feed, grow, use their senses and reproduce. <p><i>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</i></p>	<ul style="list-style-type: none"> I know the names of some common wild and garden plants, including deciduous and evergreen trees. I know the basic structure of a variety of common flowering plants, including trees. <p><i>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud</i></p>		<ul style="list-style-type: none"> I know the difference between an object and the material from which it is made. I know a range of everyday materials, including wood, plastic, glass, metal, water, and rock and some of their properties. <p><i>Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through</i></p>

2	<p>LIVING THINGS AND THEIR HABITATS</p> <ul style="list-style-type: none"> I know the difference between things that are living, dead, and things that have never been alive. I know that most living things live in habitats and what they provide and can names some animals and their habitats. I know how animals obtain their food from plants and other animals. <p><i>Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed, names of local habitats e.g. pond, woodland, names of micro-habitats e.g. under logs, in bushes</i></p>	<p>HEALTH – SURVIVAL AND GROWTH</p> <ul style="list-style-type: none"> I know that animals have offspring which grow into adults. I know the basic needs of animals. I know the importance of exercise, eating the right amounts of different types of food, and hygiene. I know medicines can be useful when we are ill and harmful if not used properly. <p><i>Offspring, reproduction, growth, child, young, old, exercise, heartbeat, pulse, breathing, hygiene, germs, disease, nutrition, food types</i></p>	<p>GROWING PLANTS</p> <ul style="list-style-type: none"> I know that seeds and bulbs grow into mature plants I know that plants need water, light and a suitable temperature to grow and stay healthy. <p><i>Y1 + light, shade, sun, warm, cool, water, grow, healthy</i></p>		<p>USES OF MATERIALS</p> <ul style="list-style-type: none"> I know different materials are suitable for different uses. I know how to change the shapes of solid objects. I know some materials can be found naturally; others have to be made. <p><i>Materials – wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber</i></p> <p><i>Properties – rough/smooth, flexible/rigid, strong/weak, reflective/non-reflective, transparent/translucent/opaque</i></p> <p><i>Changing Shape - squashing, bending, twisting and stretching, pushing and pulling</i></p>
3		<p>NUTRITION</p> <ul style="list-style-type: none"> I know that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food. I know a varied diet, regular and varied exercise and clean water is beneficial to health. <p>DIGESTIVE SYSTEM</p> <ul style="list-style-type: none"> I know the functions of the parts of the digestive system in humans. <p>TEETH</p> <ul style="list-style-type: none"> I know the different types of teeth in humans and their simple functions. I know how to care for teeth and gums. <p><i>Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water</i></p> <p><i>Digestive system, digestion, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars,</i></p>	<p>PARTS AND FUNCTIONS OF PLANTS</p> <ul style="list-style-type: none"> I know the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. I know a plant needs air, light, water, nutrient from soil and room to grow for life and growth. I know about pollination, seed formation and seed dispersal. I know that plants make their own food in the leaves using energy from the sun. <p><i>Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal</i></p>	<p>LIGHT/SHADOWS</p> <ul style="list-style-type: none"> I know that we need light in order to see things and that dark is the absence of light. I know that light is reflected from surfaces and shadows are formed when light is blocked by a solid object. <p><i>Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror, Sunlight</i></p> <p>FORCES</p> <ul style="list-style-type: none"> I know that some forces need contact between two objects but magnetic forces can act at a distance, attracting and repelling. I know that some materials are attracted to a magnet and these are magnetic materials. <p><i>Force, magnetic force, magnet, strength, attract, repel, magnetic material, metal, iron, steel, north pole, south pole</i></p>	<p>ROCKS AND FOSSILS</p> <ul style="list-style-type: none"> I know you can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. I know how fossils are formed. <p><i>Rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, soil, peat, sandy/chalk/clay soil</i></p>

4	<p>LIVING THINGS AND THEIR HABITATS</p> <ul style="list-style-type: none"> I know that living things can be grouped in a variety of ways including classification keys I know that environments can change and that this can sometimes pose dangers to living things. <p><i>Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</i></p>	<ul style="list-style-type: none"> I know that food chains help identify producers, predators and prey. <p>MUSCULAR/SKELETAL SYSTEMS</p> <ul style="list-style-type: none"> I know that humans and some other animals have skeletons and muscles for support, protection and movement. I know some animals without internal skeletons/backbones (invertebrates) and how they have adapted. I know how the skeletons of birds, mammals, fish, amphibians or reptiles are similar and different. I know that muscles, which are attached to the skeleton, help animals move parts of their body. <p><i>herbivore, carnivore, omnivore, producer, predator, prey, food chain</i></p> <p><i>skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints</i></p>		<p>SOUND</p> <ul style="list-style-type: none"> I know how sounds are made by vibration and that they can be made in a variety of ways. I know that vibrations from sounds travel through a medium to the ear. I know that sounds get fainter as the distance from the sound source increases. I know sounds can be high or low pitched. I know that pitch can be altered either by changing the material, tension, thickness or length of vibrating objects or changing the length of a vibrating air column. <p><i>sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</i></p> <p>ELECTRICITY</p> <ul style="list-style-type: none"> I know that common appliances run on electricity. I know the components of a simple series circuit including cells, wires, bulbs, switches and buzzers. I know that a switch opens and closes a circuit. I know that some materials are conductors and insulators, and associate metals with being good conductors. I know that electricity sources can be mains or battery. <p><i>Electricity, electrical appliance/device, mains, plug, circuit, component, cell, battery, positive, negative, short circuit,, bulb, switch, buzzer, motor, conductor, insulator, metal,, symbol</i></p>	<p>STATES OF MATTER</p> <ul style="list-style-type: none"> I know materials can be solids, liquids or gases and this state can be changed. I know the part played by evaporation and condensation in the water cycle. I know that solids have a fixed size and shape. I know that liquids can pour and take the shape of the container in which they are put. I know that gases fill the container in which they are put and can be made smaller by squeezing/pressure. I know that liquids and gases can flow. <p><i>Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle</i></p>
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5	<p>LIFE CYCLES</p> <ul style="list-style-type: none"> I know about the differences in the life cycles of a mammal, an amphibian, an insect and a bird. I know how some plants and animals reproduce. <p><i>Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings, gestation, pollination</i></p>	<p>HUMAN LIFE CYCLE</p> <ul style="list-style-type: none"> I know that humans change as they develop to old age. <p><i>Puberty, the vocabulary to describe a range of sexual characteristics</i></p>		<p>FORCES</p> <ul style="list-style-type: none"> I know that unsupported objects fall towards the Earth because of the force of gravity. I know that air resistance, water resistance and friction, that act between moving surfaces, slow down moving objects. I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. I know that more than one force can act on an object simultaneously (either reinforcing or opposing each other). <p><i>Force, gravity, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears</i></p> <p>EARTH AND SPACE</p> <ul style="list-style-type: none"> I know that the Earth (and the other planets) orbits the Sun and the Moon orbits the Earth. I know that the Sun appears to move across the sky from East to West and this causes shadows to change during the day. I know that the Sun, Earth and Moon are approximately spherical bodies. I know the Earth's rotation on its axis in 24 hours causes day & night. I know that the Earth orbits the Sun in one year. I know that we see the Moon as the Sun's light reflects off it. I know that the Moon orbits the Earth in approximately 28 days and it looks different during the month. <p><i>Earth, Sun, Moon, spherical, Solar system, rotates/rotation, star, orbits, planets, axis</i></p>	<p>TESTING, REVERSIBLE AND IRREVERSIBLE CHANGES</p> <ul style="list-style-type: none"> I know that you can compare and group together everyday materials on the basis of their properties. I know that you can use hardness, strength, flexibility, solubility, transparency, thermal conductivity, electrical conductivity to compare materials and their usefulness. <p><i>soft, hard, stretchy, rigid, flexible, waterproof, absorbent, thermal conductivity, melting, solid, liquid, gas, dissolve, solution, soluble.</i></p> <p>Temperature and Thermal Insulation</p> <ul style="list-style-type: none"> I know that heat always moves from hot to cold. I know that some materials (insulators) are better at slowing down the movement of heat than others. I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. I know how mixtures might be separated, including through filtering, sieving and evaporating. I know that changes can occur when different materials are mixed. I know that some material changes can be reversed and some cannot. I know that some changes result in the formation of new materials, and that this kind of change is not usually reversible. <p><i>Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material</i></p>
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6	<p>CLASSIFICATION</p> <ul style="list-style-type: none"> I know that living things are classified into micro-organisms, plants and animals according to common observable characteristics. I know that vertebrates can be grouped as fish, amphibians, reptiles, birds and mammals. I know that invertebrates can be grouped as snails and slugs, worms, spiders and insects. I know that plants can be grouped as flowering plants (incl. trees and grasses) and non-flowering plants (such as ferns and mosses). <p><i>Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering</i></p> <p>EVOLUTION AND INHERITANCE</p> <ul style="list-style-type: none"> I know that living things have changed over time and that fossils provide information about the past. I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. I know that animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <p><i>Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils</i></p>	<p>CIRCULATORY SYSTEM</p> <ul style="list-style-type: none"> I know the main parts of the human circulatory system, and the functions of the heart, blood vessels and blood. I know the impact of diet, exercise, drugs and lifestyle on the way bodies function. I know how nutrients and water are transported within animals, including humans. I know the heart is a major organ and is made of muscle that pumps blood around the body through vessels and this can be felt as a pulse. I know the heart pumps blood through the lungs in order to obtain a supply of oxygen. All medicines are drugs, not all drugs are medicines and that tobacco, alcohol and other 'drugs' can be harmful. <p><i>Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle</i></p>		<p>ELECTRICITY</p> <ul style="list-style-type: none"> I know that the brightness of a lamp or the volume of a buzzer is due to the number and voltage of cells used in the circuit. I know the recognised symbols to use when representing a simple circuit in a diagram. I know how to identify if a circuit will work. <p><i>Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage</i></p> <p>LIGHT AND ASTRONOMY</p> <ul style="list-style-type: none"> I know that light appears to travel in straight lines. I know that objects are seen because they give out or reflect light into the eye. I know that shadows have the same shape as the objects that cast them. <p><i>Straight lines, Light rays.</i> <i>(Y3 vocabulary - Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror)</i></p>	
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