Science Progression of Core Knowledge

YEAR GROUP	Environment	Animals including humans	Plants	Physical processes	Materials
EYFS	LIVING THINGS AND THEIR HABITATS ▪ 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.	▪ 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 ▪ I know about shadows. ▪ I know about rainbows. FORCES ▪ I know how to change how things work. ▪ I know how the wind can move objects. ▪ I know how objects move in water. SOUND ▪ I know about sounds outside and can identify the source. ▪ Make sounds EARTH AND SPACE ▪ I know about the Solar System and stars. ▪ I know about space travel	▪ 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 ▪ 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. ***Sunny, rainy, windy, snowy, winter, summer, spring, autumn, sun, sunrise, sunset, day length***	HUMANS ▪ 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 ▪ 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. ***Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves***	▪ 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. ***Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud***		▪ 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. ***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***

2	LIVING THINGS AND THEIR HABITATS ▪ 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. ***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***	HEALTH – SURVIVAL AND GROWTH ▪ 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. ***Offspring, reproduction, growth, child, young, old, exercise, heartbeat, pulse, breathing, hygiene, germs, disease, nutrition, food types***	GROWING PLANTS ▪ 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. ***Y1 + light, shade, sun, warm, cool, water, grow, healthy***		USES OF MATERIALS ▪ 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. ***Materials – wood, plastic, glass, metal, water, rock, brick, paper, fabric, card, rubber*** ***Properties – rough/smooth, flexible/rigid, strong/weak reflective/non-reflective, transparent/translucent/opaque*** ***Changing Shape - squashing, bending, twisting and stretching, pushing and pulling***
3		NUTRITION ▪ 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. DIGESTIVE SYSTEM ▪ I know the functions of the parts of the digestive system in humans. TEETH ▪ I know the different types of teeth in humans and their simple functions. ▪ I know how to care for teeth and gums. ***Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water*** ***Digestive system, digestion, teeth, saliva, oesophagus, stomach, small intestine, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars,***	PARTS AND FUNCTIONS OF PLANTS ▪ 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. ***Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal – wind dispersal, animal dispersal, water dispersal***	LIGHT/SHADOWS ▪ 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. ***Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror, Sunlight*** FORCES ▪ 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. ***Force, magnetic force, magnet, strength, attract, repel, magnetic material, metal, iron, steel, north pole, south pole***	ROCKS AND FOSSILS ▪ 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. ***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***

4	LIVING THINGS AND THEIR HABITATS ▪ 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. ***Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate***	▪ I know that food chains help identify producers, predators and prey. MUSCULAR/SKELETAL SYSTEMS ▪ 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. ***herbivore, carnivore, omnivore, producer, predator, prey, food chain*** ***skeleton, bones, muscles, support, protect, skull, ribs, spine, muscles, joints***		SOUND ▪ 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. ***sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation*** ELECTRICITY ▪ 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. ***Electricity, electrical appliance/device, mains, plug, circuit, component, cell, battery, positive, negative, short circuit,, bulb, switch, buzzer, motor, conductor, insulator, metal,, symbol***	STATES OF MATTER ▪ 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. ***Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle***

5	LIFE CYCLES ▪ 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. ***Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings, gestation, pollination***	HUMAN LIFE CYCLE ▪ I know that humans change as they develop to old age. ***Puberty, the vocabulary to describe a range of sexual characteristics***		FORCES ▪ 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). ***Force, gravity, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears*** EARTH AND SPACE ▪ 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. ***Earth, Sun, Moon, spherical, Solar system, rotates/rotation, star, orbits, planets, axis***	TESTING, REVERSIBLE AND IRREVERSIBLE CHANGES ▪ 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. ***soft, hard, stretchy, rigid, flexible, waterproof, absorbent, thermal conductivity, melting, solid, liquid, gas, dissolve, solution, soluble.*** Temperature and Thermal Insulation ▪ 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. ***Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material***

6	CLASSIFICATION ▪ 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). ***Vertebrates, fish, amphibians, reptiles, birds, mammals, invertebrates, insects, spiders, snails, worms, flowering and non-flowering*** EVOLUTION AND INHERITANCE ▪ 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. ***Offspring, sexual reproduction, vary, characteristics, suited, adapted, environment, inherited, species, fossils***	CIRCULATORY SYSTEM ▪ 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. ***Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs and lifestyle***		ELECTRICITY ▪ 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. ***Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage*** LIGHT AND ASTRONOMY ▪ 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. ***Straight lines, Light rays.*** ***(Y3 vocabulary - Light, Light source, Dark, Absence of light, Transparent, Translucent, Opaque, Shiny, Matt, Surface, Shadow, Reflect, Mirror)***	