Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Year R					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigations
123…Good to be me! **Celebrations**	Early Learning Goal: **People culture and communities:** - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps; **The natural world:** -Explore the natural world around them, making observations and drawing pictures of animals and plants; - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Can make simple observations of themselves and others Can make comments on similarities and differences concerning objects, people, places	Same, different, similarities, differences, facial features Skeleton, bones, muscles, body part words. Positional language	Make simple observations of similarities/differences in experiments or investigations Communicating **<u>Organisation and communication</u>** Communicate their knowledge through: Small World play Water tray/sand play Discussion Drawing pictures Making models Writing Labelling simple pictures Exploring the outside environment	Making careful observations of themselves and others. What is the same? What is different? Investigations linked to immediate environment around us Investigations linked to phonic sounds for the day/week
Once upon a time **What a Wonderful World – Habitats, Animals, Countries, Seasons. (Specifics linked to children's interests)** **Growing and Changing**	Early Learning Goal: **People culture and communities:** - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps; **The natural world:** -Explore the natural world around them, making observations and drawing pictures of animals and plants;	Talk about what is the same, what is different when looking at habitats, animals, countries etc. Know the life cycle of a frog, butterfly and seed Know the differences that have occurred from baby to their life now	Habitat Life cycle Seasonal language Positional language Weather		Making careful observations of the world around them. Country and habitat studies linked to families in the class Life cycles and changes to trees/leaves over time Differences between babies, children and adults

	- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. -Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.				
Growing and Changing **All creatures great and small**	Early Learning Goal: **People culture and communities:** - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps; **The natural world:** -Explore the natural world around them, making observations and drawing pictures of animals and plants; - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Know that water can freeze, boil and steam Know that some objects sink and others float Know that some objects stick to magnets and some objects don't	Positional language Heavy, light Magnetic Float, sink Melting, freezing Liquid, solid		Magnets, ice, floating and sinking, melting, freezing, growing plants – all linked to children's interests and core book texts

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Year 1					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Plants (Plant detectives)	P1 identify and name a variety of common wild and garden plants, including deciduous and evergreen trees P2 identify and describe the basic structure of a variety of common flowering plants, including trees.	Develop understanding that plants change as they grow and according to the seasons and weather conditions. children exploring and investigating what they see every day around them that is familiar	plant leaf, leaves, bud, twig, branch, tree, roots, stem, shoot, bud, flower, flower, blossom, petals, stem, stalk, deciduous, evergreen, soil, compost, manure, water, vegetable, fruit,	Pupils will be taught to use the following practical scientific methods, processes and skills: asking simple questions and recognising that they can be answered in different ways	Making careful observations, grouping and comparing evidence from the natural world – What do plants need to grow?
Animals, including Humans (Animal antics, Looking at animals and Our Senses)	AH1 identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals AH2 identify and name a variety of common animals that are carnivores, herbivores and omnivores AH3 describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) AH4 Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Identify and name, look closely at and compare and contrast many different animals. Name their body parts, describe their physical features and mimic how they move.	carnivore, herbivore, omnivore limbs, wings, arms, claws, paws, fins	observing closely, using simple equipment and measurement performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering, recording and communicating data and findings to help in answering questions. use scientific language and read and spell age-appropriate scientific vocabulary	To compare themselves, What is the same? What is different? Compare humans to animals
Everyday Materials **(Everyday Materials)**	M1distinguish between an object and the material from which it is made M2 identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock	To know that there are a wide range of materials. One object can be made from different materials Recognise that the same material can be made into different objects, for example, a metal can, a	materials, fibre, fabric Wool, cotton, paper waterproof, transparent, translucent opaque	begin to notice patterns and relationships.	Which material is waterproof?

	M3 describe the simple physical properties of a variety of everyday materials M4 compare and group together a variety of everyday materials on the basis of their simple physical properties.	metal spoon and a metal car. Use adjectives to help describe objects Understand the properties of a material To know properties of a material can be changed			
Seasonal Change **(Sensing Weather)**	S1 observe changes across the four seasons S2 observe and describe weather associated with the seasons and how day length varies.	To observe how the weather affects them, eg clothing food To observe how weather affects plants	seasons, autumn, winter, spring, summer, names of the months of the year, temperature, waterproof		Measuring and recording temperature over a period of time

Year 2					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Living Things and their Habitats (What is in your habitat?)	LH1 explore and compare the differences between things that are living, dead, and things that have never been alive LH2 identify that most living things live in habitats to which they are suited LH3 describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other LH4 identify and name a variety of plants and animals in their habitats, including micro-habitats LH5 describe how animals obtain their food	How the living things are suited to the habitat and the interactions between the living organisms within a habitat. Construct food chains that show how living things depend on each other.	habitat, plants, animals, decay, rocks, soil, air, water, food chain, herbivores carnivores omnivores	Pupils will be taught to use the following practical scientific methods, processes and skills: asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment and measurement performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions	Things which are living, have lived and never lived Minibeasts

	from plants and other animals LH6 understand a simple food chain, and identify and name different sources of food.			gathering, recording and communicating data and findings to help in answering questions. use scientific language and read and spell age-appropriate scientific vocabulary begin to notice patterns and relationships.	
Plants (The apprentice gardener)	P1 observe and describe how seeds and bulbs grow into mature plants P2 find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	Learning the sequence of germination, and comparing and contrasting the requirements of germinating seeds with those of mature plants to maintain healthy growth	seeds, plant bulb, grow, investigate, bean, soil, , light, dark, water, germinate, alive, food store, fair test		What do plants need to survive?
Animals including Humans (Growing up, Take Care))	AH1 notice that animals, including humans, have offspring which grow into adults AH2find out about and describe the basic needs of animals, including humans, for survival (water, food and air) AH3 describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Identify simple differences between living and non-living things Changes that occur from birth to now	baby, living, alive, food, milk, water, , air, breathe, shelter, warmth, survival, child, toddler, life cycle, birth, teenager, adult, parent,		Measurement

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Uses of Everyday Materials (shaping up, good choices)	M1 identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses M2 find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Continue to develop their understanding of the simple physical properties of materials and consider in more detail how these properties make materials useful for particular purposes.	material, wood, property, metal, plastic, glass, rock, brick, fabric, waterproof, absorb, absorbent, wet,		Tea bag investigation

Year 3					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Plants (How does your garden grow)	P1 identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers P2 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 P3 investigate the way in which water is transported within plants P4 explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. P5 know that plants make their own food	Continue to learn about the absorption and transport of water and nutrients and the role of the leaf in making food for the plant Continue to learn about the parts of the flower, their roles in plant reproduction and the stages of the life cycle of a flowering plant, building on observations of growth of seeds and bulbs.	leaflet, veins, surface, edge, lobes, tip, food, root hair, nutrients, seed, germination, flowering, pollination, sepal, carpel, stamen, pollen, reproduce, nectar, dispersal, stigma, style, ovary, anther, filament,	Pupils will be taught to use the following practical scientific methods, processes and skills: making decisions, asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations using notes and simple tables taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	
Animals including Humans	AH1 identify that animals, including humans, need	Revisit the importance of eating the right amounts	balanced diet, nutrition, nutrients, carbohydrates,		How good are we at different activities?

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

(Amazing bodies)	the right types and amount of nutrition, and that they AH2 cannot make their own food; they get nutrition from what they eat AH3 identify that humans and some animals have skeletons and muscles for support, protection and movement.	of different types of food, but will extend this knowledge to understand that the food we eat provides us with the nutrition that our bodies require to remain healthy. Learn that humans and some other animals have skeletons and muscles for support, protection and movement.	protein, roughage, fibre, sugar, fat, dairy, skeleton, bones, protect, support, move, muscles, joints, ribs, heart, spine, spinal column, vertebrate, vitamins, minerals,	gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, patterns, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. begin to look for naturally occurring patterns and relationships	
Rocks (Rock detectives)	R1 compare and group together different kinds of rocks (including those in the locality) on the basis of appearance and simple physical properties R2 describe in simple terms how fossils are formed when things that have lived are trapped within rock R3 recognise that soils are made from rocks and organic matter.	Establishing core knowledge and understanding of rocks, their relationship to soils and how fossils have formed over time	sandstone, granite, chalk, limestone, marble, pumice, rough, smooth, hard, soft, rock, stone, pebble, texture, particle, crystal, granule, soil, clay, sandy, loam, peat, organic material, weathering, ammonite, fossil,		Are all rocks waterproof?
Light (Can you see me?)	L1 recognise that they need light in order to see things and that dark is the absence of light L2 notice that light is reflected from surfaces L3 recognise that light from the sun can be dangerous and that there are ways to protect their eyes L4 recognise that shadows are formed when the light from a light source is blocked by a solid object	Explore what causes a shadow, as well as how the shape and size of a shadow can be affected by its position. How exposure to sunlight can cause harm, and about ways by which they can protect themselves.	light, dark, shadow, mirror, bright, dim, reflect, eye, opaque, transparent, translucent, ultraviolet, ray, beam, absorb, luminous, non-luminous, infrared,		How can you change the size of the shadow?

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Forces and Magnets (The power of forces)	FM1 compare how things move on different surfaces FM2 notice that some forces need contact between two objects, but magnetic forces can act at a distance FM3 observe how magnets attract or repel each other and attract some materials and not others FM4 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 FM5 describe magnets as having two poles FM6 predict whether two magnets will attract or repel each other, depending on which poles are facing.	To explore how forces can make objects start to move, speed up, slow down or change direction. They will compare how things move on different surfaces.	push, pull, twist, force, air, turns, fast, slow, slows down, material, surface, magnet, attracts, magnetic material, magnetism, acts at a distance, non-magnetic material, metal, non-metal, strength, north pole, south pole, repel,	recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	How well can an object slide on different materials?

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Year 4					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Living things and their Habitats (Human Impact)	LH1 recognise that living things (including those in the locality) can be grouped in a variety of ways LH2 explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment LH3 recognise that environments can change and that this can sometimes pose dangers to living things.	Classify plants in the local area at different times of the year. They will learn that different criteria can be used to classify plants depending on the time of year. Children will learn about some of the positive and negative ways that humans change the environment, locally and globally, with a particular focus on how this affects other living things. They will begin to understand that actions can have both positive and negative consequences	classification key, observe, record, classify, present	Pupils will be taught to use the following practical scientific methods, processes and skills: making decisions, asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations using notes and simple tables taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled	Classification of plants
Animals including Humans (Where does all that food go?)	AH1 describe the simple functions of the basic parts of the digestive system in humans AH2 identify the different types of teeth in humans and their simple functions AH3 construct and interpret a variety of food chains, identifying producers, predators and prey.	Animals, including humans, cannot make their own food; they get nutrition from what they eat. We need to eat different types of food so that our bodies get sufficient nutrients for growth and repair and as a source of energy. These nutrients are absorbed by the body as it passes through the digestive system. The digestive system consists of the mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus.	mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus, digestive system, digestion, mechanical process, chemical process, absorb, nutrients, water, saliva, chemicals, enzyme, teeth, canine, incisor, premolar, molar, jaw, , producer, consumer,		How good is the toothpaste?

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

States of Matter (In a state)	SM1 explore a variety of everyday materials and develop simple descriptions of the states of matter SM2 compare and group materials together, according to whether they are solids, liquids or gases SM3 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) SM4 identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Solids retain their shape unless a force is applied to them, Liquids when transferred from place to place take the shape of the container they are in but do not change in volume. Gases change in shape and volume to fill the space they are in. The particles in a gas are wide apart and move freely so, under pressure, the gas will take up less space.	solid, liquid runny, viscous, sticky, grain, powder, temperature, freezing point, , gas, air, carbon dioxide, helium, oxygen, bubbles, empty, particle, weight, compress, , volume, dry, evaporate, evaporation, water vapour, boiling point, steam, , condensation, water, droplets, cycle, model, snow, expand, heat	diagrams, keys, bar charts, and tables reporting on findings from enquiries, using relevant scientific language, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, patterns, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. begin to look for naturally occurring patterns and relationships recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations	What makes a difference to how fast the ice melts?
Sound (Good vibrations)	S1 identify how sounds are made, associating some of them with something vibrating S2 recognise that vibrations from sounds travel through a medium to the ear S3 find patterns between the pitch of a sound and features of the object that produced it S4 find patterns between the volume of a sound and the strength of the vibrations that produced it S5 recognise that sounds get fainter as the distance from the sound source increases.	Sounds are caused by a material vibrating. For sounds to travel they require a medium to pass through, which can be a solid, liquid or gas. We hear/detect sounds because the vibrations produced by the source pass through the air. When they reach our ears they cause our eardrums to vibrate, stimulating the nerve endings in the ear so we hear the sound. In space no one would be able to hear you scream because there is no air. It is a vacuum.	sound, loud, quiet, high, low, repeating, continuous, strike, blow, shake, pluck, vibration, vibrate, solid, gas, volume, strength of vibrations, sound source, fainter, distance, pitch, particles, question, investigation, fair test,		How can we make a sound louder or quieter?

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Electricity (Switched on)	E1 identify common appliances that run on electricity E2 construct a simple series circuit, identifying/naming its basic parts, including cell, wire, bulb, switch and buzzer E3 use their circuits to create simple devices E4 draw the circuit as a pictorial representation (not necessarily using conventional circuit symbols) E5 about precautions for working safely with electricity. E6 identify whether or not a lamp will light in a simple series circuit/ E7 recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit E8 recognise some common conductors and insulators, and associate metals with being good conductors.	Recognising that electricity can be used to produce light, sound, heat and movement. Children will test materials, classify them as electrical conductors or insulators and recognise that metals are good electrical conductors and plastics are good electrical insulators	electricity, electrical, mains, , battery, power, rechargeable, solar, wind up, sound, light, heat, movement, cell, wire, bulb, bulb holder, buzzer, motor, component, circuit, complete circuit, short circuit, flow, break, metal, connect, disconnect, terminal, positive, negative, switch, press switch, toggle switch, tilt switch, pendulum switch, property, electrical conductor, electrical insulator, electron, filament,		To make electrical circuits

Our Ladys School Curriculum – Progression Grid for the Science Curriculum

Year 5					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Life cycles (circle of life and reproduction of plants)	LT1 describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird LT2 describe the life process of reproduction in some plants and animals. LT3 raise questions about their local environment throughout the year.	understanding of what a life cycle is, and learn about the life cycles of some familiar (and some less familiar) mammals, amphibians, insects and birds. Children compare and contrast different life cycles, identifying common features as well as explaining key differences.	life cycle, birth, growth, reproduction, metamorphosis, aging, death, animal, mammal, amphibian, , hibernate, nocturnal, prey, predator, reproduce, habitat, environment, migrate, migration, navigate, genetic, endangered, threatened, extinct, extinction, evolution, ,	Pupils will be taught to use the following practical scientific methods, processes and skills: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and	How are humans helping endangered animals?
Animals, including Humans (Reproduction in animals)	AIH1 describe the changes as humans develop to old age. AIH2 draw a timeline to indicate stages in the growth and development of humans. AIH3 learn about the changes experienced in puberty.	Asexual reproduction in plants Many plants can also reproduce without forming seeds. Reproduction in animals			
Properties and changes of materials (Materials all change)	PM1 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 PM2 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution PM3 use knowledge of solids, liquids and gases	Reversible changes are those in which the fundamental composition of the materials involved remains unchanged, and that by altering the conditions it is possible to return the materials to their original state. Non-reversible changes occur when materials react to produce new products which cannot be easily turned back into the original materials	material, change, compare, contrast, solid, liquid, gas, change of state, dissolve, melt, reversible, non-reversible, mixture, powder, particle, tablet, bubbles, carbon dioxide, change, reaction, inflate, rust, oxidise, oxygen, corrode, tarnish; types of metal: iron, steel, chromium, tin, zinc; boil, vapour, fuel, heat, burn, burning, flammable, flame, melts, solidifies, candle, wick, wax		How long does it take for iron nails to rust?

	to decide how mixtures might be separated, including through filtering, sieving and evaporating PM4 give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic PM5 demonstrate that dissolving, mixing and changes of state are reversible changes PM6 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. PM7 explore reversible changes, including, evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.			degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments. explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. recognise that scientific ideas change and develop over time. draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly.	
Forces **(Feel the Force)**	F1 explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object F2 identify the effects of air resistance, water resistance and friction,	Forces are at work on everyday things all the time. Everything that changes speed, stops, starts and changes direction has forces acting on it. These forces are invisible and only their effects are noticed,	air resistance, Aristotle, balanced, balanced forces, bevel gears, clockwork, cogs, compress, extend, effort, force arm, forces, friction, force arrow, fulcrum, gravity, Galileo, gear ratio, gears, gear trains, lever, lift, machine,		How can we slow down falling objects? Parachutes

	that act between moving surfaces F3 recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. F4 explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. F5 explore the effects of friction on movement and find out how it slows or stops moving objects.	There are two types of forces – those that work at distance and those that are in contact. Gravity and magnetism work at a distance, whereas friction, air resistance and water resistance work in contact.	mechanisms, movement, Newton, Newton meter, pinion, pivot, pulley, pull, push, rack, resistance, rotary motion, speed, time, unbalanced force,		
Earth and Space (The earth and beyond)	ES1 describe the movement of the Earth, and other planets, relative to the Sun in the solar system ES2 describe the movement of the Moon relative to the Earth ES3 describe the Sun, Earth and Moon as approximately spherical bodies ES4 use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. ES5 learn that the Sun is a star at the centre of our solar system and that it has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune	Stars are held together in a galaxy by gravity When viewed from above the North Poles of the Sun and the Earth, the Earth and other planets orbit the Sun anticlockwise, causing an apparent shift in the positions of the stars over the year.	Aldebaran, Arctic, Antarctic, British Summer Time, , Greenwich Meridian, Milky Way, Moon, North Pole, , South Pole, Sun, , Universe,, asteroid, axis, compass, crescent, dawn, degrees, dusk, equator, equinox, fixed stars, Full Moon, galaxy, gibbous, hemisphere, horizon, illuminate, leap year, longitude, lunar month, meridian, nebula, New Moon, northern, orbit, planet, reflect, rotate, rotation, solar system, solstice, southern, tilt, time zone, waning, waxing,		Observing the sky at night

	(Pluto was reclassified as a 'dwarf planet' in 2006). ES6 understand that a moon is a celestial body that orbits a planet (Earth has one moon; Jupiter has four large moons and numerous smaller ones).				

Year 6					
Unit/Topic	National Curriculum objectives	Sticky knowledge	New vocabulary	Skills	Investigation
Classification (The nature library)	LTH1 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 LTH2 give reasons for classifying plants and animals based on specific characteristics. LTH3 know that broad groupings, such as micro-organisms, plants and animals can be subdivided. LTH4 should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). LTH5 find out about significance of the work of	Classification is not the same as identification. During classification the emphasis is on the similarities of objects in order to demonstrate that they belong to the same group. Identification focusses on the differences between objects in order to be able to give a specific name to that particular thing. The two processes are linked but not interchangeable.	identify, identification, classify, classification, division, family, genus, species, reason, common characteristics, distinguishing characteristics, leaves, shape, size, colour, backbone, wings, jointed legs, cased, transparent, antennae, shell, segments, explain, group, small, harmful, beneficial colony, colonies, mould, multiply, historically, grouping,	methods, processes and skills: planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	How can you grow your own micro- organism?

	scientists such as Carl Linnaeus, a pioneer of classification.			using test results to make predictions to set up further comparative and fair tests reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations identifying scientific evidence that has been used to support or refute ideas or arguments. explore and talk about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. recognise that scientific ideas change and develop over time. draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.	
Humans and health (Body pump and body health)	AIH1 identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood AIH2 recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function AIH3 describe the ways in which nutrients and water are transported within animals, including humans. AIH4 explore questions to understand how the circulatory system	Human health can be affected by many factors, we can look after ourselves by; Having a good diet Understand which organisms carry diseases Understand the negative affect of substances Increase healthy activities and sleep well Looking after our mind	alcohol, asthma, balanced diet, beats per minute (bpm), breathing, calories, carbohydrates (including sugars), cigarettes, doping, drugs, exercise, fat, fibre, heart, heart rate, intensity, illegal, impact,, long-term effect, lungs, medicine, mental benefits, nutrition, oxygen, passive smoking, peer pressure, performance enhancing, physical benefits, , pulse rate, RDA (recommended daily allowance), recovery rate, resting rate, roughage, saturated fat,	How pulse rate is affected by exercise?

	enables the body to function. AIH5 learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. AIH6 explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.		short-term effect, solvents, steroids, tobacco, unsaturated fat,	Pupils should read, spell and pronounce scientific vocabulary correctly.	
Evolution and Inheritance (Everything Changes and Our changing world)	EI1 recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago EI2 recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents EI3 identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. EI4 be introduced to the idea that characteristics are passed from parents to their offspring, EI5 appreciate that variation in offspring over time can make animals more or less able to	Through sexual reproduction living things produce offspring that are similar to but not exactly the same as the parents. The offspring are also not identical to each other; even 'identical twins' show slight differences. Humans have been able to use their knowledge of how natural variation occurs to carry out selective breeding in many different types of organism How creatures have adapted over time, eg camouflage	population, variation, environment, inheritance, adaptation, selective breeding, generation, survival, natural selection, evolution, fossils, genes, genetics, DNA, extinct, extinction, speciation,		What evidence is there that living things have changed over time?

	survive in particular environments,				