Knowing more. Remembering more. Applying more!

Science—Understanding the World

	Autumn	Spring	Summer
Nursery	**All about me, People who help , Light and dark, Christmas**	**Hot and Cold, Winter and Ice. Penguins and Keeping Warm. Lunar New Year, Shrove Tuesday,** **Mothers Day, Easter**	**Animals-Wildlife, Farm and Safari. Food. Keeping Healthy and Growing Up.**
Knowledge I know….	I know that I have a body and that it has different parts I know that there is a daytime and a night time and that different things happen at these times I know that heating things can change what they look like	I know that water can be frozen to make ice I know that ice will melt when it is not kept cold I know that making things cold causes a change I know that I can push and pull objects to move them	I know that there are different types of living things I know that living things grow I know that living things develop over time I know that plants need care to grow
Skills I can...	I can name some parts of my body and sing songs about them I can name my fingers I can talk about the things I do in the day I can talk about the things I do at night I can begin to use some words to describe what happens when something cooks	I can talk about ice and snow and how they melt I can push an object to move it away from me I can pull an object to move it towards me.	I can name some types of living things-plants and different kinds of animals I can talk about the life cycle of a caterpillar I can talk about planting seeds I can care for a plant by watering it and making sure it has some light
Vocabulary	Head, tummy, leg, arm, finger, foot, toe, shoulder, knee, elbow Finger names-tommy thumb, ruby ring, middle man, peter pointer, baby small Gloopy, lumpy, hard, soft, pour, hot	Ice, snow, melt, change, warm, hot, freezing Push, pull, roll, move, towards, away	Animal, plant, living, creature, caterpillar, egg, chrysalis (cocoon in some books) butterfly Plant, soil, water, light Grow, change, develop, time related vocabulary
What is this the foundation for?	Looking at skeletons and how parts of the body move Looking at melting, change of state and how change of state can be prevented/slowed down. Fingers-linked to handwriting and all fine motor work	Looking at freezing and melting, change of state and how change of state can be prevented/slowed down. Forces work (y3)	Chick life cycle work, change of seasons, classification of living things

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Science—Understanding the World

	Autumn	Spring	Summer
Reception	**All about me, People who help , Light and dark, Christmas**	**Hot and Cold, Winter and Ice. Penguins and Keeping Warm. Lunar New Year, Shrove Tuesday, Mothers Day, Easter**	**Animals-Wildlife, Farm and Safari. Food. Keeping Healthy and Growing Up.**
Knowledge I know….	I know that inside my body there is a skeleton which makes me move I know that there are seasonal changes I know that shadows are made when light is blocked I know that the daytime is light, night time is dark and that the time this happens changes over the year. I know that cooking causes change	I know that freezing and heating are opposite ways of effecting change on water I know that there are some ways to slow down the change I know that in spring, new life starts to appear I know that chicks also have life cycles	I know that plants need care to grow I know that some plants have edible parts which can be harvested I know that animals and humans need certain things to survive I know that different kinds of animals need different things
Skills I can...	I can name some of my bones, their location and talk about how they move I can name the seasons I can use light and objects to make shadows I can talk about what heat does when cooking	I can talk about how a change can be slowed down e.g. by wrapping up a warm object or by putting a frozen object in a cold place I can identify some signs of growth I can talk about the life cycle of a chick	I can talk about plans and what they need to grow I can talk about edible plants and how you can pick these I can talk about animals and what they need to survive (link with trip)
Vocabulary	Skull and other bone names e.g. ribs, clavicle, hip Skeleton Elbow, knee, ankle Spring, summer, autumn, winter, clocks back, clocks forward Light, dark, shadow, block, reflect Melt, boil, pour, bake	Freeze, boil, hot, cold, change, slow down, speed up Shoots, buds, flowers Egg, chick, hen, lay, hatch	Animal, plant, living, creature, animal, human, mammal Plant, soil, water, light, fruit, vegetable, harvest, pick, fruit, vegetable Grow, change, develop, time related vocabulary Light, water, food, shelter
What is this the foundation for?	Seasonal changes and weather Body parts and senses States and matter-solid, liquid	Carrying out experiments and talking about ideas Classifying animals & their life cycles Describe the growth of seeds, bulbs	Classification of living things British animals, carnivores, herbivores and omnivores. Naming plants

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	Autumn	Autumn
Year One	**Everyday Materials**	**Seasonal Changes**
Knowledge I know….	I know how to distinguish between an object and the material from which it is made. I know a variety of everyday materials, including wood, plastic, glass, metal, water and rock. I know the simple physical properties of a variety of everyday materials and group together a variety of everyday materials on the basis of their simple physical properties. I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	I know how to make and use simple instruments for observing the weather, setting up a simple weather station I know how to use my own experience and simple data to describe the changes in the weather with the seasons I know how to provide a simple fictional weather forecast for a month of the year I know how to stay safe in the sun. I know where the hottest parts of the World are I know how to make any measurements from the weather station and observe the weather outside I know that rain comes from clouds I know that not all clouds produce rain and that there are different kinds of clouds I know that mist and fog is due to water in the air I know about different types of storm around the World – hurricanes, tornados, monsoons I know that some storms in the UK are accompanied by thunder and lightning I know that snow forms in clouds in cold weather I know that some parts of the world and some seasons are more likely to have snow
Skills I can...	I can ask simple questions and recognise that they can be answered in different ways. I can perform simple tests. I can identify and classify. I can use observations and ideas and to suggest answers to questions. I can gather and record data.	I can ask simple questions and recognise that they can be answered in different ways I can observe closely, using simple equipment I can perform simple tests I can use my observations and ideas to suggest answers to questions I can gather and recording data to help in answering questions
Vocabulary	Material, Appearance, Texture, Property, Wood, Stone, Fabric, Plastic, Clay, Rubber, Metal, Glass, Paper, Cardboard, Rough, Smooth, Hard, Soft, Shiny, Dull, stretch, Rigid, Waterproof, Absorbent, Transparent, Opaque, Translucent, Transparent, Elastic, Malleable, Force, Permanent, Fair test, Measurement, Observation, Flexible.	Weather, season, spring, summer, autumn, winter, typical, climate, measure, predict, weather forecast, sun, temperature, wind, rain, rainfall, clouds, Precipitation, frost, mist, snow, thunder, symbol, sleet, snowstorm, Beaufort scale, damage, sunburn, sunstroke, sunglasses, sun cream, sun hat, ultra-violet, season, dry, drought, desert, equator, jungle, climate, fog, raincloud, rainbow, breeze, storm, gale, hurricane, tornado, blizzard, thunderstorm, rainstorm, hailstorm.

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	Spring	Summer
Year One	**Animals, including Humans**	**Plants**
Knowledge I know….	I know how to identify and name a variety of common British animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. I know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores. I know how to describe and compare the structure of a variety of common animals. I know how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	I know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. I know how to identify and describe the basic structure of a variety of common flowering plants, including trees. I know how bulbs and/or seeds grow.
Skills I can...	I can ask simple questions about animals I can observe closely and use observations to suggest answers to questions I can identify and classify into type of animals and diets	I can use observations notes and charts to describe the growth of seeds/bulb I can make observations of a range of seeds including the seeds of trees I can monitor the growth of seeds and bulbs planted
Vocabulary	Knuckles, Palm, Gums, Ear lobes, Limbs, Diet, Exercise, Hygiene, Germs, Animal, Bird, Fin, Eggs, Scales, Carnivore, Herbivore, Omnivore, Research, Habitat, Appearance, Mammal, Fish, Amphibian, Reptile, Invertebrate, Cold blooded, Warm blooded	Seed, Bulb, Compost, Grow, Water, Plant, Sprout, Roots, Stem, Leaf, Flower, Weed, Garden, Flowerbed, Park, Soil, Growth, Height, Chart, Table, Germinate, Petal, Fruit, Shoot, Tree, Trunk, Branch, Twig, Evergreen, Deciduous, Nut, Conker, Acorn, Pip, Sycamore seed, Wild, Meadow, Cultivated, Results, conclusion

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	Autumn
Year Two	**Living Things and their Habitats**
Knowledge I know….	I know how to explore and compare the differences between things that are living, dead, and things that have never been alive I know the characteristics of living things I know that plants are living things
Skills I can...	I can observe closely, using simple equipment I can identify and classify I can use observations and ideas to suggest answers to questions I can gather and record data to help in answering questions.
Vocabulary	Alive, animal, earthworm, category, plant, food, sort, senses, living, non-living, classify, natural, stem, growth, leaves, reproduction, human, wormery, soil, chalk, sand, leaves, characteristics, nutrition, growth, excretion, sensitivity, seed, water, excretion, roots, nutrition

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	Spring
Year Two	**Animals, including Humans**
Knowledge I know….	I know how to identify and name a variety of common British animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. I know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores. I know how to describe and compare the structure of a variety of common animals. I know how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.
Skills I can...	I can observe closely newly hatched eggs, lambs with their mothers or birds feeding. I can use observations to answer questions about animal growth. I can gather and record data by drawing or taking photographs I can sort and classify foods
Vocabulary	mammals, eggs, birth, hatch, development, baby, toddler, teenage, growth, warmth, air, breathe, nutrition, germs, bacteria, cleanliness, wellbeing, health, changes, protein, calcium, carbohydrates, energy, fats, balanced diet, healthy

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	Summer	Summer
Year Two	**Uses of Everyday Materials**	**Plants**
Knowledge I know….	I know how to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. I know how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	I know how to identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. I know how to identify and describe the basic structure of a variety of common flowering plants, including trees.
Skills I can...	I can ask simple questions and recognise that they can be answered in different ways. I can perform simple tests I can identify and classify I can use observations and ideas and to suggest answers to questions. I can gather and record data.	I can observe and describe how seeds and bulbs grow into mature plants. I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Vocabulary	material, properties, force, wood, glass, metal, fabric, plastic, wool, stone, brick, rubber, opaque, malleable, transparent, flexible, rigid, suitable/unsuitable, appropriate, lycra, stone, steel, brick, paper, aluminium, clay, bone, brick, cardboard, carbon fibre, inventor, strength, chart, fair test, results, data, conclusion, evaluation, improvements,	leaf, stem, root, bud, warmth, wilt, shrivel, compost, sprout, germinate, edible, temperature, annual, biennial, perennial, evergreen, deciduous, propagator, evaluate

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	Autumn
Year Three	**Rocks**
Knowledge I know….	I know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties I know how to describe in simple terms how fossils are formed when things that have lived are trapped within rock I know that soils are made from rocks and organic matter.
Skills I can...	I can ask relevant questions and using different types of scientific enquiries to answer them I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations I can gather, record, classify and present data in a variety of ways I can identify differences, similarities or changes related to simple scientific ideas and processes . I can use straightforward scientific evidence to answer questions or to support their findings.
Vocabulary	criteria, coarse, layered, crystalline, grainy, crystal, particle, permeable, impermeable, chalk, limestone, basalt, marble, mudstone, sandstone, slate, granite, pumice, formation, crust, molten, lava, erupt, solidify, sediment, igneous, sedimentary, metamorphic, organic matter, fossil, mould, prehistoric, minerals, deduce, carnivore, herbivore

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	Spring 1	Spring
Year Three	**Light**	**Forces and Magnets**
Knowledge I know….	I know the difference between light sources and other shiny objects I know the name a number of light sources including the Sun I know that they need light in order to see things and that dark is the absence of light I know that light is reflected from surfaces I know that light from the sun can be dangerous and that there are ways to protect eyes I know that shadows are formed when the light from a light source is blocked by a solid object I know how to find patterns in the way that the size of shadows change.	I know how to compare how things move on different surfaces I know that some forces need contact between two objects, but magnetic forces can act at a distance I know how to observe how magnets attract or repel each other and attract some materials and not others I know how to 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 I know magnets have two poles I know whether two magnets will attract or repel each other, depending on which poles are facing.
Skills I can...	I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations I can take accurate measurements using standard units, using a range of equipment, including thermometers, data loggers recording findings I can use scientific language, drawings, labelled diagrams, keys, bar charts, and tables I can report on findings from enquiries, displays or presentations of results and conclusions I can use results to draw simple conclusions I can suggest improvements and raise further questions I can use straightforward scientific evidence to answer questions or to support their findings.	I can set up simple practical enquiries, comparative and fair tests I can gather, record, classify and present data in a variety of ways to help in answering questions I can record findings using simple scientific language, drawings, labelled diagrams, bar charts, and tables I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions I can use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests
Vocabulary	light, dark, night, day, light source, sun, moon, torch, candle, lamp, glow, shine, reflect, sparkle, reflected, mirror, light source, danger, surface, shiny, dull, reflective strip, bright, fluorescent, high visibility, back to front, night, day, twilight, dim, daylight, senses, reflect, eye, eyelid, eye lashes, pupil, iris, eyebrow, sunglasses, blink, transparent, opaque, translucent, block, shadow, travel, bright, sensor, data logger, data	Force newton , twist, force meter, direction, compress, pull, speed, stretch, push, distance, shape, mass, results, table, prediction, fair test, conclusion, evaluation, magnet, repel, compass, attract, rotate, variable, strength

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	Summer	Summer
Year Three	**Animals, including Humans**	**Plants**
Knowledge I know….	I know how to identify and name a variety of common British animals that are birds, fish, amphibians, reptiles, mammals and invertebrates. I know how to identify and name a variety of common animals that are carnivores, herbivores and omnivores. I know how to describe and compare the structure of a variety of common animals. I know how to identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	I know how to identify and describe the functions of different parts of flowering plants; roots, stem, leaves and flowers. I know 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. I know the way in which water is transported within plants. I know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.
Skills I can...	I can ask questions I can make systematic observations I can gather, record and classify data I can report findings I can use results to draw simple conclusions I can identify similarities and differences I can use straightforward scientific evidence	I can set up simple practical enquiries, comparative and fair tests. I can make systematic and careful observations and take accurate measurements using standard units using a range of equipment, including thermometers and data loggers. I can record findings using drawings, labelled diagrams, keys, bar charts and tables. I can report on findings from enquiries, written explanations or presentations of results and conclusions.
Vocabulary	Diet, invertebrate, vertebrate, carnivore, omnivore, herbivore, mammal, plant, carbohydrate, protein, fat, vitamin, mineral, simple, complex, sweet, fatty, growth, repair, energy, fuel, pelvis, skull, ribs, vertebrate, spine, external, internal, movement, joint, muscles, tendons, protect, contract, expand, involuntary muscle, cardiac muscle, voluntary muscle, bicep, tricep	Seedling, conditions, Observations, Variable, Prediction, Filter, Structure, Function, Nutrient, Dispersal, wilt, Bark, Tap root, Fibrous root, Wind dispersal, Animal dispersal, Scatter, Seed pod, Life cycle, Germination

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Year Four	Autumn **Electricity**	Autumn **States of Matter**
Knowledge I know….	I know some common appliances that run on electricity. I know how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. I know whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. I know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. I know some common conductors and insulators, and associate metals with being good conductors.	I know how to compare and group materials together, according to whether they are solids, liquids or gases I know 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) I know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature
Skills I can...	I can ask questions and using scientific enquiries to answer them about positive and negative terminals in batteries. I can set up a simple practical test and gather and record data about materials for conductivity. I can identify differences, similarities or changes related to simple scientific ideas and processes and to consolidate understanding of how circuits work I can plan an investigation into how the brightness of a bulb can be changed. I can identify changes related to simple ideas about batteries and bulbs and to support these ideas with scientific evidence	I can ask relevant questions and use different types of scientific enquiries to answer them. I can set up simple practical enquiries, comparative and fair tests. I can record findings and report on findings I can use results to draw simple conclusions, make predictions , suggest improvements and raise further questions identifying differences, similarities or changes.
Vocabulary	adapter alarm appliance battery break brightness bulb burn buzzer clip conductor crocodile current detect dim electric electricity fan flow graphite insulator join link mains material metal motor out plug power shock socket station switch trigger wire	area change compressed conclusion condense evaluation evaporate evidence fixed freeze gas liquid melt of precipitation solid state steam surface vapour volume water

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	Spring	Spring
Year Four	**Sound**	**Living Things and their habitats**
Knowledge I know….	I know how sounds are made, associating some of them with something vibrating I know that vibrations from sounds travel through a medium to the ear I know the patterns between the pitch of a sound and features of the object that produced it I know the patterns between the volume of a sound and the strength of the vibrations that produced it I know that sounds get fainter as the distance from the sound source increases.	I know that living things can be grouped in a variety of ways (plants: trees, grasses, flowers, ferns and mosses, vertebrates: fish, amphibians, reptiles, birds, and mammals. Invertebrates: snails and slugs, worms, spiders, and insects I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment I know that environments can change and that this can sometimes pose dangers to living things.
Skills I can...	I can ask relevant questions and using different types of scientific enquiries to answer them I can set up simple practical enquiries, comparative and fair tests I can make systematic and careful observations I can rrecord findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions I can use straightforward scientific evidence to answer questions	I can ask relevant questions and use different types of scientific enquiries to answer them I can make systematic and careful observations I can record findings using simple scientific language, keys, identifying differences, similarities or changes related to simple scientific ideas and processes.
Vocabulary	amplified analyse auditory canal cochlea compression conclusion detect drum ear evaluation inner middle muffle nerve ossicles outer pinna pitch rarefaction sensor signal sound variable vibration volume wave	abdomen algae amphibian annelid antennae arachnid backbone bird class cold-blooded cone conifer crustacean eggs feathers fern fins fur gills grass insect invertebrate limbs lungs mammal mollusc moss plant reptile root scales seed shell spore stem suckle thorax vertebrate warm-blooded

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	Summer	Summer
Year Four	**Living Things and their habitats**	**Animals, including humans**
Knowledge I know….	I know that living things can be grouped in a variety of ways (plants: trees, grasses, flowers, ferns and mosses, vertebrates: fish, amphibians, reptiles, birds, and mammals. Invertebrates: snails and slugs, worms, spiders, and insects I know how to explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment I know that environments can change and that this can sometimes pose dangers to living things.	I know the simple functions of the basic parts of the digestive system in humans. I know the different types of teeth in humans and their simple functions I know how to construct and interpret a variety of food chains, identifying producers , predators and prey.
Skills I can...	I can ask relevant questions and using different types of scientific enquiries to answer them, making systematic and careful observations I can record findings using simple scientific language, keys, identifying differences, similarities or changes related to simple scientific ideas and processes.	I can compare teeth and observe teeth I can ask questions about the different shapes of teeth I can record findings on a table when testing taste buds using straightforward scientific evidence to answer questions about keeping teeth clean I can create a model for different parts of the digestive system I can record findings using simple scientific language in a creative writing task about poo I can identify differences, similarities or changes related food chains
Vocabulary	abdomen algae amphibian annelid antennae arachnid backbone bird class cold-blooded cone conifer crustacean eggs feathers fern fins fur gills grass insect invertebrate limbs lungs mammal mollusc moss plant reptile root scales seed shell spore stem suckle thorax vertebrate warm-blooded	absorb acid anus bacteria bile buds canine carnivore cavity chain chew chyme consumer decay digest enzyme excrete faeces food gum herbivore incisor intestine molar muscle oesophagus omnivore prey producer saliva squeeze stomach swallow taste teeth waste

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Year Five	Autumn Earth and Space	Autumn Animals, including humans
Knowledge I know….	I know that the Sun, planets and moons in the solar system are approximately spherical in shape I know the relative motion of the Earth, the Moon and the Sun I know how ideas about the solar system have changes through the centuries including how the geocentric model of the solar system gave way to the heliocentric model I know the eight planets within the solar system and their positions relative to the Sun I know how to compare planets in terms of atmosphere, time to orbit the Earth, period of rotation, number of moons etc. I know that night and day in can be explained in terms of the rotation of the Earth and identify patterns in data about sunrise and sunset I know how to investigate differences in the time of day and the length of day in different parts of the World I know how to describe and explain in simple terms how the appearance of the Moon in the sky changes over the course of 28 days I know how to investigate factors that affect the formation of craters, taking measurements with increasing accuracy and precision, taking repeat readings when appropriate.	The suggested lessons from Engaging Science are covered as followed: Lesson 1 - Year 3 Jigsaw life cycles Lesson 2 - Year 5 Puberty Lesson 3 - conception is covered in Year 6 This will be covered in RSE from Jigsaw and not by using the science curriculum 'Engaging Science'. There will not be an explicit science topic for this.
Skills I can...	I can report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms. I can use displays and other presentations I can identify scientific evidence that has been used to support or refute ideas or arguments. I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	
Vocabulary	Earth, Sun, Planets, Moon, astronomer, Astronomy, heavenly body, Distance, star, sun, Year, asteroid, orbit, Rotation, atmosphere, Gravity, axis, sunrise, Summer, orbit, sunset, Autumn, orbit, sphere, Horizon, day, planet, moon, rotation, season, Winter, shadow, spring, Daylight, full moon, half moon, Wax, Light, dark side, wane, position, crater, impact, Phase, crescent, new moon, gibbous	

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	Spring	Spring
Year Five	**Forces**	**Living things and their habitats**
Knowledge I know….	I know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object I know the effects of air resistance, water resistance and friction, that act that between moving surfaces I know that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect	I know the differences in the life cycles of a mammal, an amphibian, an insect and a bird I know the life process of reproduction in some plants and animals I know how to compare and contrast the life cycles of mammals, insects, birds and amphibians
Skills I can...	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate I can record data and results of increasing complexity using scientific diagrams and labels, tables, bar and line graphs using test results to make predictions to set up further comparative and fair tests I can report and present 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	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary I can report and present findings from enquiries, including conclusions, explanations of and degree of trust in results, in oral and written forms such as displays and other presentations I can identify scientific evidence that has been used to support or refute ideas or arguments.
Vocabulary	Force,Gravity,Speed,Acceleration,Attract,Variation,Planet,Newtons,Force meter, Weightless ,Air resistance, Balance,Reliability,,Tension,Upthrust,float,Keel,Self-righting,Anomalous,Accuracy,Line graph, Conclusion,Evaluation,Axle,Pulley,Inclined,plane,Lever,Fulcrum,Ratio	Habitat, anther, carpel, cycle, dispersal, evidence, filament, germination, growth, life, measurement, metamorphosis, observation, offspring, ovary, photosynthesis, plant, root, seed, stage, stamen, stem, stigma, structure, wind, adult, asexual baby, birth, chick, cycle, diet, egg fertilisation, grow, hatch, insect, life, maturity, nectary, ovules, pollination, rear reproduction, sepals ,sexual

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	Summer
Year Five	**Properties of Materials**
Knowledge I know….	I know how to compare and group together everyday materials on the basis of their properties including their hardness, solubility, transparency, conductivity and response to magnets 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, based on my knowledge of solids, liquids and gases. I know how to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials. I know that dissolving, mixing and changes of state are reversible changes I know 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.
Skills I can...	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary I can use test results to make predictions to set up further comparative and fair tests I can report and present findings from enquiries, I can identify scientific evidence that has been used to support or refute ideas or arguments.
Vocabulary	aluminium attraction ceramic characteristic conductivity dissolve electrical flexibility glass magnetic material opacity property rubber solvent steel thermal change chemical crystallisation crystals filtration insoluble irreversible manufacture particle patent precautions product reaction saturated settling soluble solute solution

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	Autumn	Autumn
Year Six	**Light**	**Evolution and Inheritance**
Knowledge I know….	I know that light appears to travel in straight lines I know that light travels in straight lines and can use that to explain that objects are seen because they give out or reflect light into the eye I know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes I know that light travels in straight lines and can use that to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the position of the light source changes.	I know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago I know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents I know how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
Skills I can...	I can plan different types of scientific enquiries to answer questions, recognise and control variables where necessary I can take measurements, using a range of scientific equipment, increasing accuracy and precision, taking repeat readings. I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs I can use test results to make predictions to set up further comparative and fair tests I can report and present 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	I can identify scientific evidence that has been used to support or refute ideas or arguments.
Vocabulary	Light, ray, beam, light source , data logger, light sensor, Lux, opaque, transparent, translucent, object, shadow, reflection, mirror, eye, source, distance, image, screen, anomalous, graph, Relationship, screen, Focus, Puppet, theatre, size, image, special effect, filter, dark, reflection, surface, periscope, pupil, iris, lens, eyelid, cornea, optic nerve, retina, glasses, contact lenses, eye test, colour blind, sunlight, visible light, protection, repeat, measurement, sunburn, prediction, results, chart, conclusion, recommendations	Biography, Variation, Inherited, Natural selection, Survival, Naturalist, Voyage, Specimen, Adaptation, Evolution, Hypothesis, Disadvantage, Mutation, DNA, Offspring, Theory, Survival, Camouflage, Predator, Prey, deterrent, Characteristics, Evidence, Fossilisation, Characteristic, Organism, Imprint, Trait, generation

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	Spring	Spring
Year Six	**Living things and their habitats**	**Animals, including humans**
Knowledge I know….	I know 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 I know some reasons for classifying plants and animals based on specific characteristics	I know the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood I know the ways in which nutrients and water are transported within animals, including humans. I know the impact of diet, exercise, drugs and lifestyle on the way their bodies function—also covered in PSHE so teach along side.
Skills I can...	I can plan different types of scientific enquiries to answer questions I can use classification keys I can report and present 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 I can identify scientific evidence that has been used to support or refute ideas or arguments.	I can take measurements of pulse rate before and after exercise. I can record data and results using tables and line graphs to show pulse and breathing rates. I can report and present findings from enquiries, including conclusions, causal relationships and explanations and degree of trust in results with heart rate and breathing rate.
Vocabulary	Classification, kingdom, phylum, order, plants, flowering, plants, conifers, ferns, mosses, algae, animals, vertebrates, invertebrates, mammals, reptiles, amphibians, arthropods, insects, arachnids, myriapods, crustaceans, sponges , annelids, flatworms, Cnidarians, nematodes, echinoderms, Molluscs, characteristic, species, biodiversity, Variety, species, environment, threat, habitat, identify, timber, industry, farming Plant, animal, pollution, climate change, population, extinct, Microorganism, virus, bacteria, algae, protozoa, fungi, decay, single-celled, multi-celled, characteristic, disease, Recycling, yeast, microbe, food sugar, conditions, growth , rise, carbon dioxide, bubble	Blood, Circulate, Heart, Red cells, White cells, Plasma, Platelets, Nutrients, Oxygen, Transfusion, Carbon dioxide, Clotting, Infection, Haemoglobin, Right ventricle, Left ventricle, Right atrium , Left atrium, Vena cava, Pulmonary artery, Pulmonary vein, Oxygenated blood, Deoxygenated blood, Lung, Inhale, Exhale, Bronchus, Trachea, Bronchioles, Diaphragm, Alveolus, Muscles, Vein, Capillary, Artery

Knowing more. Remembering more. Applying more!

	Summer
Year Six	**Electricity**
Knowledge I know….	I know the relationship between the brightness of a lamp or the volume of a buzzer and the number and voltage of cells used in the circuit I know how to 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 I know the recognised symbols that are used when representing a simple circuit in a diagram.
I can...	I can plan an investigation to see how the number of cells in a circuit affect the other components, taking into account the need for fair testing I can take measurements, using a range of scientific equipment, with increasing accuracy and precision I can plan a fair test to investigate the effect of length and thickness on the flow of electricity in a circuit and to review the findings of this.
Vocabulary	Plug, Mains electricity, Battery, Switch, Bulb, Motor, Crocodile clips, Complete circuit, Conductor, Insulator, Buzzer, Short circuit, Parallel, Dim, Anomalous, Ammeter, Resistance, Loop, Path, Branch, Fan, Bright