

Science-Why here, why now?

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Year A	Seasonal Changes	Animals, inc humans	Materials	Materials	Animals inc humans	Plants
	Content	What happens as seasons change and differences between each season	To identify and name animals, describe and compare their structure	Distinguish between everyday materials	Compare and group materials by different criteria	Human body parts and senses	Identify and name common plants and trees
	Why here, why now	Seasonal changes as summer moves into Autumn, children can see the changes around them, describing weather as they see it changing around them	Bringing learning in from home of pets and caring for them, making links between care and basic needs, Grouping animals by criteria and structure of common animals including pets	Looking at the environment around them things they are familiar with and can develop, distinguishing between object and the material it is made from	Building on work from previous term, broadening understanding of why we use specific materials based on their criteria.	Builds on prior knowledge from pre-school and understanding of themselves as humans and animals, links to work in Yr1A2	Seasonal time of the year, links to previous learning on seasons, beginning to develop scientific vocabulary and enquiry
	Key Vocabulary	Season, spring, summer, autumn, winter, month, year date, night, sun, moon, light, doc, weather, change, names of the months, hotter, warmer, colder	mammals, birds, reptiles, fish, amphibians, Carnivore, herbivore, omnivore, skeleton,	Wood, plastic, glass, metal, rock, properties, hard, soft, permeable, impermeable, flexible, rigid,	float, sink, Hypothesis, explanation, materials, shape, size,	Head, nose, ear, shoulder, outcome elbow, wrist hand, back, chest, hit, leg, knee, ankle, foot, site, smell, touch, taste, hearing	Coniferous,, deciduous, features, Evergreen, flower, stem, leaves, root, petrol, trunk cover branch, seed, fruit, bulb
	Year B	Animals inc humans	Seasons	Materials	Plants	Animals inc humans	
	Content	Basic body parts and associated senses,	What happens as seasons change and differences between each season	Distinguish between everyday materials, Compare and group materials by different criteria	Identify and name common plants and trees	Identify and name animals, identify different categories of animals, compare and describe the skeletal structure of animals	
	Why here, why now	linked to marvellous me topic, focus on exploring how we are all the same but different	Seasonal changes as Autumn moves into Winter children can see the changes around them, describing weather as they see it changing around them	Looking at the environment around them things they are familiar with and can develop, distinguishing between object and the material it is made from	Seasonal time of the year, links to previous learning on seasons, beginning to develop scientific vocabulary and enquiry	Links to B1A1, looking at animal features and structures and how these compare to human	
	Key Vocabulary	Head, nose, ear, shoulder, outcome elbow, wrist hand, back, chest, hit, leg, knee, ankle, foot, site, smell, touch, taste, hearing	Season, spring, summer, autumn, winter, month, year date, night, sun, moon, light, doc, weather, change, names of the months, hotter, warmer, colder	Material, hard, soft, stretchy, shiny, dull. rough calmer smooth, bendy, waterproof, absorbent, transparent, opaque,	Coniferous,, deciduous, features, Evergreen, flower, stem, leaves, root, petrol, trunk cover branch, seed, fruit, bulb	Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves	

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	Year A	Seasonal changes	Animals inc humans	Materials	Materials	Animals inc humans	plants
	Content	Seasonal changes and how they affect what we do and what we see around us including changes in seasons affecting animal habitats	identifying naming animals in different groups, differences between living and the dead, food chains	distinguishing and identifying different materials, identifying and comparing the suitability of materials for different purposes	grouping materials by characteristics permanent and non-permanent changes in different materials	offspring and basic needs of animals including humans	identifying a name in a variety of plants and animals and how they grow and develop
	Why here, why now	Links to learning from year one on seasonal changes and ties this in with work on animals completed in year 1	Work links to habitats from previous term and previous work on animals and basic needs, exploring the difference between things that are living, dead and things that have never been alive,	identifying and comparing the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses being able to gather and record information to help answering questions	finding out how the shapes in solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Looking at how some changes are permanent, and some are not. Building on work from year one into features of different materials	built on further work from year one into characteristics of animals and also work on features and skeletons	Building on the understanding that children already have about the varieties of plants that are in the world and looking at how they grow and develop, following on from work in previous term an offspring of animals are making links between the two
	Key Vocabulary	Seasons, spring dormant, food, water, shelter, habitat, adoptions, survival, Hibernation, migration	Mammals fish, amphibians, reptiles, birds, carnivores, herbivores, omnivores, skeleton, living,, food chain, food producer	Materials, objects, properties, rigid, flexible, hard, soft, permeable, impermeable, flexible, magnetic	Material, properties, float, sink, uses, purpose, new materials,	Offspring, organs, senses, life cycle, changes, basic needs, survival,	Leaves flower, blossom, festival, fruit, very, root commerce seed, trunk, branch, stem, bark, stop, bud, deciduous, Evergreen, germination, flowering, fertilisation, dispersal
	Year B	Animals including humans	Seasonal changes	Materials	Materials	Animals inc humans	
	Content	senses, what they see here touch smell and taste, function of human skeleton and identification of main bones	changes and how they affect what we do and what we see around us including changes in seasons affecting animal habitats	distinguishing and identifying different materials, identifying and comparing the suitability of materials for different purposes	grouping materials by characteristics permanent and non-permanent changes in different materials	offspring and basic needs of animals including humans. Characteristics of a variety of birds and reptiles similarities and differences between fish and amphibians sorting animals using Venn diagrams and tables, basic needs and care	
	Why here, why now	Develops work from year one lon the human body and characteristics, features and similarities and differences	Links to learning from year one on seasonal changes and ties this in with work on animals completed in year 1	identifying and comparing the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses being able to gather and record information to help answering questions	finding out how the shapes in solid objects made from some materials can be changed by squashing, bending, twisting and stretching. Looking at how some changes are permanent, and some are not. Building on work from year one into features of different materials	built on further work from year one into characteristics of animals and also work on features and skeletons	
	Key Vocabulary	Eye, ear, nose, tongue, touch, taste, hearing, smelling,	Seasons, spring dormant, food, water, shelter, habitat, adoptions, survival, Hibernation, migration	Materials, objects, properties, rigid, flexible, hard, soft, permeable, impermeable, flexible, magnetic	Material, properties, float, sink, uses, purpose, new materials,	Skulls, tusk,, pelvis, ribs, spine, head, body, eyes, ears. mouth, teeth, leg, tail, wing, claw, Fin, scales, feathers, fur, beak, paws hooves, vertebrate, invertebrate, amphibian, reptile	

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	Year A	Animals inc humans	Light	Rocks and soils	Forces and magnets	Animals inc humans	Plants
	Content	nutrition, 5 main food groups, herbivores, carnivores, omnivores, living things getting energy from the sun, producers and consumers, food chains and food webs, human digested system	know that we need light in order to see and that dark is the absence of light, know about reflections and the dangers of sunlight come up consider how shadows are formed look at patterns in the way the size of shadows change	comparing group different kinds of rocks on the basis of appearance and similar physical properties, describe in simple terms how fossils are found when things have been trapped within rock, recognise that soils are made from rocks and organic matter	Things move on different surfaces call my notice that some forces need contact between two objects, but magnetic forces can act at a distance, looking at attraction or repelling, looking at variety of everyday materials on basis of whether they're magnetic or not	Endoskeleton's, names and locations of major bold bones including skull, je, humerus ETC, muscles including pools and not pushing, endoskeletons for different animals Thomas similarities and differences between skeletons and the skeletons, exoskeletons, hydro skeletons	food plants, flowering plants, growth of different plants in different mediums, transpiration, relationship between structure and function,
	Why here, why now	builds on earlier work on the basic needs of animals and plants, focusing on nutrition and the digestive system, links to healthy eating and physical well-being	building on work from key stage one on sensors in particular sight and eyes, focus on the background to vision and light in particular address misconceptions on light sources come up focus on the importance of sun as the ultimate energy source.	Fits in with Stone Age topic, looking at uses of rocks and stones and links between geology and archaeology	builds on work from key stage one on everyday materials, narrowing the focus to specific magnetic non-magnetic concepts	Builds on previous work on skeletons from key stage 1 extending to look at alternative forms, working to complete the picture about the structure of animals including humans	Builds on previous work about the requirements of plants and basic structure
	Key Vocabulary	Food groups, herbivore, carnivore, omnivore, producer, consumer, digestive system	Light sources, reflection, shadows, energy, straight lines, opaque,	granular, crystalline, sedimentary, metamorphic, granite, sandstone, fossils, hardness	pull, push, strong, weak, force, contact, surface, friction, resistance, attraction, repel, North Pole, South Pole	Endoskeleton access skeleton hydro skeleton muscle tibia skull humerus ulna, femur	Flowering plant, root, stem, trunk, leaf, light, water, transportation, nutrient, reproduction, seed formation, pollination, germination, photosynthesis
	Year B	Living things and habitats	Animals inc humans	Electricity	Plants	Light	
	Content	group in animals, identification from body features and lifestyle cycles, classification of vertebrates and invertebrates, dichotomous keys	nutrition, 5 main food groups, herbivores, carnivores, omnivores, living things getting energy from the sun, producers and consumers, food chains and food webs, human digested system	identifying common appliances that run on electricity, constructing simple series electrical circuits, Know the key parts of a basic circuit, testing circuits, working with switches, conductors and insulators	food plants, flowering plants, growth of different plants in different mediums, transpiration, relationship between structure and function,	know that we need light in order to see and that dark is the absence of light, know about reflections and the dangers of sunlight come up consider how shadows are formed look at patterns in the way the size of shadows change	
	Why here, why now	built on work from key stage one on animal groups and classification by features into more scientific methodology,	builds on earlier work on the basic needs of animals and plants, focusing on nutrition and the digestive system,	building on work for materials, and forces in previous year groups, new topic for this group, leading to	Builds on previous work about the requirements of plants and basic structure	building on work from key stage one on sensors in particular sight and eyes, focus on the background to vision and light in particular address	

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		before looking at classification in upper key stage 2	links to healthy eating and physical well-being	further developments in upper key stage 2		misconceptions on light sources come up focus on the importance of sun as the ultimate energy source.
	Key Vocabulary	food chain, organisms, ecosystem, predator, prey, consumer, producer,	Food groups, herbivore, carnivore, omnivore, producer, consumer, digestive system	Electricity, current, generate, renewable, solar, new clear, geothermal, hydro and wind, non-renewable, fossil fuel, coal, oil, natural gas, appliances, battery, cell resistor, insulated, switch, circuit	Flowering plant, root, stem, trunk, leaf, light, water, transportation, nutrient, reproduction, seed formation, pollination, germination, photosynthesis	Light sources, reflection, shadows, energy, straight lines, opaque,

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	Year A	States of matter	Animals including humans	Forces -magnets and gravity	Forces-Mechanisms I	Living things and habitats	Sound
	Content	solid liquid and gases. Change of state, evaporation and condensation, water cycle	function of the basic parts of the digestive system in humans, different types of teeth in humans and their functions	review of year three work on magnetic forces and contact, magnetic materials, poles, attraction, repel, gravitate air resistance	mechanisms come at levers, pulleys and gears, air and water resistance Galileo and Newton	group in animals, identification from body features and lifestyle cycles, classification of vertebrates and invertebrates, dichotomous keys	Identify how sounds are made associating some of them with something vibrating, know that vibrations travel through the medium to the ear, find patterns in pitch, find patterns in volume and strength of
	Why here, why now	Building on from working key stage 1 on materials and changes developing and understanding are the differences between solids, liquids and gases, insulation, water cycle link to rivers topic	Builds from earlier works and lower key stage 2 or nutrition and food and in key stage 1 on skeletons and bones	revision of work from year 3 leading into initial work on gravity and air resistance Then forces in spring 2	following on from spring one developing understanding of forces and gravity	built on work from key stage one on animal groups and classification by features into more scientific methodology, before looking at classification in upper key stage 2	First topic on this subject thanks to national curriculum combat building on previous work on senses in key stage 1
	Key Vocabulary	matter, solid, liquid, gas, temperature, particles, insulation, water cycle, evaporation	Digestion, teeth, incisors, canines, molars, enamel Connor dentine, pulp, school, jawbone, carnivore, Herbie vote, decay, prevention	Pull, push, strong, weak, force, contact, friction resistance, magnetic, attraction, North Pole South Pole	Gravitate, resistance, false says,	food chain, organisms, ecosystem, predator, prey, consumer, producer,	Sound vibrations Pitch, volume, strength, pitched instruments,
	Year B	Animals including humans	Electricity	Animals Inc humans	living things and habitats	Forces and gravity	
	Content	food chains, producers, predators and prey	identifying common appliances that run on electricity, constructing simple series electrical	Changes as humans develop to old age come up puberty, difficulties involved,	life cycles of different amphibians, mammals and insects	understand the effects of the force of gravity acting between the earth and falling objects, air resistance water resistance and friction, mechanisms including levers pulleys and gears,	

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			circuits, Know the key parts of a basic circuit, testing circuits, working with switches, conductors and insulators			
	Why here, why now	follows on from earlier work on nutrition leading into discussion of interdependence of animals, predators prey consumers and producers, ecosystems	building on work for materials, and forces in previous year groups, new topic for this group, leading to further developments in upper key stage 2	leading into further work on puberty and sex education, building on earlier work on life cycles in animals	links to previous terms work on human life cycle and reproduction	Leading on from previous year 3 work on forces and magnetism, developing greater understanding and addressing misconceptions about gravity and forces.
	Key Vocabulary	food chain, Organism, ecosystem, predator, prey, consumer, producer, food web, apex	Electricity, current, generate, renewable, solar, new clear, geothermal, hydro and wind, non-renewable, fossil fuel, coal, oil, natural gas, appliances, battery, cell resistor, insulated, switch, circuit	fertilisation, prenatal, gestation, reproduce, asexual, sexual, life cycle, adolescence, puberty, menstruation, adulthood, life expectancy	asexual, sexual, fertilise, gestation, metamorphosis,	False combat lever, bullet, friction, resistance, gravity, gravitation

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		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 and 6	Year A	Evolution and inheritance	Animals inc humans	Forces and gravity	Animals inc humans	Scientists and Inventors	
	Content	Change over time, inheritance, evolution and adaptation, Mary Anning	Systemic and pulmonary circulation, transportation of nutrients. Blood components,	understand the effects of the force of gravity acting between the earth and falling objects, air resistance water resistance and friction, mechanisms including levers pulleys and gears,	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Overarching topic involving scientists and inventors in the fields of animals, earth and space, reproduction, life cycles, materials, scientific inquiry and investigation, drawing together earlier learning in these areas	
	Why here, why now	Building on work on life cycles, classification and fossils, summarising learning	Bringing together work from previous years on human body and structures	Leading on from previous year 3 work on forces and magnetism, developing greater understanding and addressing misconceptions about gravity and forces.	Preparation for secondary school, understand the impact of that exercise drugs and poor lifestyle choices	Cumulation of children's learning in a range of scientific areas, allows them to draw together threads from previous years	
	Key Vocabulary	Inheritance, evolution, fossils, natural selection, inherited, stratigraphy, hybrids	Pulmonary, systemic, circulation, blood cells, platelets, oxygen, plasma, radial, pulse	False combat lever, bullet, friction, resistance, gravity, gravitation	alcohol, consumption, negative effects, nicotine, cancer, heart damage, lung damage, diet, lifestyle,	Attenborough deGrasse Tyson Hamilton Crane Kwolek Davinci Stonehenge	
	Year B	Electricity	Living things and habitats	Earth and space	Living things and habitats	Materials	Light
	Content	circuit symbols and diagrams come up major discoveries in electricity, effects of changes in voltage, scientific discoveries Edison and Tesla	life cycles of different amphibians, mammals and insects	movement of the earth into the planets, movement of the moon relative to earth, explanation of Day and night,	classification, Linnaeus hierarchical groups and binomial nomenclature, evolutionary taxonomy, knowledge of common ancestors	Electrical and thermal conductivity, solutions, reversible and irreversible changes, changes of state	Light travel, reflection, refraction, prisms, shadows, structure of eyes
	Why here, why now	building on previous work on electricity and looking at the impact on society in the current day	links to previous terms work on human life cycle and reproduction	Development of earlier work on seasonal changes and light	building on previous work on evolution and inheritance, and grouping animals and classification from lower key stage 2	Bringing together work from previous years on materials and magnetism,	Extension of earlier work on light, building on understanding of properties and explanations
	Key Vocabulary	circuit, symbol, cell, battery, current, amps, voltage, resistance, electrons, inventions,	asexual, sexual, fertilise, gestation, metamorphosis,	send, start, moon, planet, satellite, orbit, rotate, geocentric, heliocentric, Copernicus, Kepler, Galileo	taxonomy, key, domain, Kingdom, phylum, class, order, family, genus, species, bacteria, microorganism, Linnaeus Darwin	Thermal, electrical, insulation, change of state, soluble/insoluble, reversible/non-reversible	Cornea, iris, pupil, retina optic nerve, reflection, refraction

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