

Science progression of knowledge, skills and vocabulary EYFS, KS1 and KS2

	Units of work	Key knowledge	Key skills	Key vocabulary
2-plus	• Mini-theme 1: Family / Facial features / Body parts / Autumn • Mini-theme 2: Instruments • Mini-theme 3: Colours & colour mixing / Exploring fruit & animals / Hunts & trails • Mini-theme 4: Cardboard box rockets / Wheel track paintings / Paper planes • Mini-theme 5: Animal sounds / Farm small world / Spring • Mini-theme 6: Sealife / Boats / Floating and sinking	<i>Note: scientific knowledge not specified in Development Matters for this age group. Please ensure that the topic specific knowledge below is taught during each science-related mini theme</i> Mini-theme 1: • We use our eyes to see, we use our nose to smell, we use our ears to listen • When it is autumn, leaves and conkers fall off the trees Mini-theme 2: • Different instruments make different sounds • Actions lead to reactions, such as pressing a button to make a sound Mini-theme 3: • We can mix colours to create new ones • Forests are places that have lots of trees Mini-theme 4: • Rockets and aeroplanes fly in the sky • Cars and bikes move when the wheels go round Mini-theme 5: • Different animals make different sounds and have different features • When it is spring it is warmer, and baby animals are born Mini-theme 6: • Lots of different creatures live in the ocean • Things can float up or sink down	<i>Early science skills are foundational and are developed through play and everyday experiences. Opportunities for children to explore and observe the world around them help build these important scientific skills</i> • Repeat actions that have an effect • Explore materials with different properties • Explore and respond to different natural phenomena in their setting and on trips • Explore natural materials, indoors and outside	• Mini-theme 1: eyes, ears, nose, hands, feet, leaf, tree, conker • Mini-theme 2: bang, shake, blow, loud, quiet, drum, shaker, whistle • Mini-theme 3: mix, mango, pineapple, juicy, zebra, elephant, bear, cave, forest, river • Mini-theme 4: rocket, aeroplane, train, bike, wings, wheels, round, drive, fly, move • Mini-theme 5: cow, pig, horse, sheep, chicken, tail, fur, feather, barn, pond • Mini-theme 6: shark, whale, octopus, starfish, seahorse, shell, ocean, sail, float, sink
Nursery	<u>Year A</u> • Mini-theme 1: Facial features / Body parts / Autumn • Mini-theme 2: Different materials for building / Winter • Mini-theme 3: Different instruments / Making instruments / Using everyday objects to make music	• Talk about what they see, using a wide vocabulary • Understand the key features of the life cycle of a plant and an animal • Plant seeds and care for growing plants • Begin to understand the need to respect and care for the natural environment and all living things • Make healthy choices about food, drink, activity and toothbrushing	<i>Early science skills are foundational and are developed through play and everyday experiences. Opportunities for children to explore and observe the world around them help build these important scientific skills</i> • Use all their senses in hands-on exploration of natural materials	<u>Year A</u> • Mini-theme 1: cheeks, chin, shoulders, knees, elbows, acorn, pinecone, pumpkin, squirrel • Mini-theme 2: hard, strong, rough, smooth, metal, brick, glass, wood, cement • Mini-theme 3: piano, tambourine, guitar, maracas, beat, strum, fast, slow, echo • Mini-theme 4: sail, mast, float, sink, anchor, push, pull, steer

	• Mini-theme 4: Boat making • Mini-theme 5: Spring • Mini-theme 6: How to care for pets / Describing pets / Naming pets / Vets / Summer Year B • Mini-theme 1: Facial features / Body parts / Autumn • Mini-theme 2: Different materials for building / Winter • Mini-theme 3: Body percussion • Mini-theme 4: Dinosaur names / Excavation play / Dinosaur small-world • Mini-theme 5: Different job roles / Dental care / Fire safety / Spring • Mini-theme 6: Animal names / Animal habitats / Animal features / Summer		• Explore collections of materials with similar and/or different properties • Explore how things work • Explore and talk about different forces they can feel • Talk about the differences between materials and changes they notice • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?”	• Mini-theme 5: plant, grow, warm, seed, soil • Mini-theme 6: kennel, tank, cage, hutch, lead, medicine, vet, sweaty, thirsty Year B • Mini-theme 1: cheeks, chin, shoulders, knees, elbows, acorn, pinecone, pumpkin, squirrel • Mini-theme 2: hard, strong, rough, smooth, metal, brick, glass, wood, cement • Mini-theme 3: clap, stamp, click, pat, hum • Mini-theme 4: Tyrannosaurus Rex, Triceratops, Stegosaurus, extinct, bones, skeleton, claws, scales, fossil • Mini-theme 5: healthy, safe, medicine, exercise, plant, grow, warm, seed, soil • Mini-theme 6: lion, giraffe, rhinoceros, hippopotamus, ostrich, binoculars, compass, desert
Reception	• Mini-theme 1: Similarities & differences / The senses /Autumn • Mini-theme 2: Different types of bears / Habitats / Winter • Mini-theme 3: Healthy eating / Where food comes from / Cooking • Mini-theme 4: Growing beans • Mini-theme 5: Minibeasts / Lifecycles / Spring • Mini-theme 6: Animal adventures / Space adventures	• Talk about what they see, using a wide vocabulary • Understand the key features of the life cycle of a plant and an animal • Plant seeds and care for growing plants • Begin to understand the need to respect and care for the natural environment and all living things • Make healthy choices about food, drink, activity and toothbrushing	<i>Early science skills are foundational and are developed through play and everyday experiences. Opportunities for children to explore and observe the world around them help build these important scientific skills</i> • Use all their senses in hands-on exploration of natural materials • Explore collections of materials with similar and/or different properties • Explore how things work • Explore and talk about different forces they can feel • Talk about the differences between materials and changes they notice • Understand ‘why’ questions, like: “Why do you think the caterpillar got so fat?”	• Mini-theme 1: same, different, senses, smell, taste, touch, hear, harvest • Mini-theme 2: polar bear, panda bear, brown bear, habitat, hibernate, cave, hunt, cub • Mini-theme 3: cook, bake, raw, crop, grain, vitamins, healthy, unhealthy • Mini-theme 4: sprout, shoot, root, stem, sunlight, observe • Mini-theme 5: lifecycle, caterpillar, butterfly, chrysalis, egg, insect, antennae, hive, pollinate, sunflower • Mini-theme 6: safari, explore, spaceship, planet, Earth, gravity, launch, astronaut

Year 1/2	<u>Year A</u> • Unit 1: Seasonal Changes • Unit 2: Everyday Materials • Unit 3: Uses of Everyday Materials • Unit 4: Habitats • Unit 5: Microhabitats • Unit 6: Science Through Stories <u>Year B</u> • Unit 1: Sensitive Bodies • Unit 2: Comparing Animals • Unit 3: Life cycles and health • Unit 4: Introduction to Plants • Unit 5: Plant Growth • Unit 6: Plant Based Materials	<i>At this stage, children begin to explore the world around them through observation and simple questioning. They learn about living things, materials, and seasonal changes, laying the foundation for scientific curiosity</i> <u>Living Things and Their Environments:</u> • Understanding animals (including humans) and plants, their life cycles, basic needs, and how they interact with their habitats <u>Everyday Materials and Their Properties:</u> • Identifying, comparing, and exploring the uses of different materials and how they change <u>Seasonal Changes and Simple Forces:</u> • Observing weather patterns, day length, and how things move (pushes, pulls, gravity, and magnetism)	<u>Scientific Enquiry:</u> • Ask simple questions and recognise they can be answered through observation or tests • Identify living and non-living things <u>Practical Skills:</u> • Perform basic tests (e.g., growing plants with/without water) • Use simple equipment (e.g., a hand lens, thermometer) <u>Analysis and Communication:</u> • Record results using pictures or simple charts • Identify patterns in results (e.g., animals with fur live in colder climates)	<u>Year A</u> Unit 1: seasons, spring, summer, weather, daylight deciduous tree, evergreen tree, season, weather Unit 2: absorbent, fabric, glass, group, material, metal, object, plastic, rock, tough, waterproof, wood Unit 3: elastic, fabric , flexible, glass , material , metal), object , plastic , property, rock , suitable, wood Unit 4: alive, carnivore , dead, depend, diet , energy, food chain, growth , habitat, herbivore , life processes, mammal , omnivore , predator, prey, shelter, sort Unit 5: food chain, microhabitat, minibeast, woodland, desert, arctic, short grass, flowers, inside rotting wood Unit 6: amphibian, bird, carnivore, fish, herbivore, mammal, material, object, omnivore, reptile, season, trunk, waterproof, weather <u>Year B</u> Unit 1: Sense(s), sight, hearing, touch, taste, smell, Parts of the body e.g. eyes, legs, nose, teeth, hearing Unit 2: amphibian, bird, carnivore, compare, diet, difference, fish, group, herbivore, mammal, omnivore, reptile, similarity Unit 3: diet, germs, air, water, basic needs, egg, health, hygiene, life cycle, live young, pupa, spawn, survive, teenager, toddler, tadpole Unit 4: bulb, deciduous, diagram, evergreen, flower, fruit, garden plants, group, growth, leaf, measure, observe, roots, seed, stem, trunk, wild plants Unit 5: bulb, diagram, energy, flower, germinate, growth, leaf, life cycle nutrient, seed, shoot, stem. Unit 6: alive, dead, fabric , flexible, germinate, growth , invention, life processes, material , plastic , property, results, seed , suitable, test, waterproof , wood
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Year 3/4	<u>Year A</u> • Unit 1: Digestion and Food • Unit 2: Electricity and Circuits • Unit 3: Sounds and Vibrations • Unit 4: Classification and Changing Habitats • Unit 5: States of Matter • Unit 6: How does the flow of liquids compare? <u>Year B</u> • Unit 1: Movement and Nutrition • Unit 2: Light and Shadows • Unit 3: Forces and Magnets • Unit 4: Rocks and Soil • Unit 5: Plant Reproduction • Unit 6: Does hand span affect grip strength?	<i>As their thinking develops, children begin to explore scientific concepts in greater depth and conduct simple investigations. They build on their understanding of living things, materials, and forces, making connections between ideas</i> <u>Living Things, Animals, and Humans:</u> • Understanding nutrition, skeletons and muscles, plant functions, life cycles, habitats, and food chains <u>States of Matter, Rocks, and Materials:</u> • Exploring solids, liquids, and gases, the water cycle, rock types, and how materials can change through heating, cooling, and other processes <u>Forces, Light, and Electricity:</u> • Investigating magnetism, friction, simple circuits, the properties of light, and how shadows are formed	<u>Scientific Enquiry:</u> • Set up simple comparative tests (e.g., how different materials react to heat) • Make predictions before conducting investigations <u>Practical Skills:</u> • Measure accurately using rulers and thermometers • Record observations systematically (e.g., in a table) <u>Analysis and Communication:</u> • Use scientific language to describe findings (e.g., "The shadow gets shorter at noon") • Present results using basic charts or diagrams	<u>Year A</u> Unit 1: canine, digest, digestive system, faeces, incisor, large intestine, molar, mouth, nutrient, oesophagus, premolar, producer, saliva, small intestine, stomach Unit 2: appliance, battery/cell, bulb, buzzer, circuit, electrical conductor, electrical, insulator, electricity, mains, motor, power source, property, switch, wire Unit 3: eardrum, insulator, pitch proof, sound, vibration, volume Unit 4: classification key, classify, conservation, deforestation, endangered, insect, invertebrate, nature reserve, non-flowering plants, vertebrate Unit 5: solid, liquid, gas, evaporation, condensation, particles, temperature, freezing, heating, precipitation Unit 6: condensing cell/battery, evaporating, gas, insect liquid, medicine, motor, pharmacology pharmacologist, precipitation, solid, witch, temperature, the water cycle, viscosity, water vapour <u>Year B</u> Unit 1: balanced diet, bone, carbohydrate, fat, fibre, invertebrate, joint, mineral, movement, muscle, nutrient, protection, protein, skeleton vertebrate, vitamin Unit 2: light source, luminous, mirror, non-luminous, opaque, mirror, reflect, reflection, reflective (shiny), shadow, translucent, transparent Unit 3: attract, contact force, force, friction, magnet magnetic material, magnetism, non-contact force, north pole, repel, south pole Unit 4: crystal, fossil, grain, hardness, rock, sediment sedimentary rock, sedimentation, soil Unit 5: female flowering plant, male, pollen, pollination, reproduction, seed dispersal, transport, flower Unit 6: bone, carbohydrate, fat, flower, fruit, friction, grip strength joint, light source, material, muscle nutrition, opaque, property, protein, seed, shadow
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Year 5/6	<u>Year A</u> • Unit 1: Unbalanced forces • Unit 2: Life cycles and reproduction • Unit 3: Circuits, Batteries and Switches • Unit 4: Classifying Big & Small • Unit 5: Evolution and Inheritance • Unit 6: Human Timeline <u>Year B</u> • Unit 1: Circulation and Health • Unit 2: Earth and Space • Unit 3: Light and reflection • Unit 4: Mixtures and Separation • Unit 5: Properties and Changes • Unit 6: Does the size of an asteroid affect the diameter of its impact crater?	<i>At this stage, children refine their ability to think scientifically, use evidence, and carry out more complex investigations. They deepen their knowledge of materials, forces, and life sciences while beginning to explore abstract scientific concepts</i> <u>Advanced Living Things and Life Processes:</u> • Understanding reproduction in plants and animals, human development, evolution, inheritance, adaptation, and the classification of living things <u>Properties and Changes of Materials:</u> • Investigating dissolving, reversible and irreversible changes, and properties like conductivity, transparency, and flexibility <u>Forces, Earth and Space, and Energy:</u> • Exploring gravity, air and water resistance, levers and pulleys, the solar system, the movement of planets, and how light and electricity behave in circuits	<u>Scientific Enquiry:</u> • Plan and conduct fair tests (e.g., comparing materials for conductivity) • Make and test hypotheses <u>Practical Skills:</u> • Use a range of tools (e.g., circuit components, graduated cylinders) for precise measurements • Record findings with increasing precision, using tables and graphs <u>Analysis and Communication:</u> • Draw conclusions based on evidence and explain patterns • Use scientific vocabulary fluently to describe and report findings	<u>Year A</u> Unit 1: air resistance, gear, gravity, lever, line graph, line of best fit, pivot, pulley, surface area, water resistance Unit 2: adolescence, asexual reproduction, characteristic, fertilisation, germination, gestation, incubation, lungs, mating, metamorphosis, offspring, ovule, pollen, pollination, sexual reproduction Unit 3: battery , buzzer , cell, circuit , circuit diagram, current, evidence , hazard ,model , relationship , switch , units, voltage Unit 4: characteristic, classification key , classify, cold-blooded, exoskeleton, micro-organism, organism, warm-blooded Unit 5: adaptation, evolution, extinct, gene, inherit, inheritance, natural selection, offspring , parent (biological), selective breeding, variation Unit 6: anomaly, evidence, foetus, gestation period, hormones, life cycle, line graph, old age, period (menstruation), puberty <u>Year B</u> Unit 1: blood, bloodstream, blood vessels, carbon dioxide, circulatory system, drug, evaluate, heart, heart rate, oxygen, pulse, Carbon dioxide Unit 2: celestial bodies, Jupiter, Mars, Mercury, Neptune, orbit, phase, planet, Pluto, Saturn, solar system, spherical, star, Uranus, Venus Unit 3: light ray, ray, units, anomaly, evidence, light ray, line graph, line of best fit, luminous , mean average, non-luminous , ray diagram, relationship, testable, units Unit 4: dissolve, evaporation, filtering, insoluble, mixture, sieving, soluble, solution Unit 5: conductor, electrical conductivity, hazard, insulator, irreversible change, reversible change, rusting, thermal conductivity Unit 6: air resistance, asteroid, celestial bodies, crater, diameter, force, gravity, hardness, material, property, spherical
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