Science

EYFS	Through continuous provision Children in Reception will: CL – learn new vocabulary and use in different contexts. Ask questions to find out more and check what has been said to them. Articulate their ideas in well formed sentences. Describe events in some detail. Use talk to work out problems and organise thinking. Explain how things work and why they might happen. PD – know and talk about general factors that support overall health and wellbeing. KUW – explore the natural world around them. Describe what they see, hear and feel while outside. Recognise environments that are different to the ones they live. Understand the effect of the changing seasons on the natural world around them.			Continuous provision areas and activities that support learning and skill development that relate to science are: Indoors - Nature table, home corner, cooking, investigation table, art table, book corner, topic tables, story time Outdoors – nature area, Forest School, flower bed, school garden, mud kitchen, construction, music centre		
Science almanac – long term inquiry: observation and recording of weather & photographs of school oak tree.	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sumer 2
Enhancements	Our bodies Our senses Introduction to Forest School Harvest Materials	African animals Polar animals Habitats around the world (African plains, Antarctica) Magnets	Space Freezing and melting – solids & liquids	Growing plants Forces	Tadpoles >frogs Minibeasts Habitats – pond, logs, bug hotels Floating & sinking	Caterpillars > butterflies Light & dark Farm animals

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sumer 2
Year 1 Science almanac – long term inquiry: observation and recording of weather and temperature. Begins autumn 1.	Plants Content: The names of plants around us; common wild and garden plants, including deciduous and evergreen trees. The basic structure of common flowering plants including trees. Skills: Ask questions in science lessons and recognise that they can be answered in different ways. Observe closely using simple equipment collect information and record data to help answer a question.	Seasons 1 Content: Changes associated with summer, autumn, winter Weather and day length. Skills: Ask questions and recognise that they can be answered in different ways. Observe carefully using simple equipment. Collect information to help answer a question.	Animals including humans – Human body Content: Name human body parts. Draw and label basic parts of the human body. Associate body parts with the senses. Use senses to compare texture, sound, smells Skills: Ask questions and recognise that they can be answered in different ways. Observe closely using simple equipment. Collect information to help answer a question. Record results in simple	Animals including humans - animals Content: Names of some common animals including fish, amphibians, reptiles, birds and mammals. Name body parts of animals. What animals eat, whether they are carnivores, herbivores or omnivores. Skills: Ask questions and recognise that they can be answered in different ways. Observe closely using simple equipment. Collect information to help answer a question.	Everyday materials (9weeks) Content: What things are made of everyday materials we use and what they are like. How to group materials. Skills: Identify and classify. Conduct simple tests. Answer science questions. Measure and record results.	Seasons 2 Content: Changes associated with spring and summer. Weather and day length. Skills: Ask questions and recognise that they can be answered in different ways. Observe carefully using simple equipment. Collect information to help answer a question.

			ways, table/Venn diagram.	Record results in simple ways, table/Venn diagram.		
Key vocabulary	**Trees** - deciduous, evergreen, ash, birch, beech, rowan, oak, horse chestnut, apple, sycamore, fir, pine, holly **Wild flowering plants** - daisy, dandelion, plantain, red clover, **Garden plants** – crocus, daffodil, bluebells, Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twig	**Seasons**; spring, summer, autumn, winter **Time**; year, months, days **Weather**; hot, warm, mild, cold sunny, cloudy rain, sleet, snow, hail, thunder, lightning, rainbow, wet, damp, dry, windy, breezy, gust **Temperature**; degrees Celsius, thermometer, weather vane, anemometer	transparent, sticky/not sticky **Verbs associated with materials**: crumble, squash, bend, stretch, twist	Birds, fish, amphibians, reptiles, mammals and invertebrates Feathers, scales, gills, fins, hair, land, water, backbone, skeleton Carnivores, herbivores, omnivores, meat, plants	**Types of materials**: wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil **Properties of materials**: hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, **Senses**: touch, see, hear, smell and taste transparent/not	**Seasons**; spring, summer, autumn, winter **Time**; year, months, days **Weather**; hot, warm, mild, cold sunny, cloudy rain, sleet, snow, hail, thunder, lightning, rainbow, wet, damp, dry, windy, breezy, gust **Temperature**; degrees Celsius, thermometer, weather vane, anemometer

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sumer 2
Year 2 Science almanac – long term inquiry: observation and recording of weather, temperature and bulb growth – begins when bulbs are planted in autumn term.	Animals including humans Content: Notice that animals including humans have offspring which grow into adults. Simple life cycles. The basic needs of animals and humans for survival. The importance of exercise, different foods and hygiene Skills: Use observations to suggest answers to questions. Observe using simple equipment. Test an idea. Record data in a tally chart/table.		Uses of everyday materials Content: Identify and compare the suitability of everyday materials for particular uses. How the objects made from some materials can be changed by squashing, bending, twisting and stretching. Skills: Look closely to answer questions. Ask questions and recognise that they can be answered in different ways. Test an idea. Measure to gather data.	All living things & their habitats - survival Content: Things that are living, dead or have never been alive. Basic needs for survival of humans and animals. Simple food chains and sources of food. Skills: Ask questions and recognise that they can be answered in different ways. Observe using simple equipment. Test an idea. Gather and record data in a tally chart to help in answering a question, and	Plants (Two weeks in autumn term to plant bulbs) Content: What plants grow from. How seeds and bulbs grow into mature plants. How plants need water, light, suitable temperature to grow and stay healthy Skills: Observe using simple equipment. Test an idea. Record my findings.	All living things & their habitats - habitats Content: Identify that most thigs live in habitats to which they are suited and describe how different habitats provide for basic needs. Identify and name variety of plants and animals in their habitats including micro habitats. Compare habitats Skills: Ask questions and recognise that they can be answered in different ways. Observe using simple equipment.

		Record my findings to help in answering questions.	record in a bar chart.		Test an idea. Gather and record data in a tally chart to help in answering a question and record in a bar chart.
Key vocabulary	**Life cycle** – grow, change, develop, age, older, Survive – live, die, eat, grow, drink, exercise, feed, excrete, safe **Healthy** – diet, water, mindfulness, clean, wash, medicine Movement, respiration, sensitivity, growth, reproduction, excretion, nutrition	**Materials** – plastic, metal, wood, glass, fabric, rock, **Properties** – strong, weak, bendy, stretchy, flexible, stiff, transparent, opaque, waterproof, permeable, **Measure** – length, depth, strength, **Changes** – twist, stretch, pull, push, scrunch, cut, break, scratch.	Living, alive, dead, survival, needs, diet, protection, safety, warmth, food. **Food chain** – prey, predator, eat, hunt, track, scavenge, forage, find Producer, consumer	**Plants** – seed, bulb, root, stem, shoot, leaf, leaves, flower, petal, **Conditions** – light, soil, water, warmth, sun, rain, Healthy, dying, growing, flowering	**Habitat** – under, behind, inside, below, hidden, warm, damp, moist, dry, cool, hot, near survival, needs, diet, protection, safety, warmth, food, shelter, natural, environment **microhabitat** - Pond, logs, leaf litter,

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Year 3 Science almanac – long term inquiry: How does the amount of light change over the year?	Animals including humans - skeletons Content: Humans and some animals have skeletons and muscles. How skeletons and muscles provide support, protection and movement. Skills: Choose an appropriate approach to answer a question. Record my results. Be able to report on findings from enquiries.	Animals including humans - nutrition Content: Animals including humans cannot make their own food. Animals and humans need the right amount of nutrition. Nutrition comes from what is eaten Skills: Choose an appropriate approach to answer a question. Record my results be able to report on findings from enquiries.	Rocks Content: Comparing and grouping rocks. How fossils are created Skills: Make careful observations. Carry out a fair test. Measure accurately. Record results; presenting information in a branching key.	Forces & magnets Content: Compare how things move on different surfaces. Notice that some forces need contact between objects but magnetic forces do not. Observe how magnets attract and repel each other and some materials. Compare and group materials based on whether they are magnetic. Know magnets have two poles & how they attract and repel each other Skills: Make careful observations. Set up a fair test. Record findings. Say what our results show. Make predictions.	Plants Content: Identify and describe function of different parts of flowering plants Explore the requirements of plants for life and growth and variations between plants. How plants transport water. Explore the part that flowers play in the life cycle of flowering plants including pollination, seed formation and dispersal. Skills: Plan an enquiry to observe and measure accurately. Record my results say what I have found out.	Light Content: Recognise we need light to see things, dark is the absence of light. How light can be reflected. The dangers that bright light can cause. How shadows are formed. Why shadows vary in size Skills: Plan a fair test to observe and measure accurately. Record my results as a bar chart and use my results to make predictions.

Key vocabulary	skeleton, muscle, tendon, support, protection, movement, bone, femur, spine, shoulder blade, skull,	Animals, humans, nutrition, food, diet, consumer, producer, diet, carbohydrates, proteins, vitamins, sugars and fats, dairy. Herbivore, carnivore, vegetarian, pescatarian	Compare, group together, different, kinds appearance, physical properties, hardness, permeability, fossils, rock, soil, organic matter, metamorphic, sedimentary, igneous	forces - attract, repel, objects, magnetic force, Surfaces contact magnets - poles Materials - metal, wood, plastic, glass, fabric	Function, plants, roots, stem/trunk, leaves, flowers, variation grow, life, growth air, light, water, nutrients, soil, room to grow, transported, life cycle, pollination, seed formation, dispersal	Light, see, dark, travels, straight, lines, reflect, surfaces, sun, sources, eyes, shadow, object, distance, torch, mirror, reflective, protect,

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Year 4 Science almanac – long term inquiry: How do levels of sound change throughout the year?	Animals including humans Content: Describe simple functions of the basic parts of the human digestive system. Identify different types of teeth in humans and their functions. Construct & interpret food chains Skills: Select and plan an appropriate approach to answer a question. Use evidence to form a conclusion. Report what I have found out.	Sound Content: Identify how sounds are made. Recognise vibrations travel through a medium to the ear. Find patterns between pitch and the object that produced it. Find patterns between volume and the strength of vibrations. Recognise sounds get fainter as the distance from the source increases Skills: To use a scientific enquiry to answer a question. Set up a simple fair test. Make systematic and careful measurements with a data logger. Report on findings from an enquiry. Identify differences, similarities or changes related to simple scientific ideas.	Living things and their habitats - classification Content: How living things can be grouped together in a variety of ways. Explore and use classification keys to group, identify and name living things in the local environment (Delivery through Forest School) Skills: Gather, record, classify and present data in a variety of ways, including constructing keys, to help in answering questions. Report on findings from enquiries both oral and written explanations.	States of matter Content: Compare and group materials according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled. Measure and research temperatures in Celsius. Identity evaporation and condensation in the water cycle. Skills: Make observations over time to answer a question. Conduct a fair test. Use results to draw simple conclusions. Record findings using simple scientific language, drawings, labelled diagrams. Reporting on findings from enquiries. Use straightforward scientific evidence to answer questions or to support findings. Measure accurately	Electricity Content: Identify common appliances that run on electricity. Construct simple circuits And name basic parts. Identify whether circuits are complete. Recognise a switch opens and closes and circuit Recognise common insulators & conductors. Skills: Record results and use results to make predictions.	Living things and their habitats - environments Content: Recognise environments can change Dangers posed to living things by changes Skills: Gather, record, classify and present data in a variety of ways, including constructing keys, to help in answering questions. Report on findings from enquiries including both oral and written explanations.

Key vocabulary	digestive system - humans, stomach, mouth, intestines, bowel, teeth – canine, incisors, molars, premolars, tongue, filling, dentine, enamel, gums, decay, herbivores, carnivores, food chain, producers, predator, prey	Ear, sound, vibration, waves, pitch, volume, distance, frequency	Living things plants, animals, micro-organisms, classification system, mammals, insects, fish, vertebrates, invertebrates, reptiles, amphibians, birds, Flowering, grass, moss, fern,	States of matter, solid, liquid, gas, oxygen, hydrogen, helium, carbon dioxide, methane, water, milk, juice, petrol, oil, wood, rocks, metal, plastic, glass, wool, leather, melting, condensation, evaporation, solidifying, freezing, water cycle, water vapour, steam, heating, cooling	Electricity, appliances, battery, bulb, bulb holder, buzzer, crocodile clip, leads, wires, switch, brighter, duller, slow, fast, quiet, loud, conductor, insulator, light, sound, movement, heat, switches, open, close	environment, changes, impact, dangers, human, positive, negative, nature reserve, ecology, population, pollution, deforestation,

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sumer 2
Year 5 Science almanac – long term inquiry: Focus plants in the school garden (photographs, measurements, descriptions)	Properties& changes of materials Reversible change Irreversible change Content: Compare & group everyday materials on the basis of their properties. Know some materials dissolve in liquid to form solution & that it can be recovered. Use knowledge of solids, liquids & gases to decide how mixtures might be separated. Given reasons for the use of everyday materials Demonstrate dissolving & mixing as reversible changes Explain some changes are irreversible. Skills: Plan a fair test. Make accurate measurements using digital equipment. Record results and make predictions. Evaluate results. Plan a scientific enquiry that will answer a question. Recognise control variables and use results to draw conclusions.	Forces Content: Explain that unsupported objects fall to earth due to gravity. Identify the effects of air resistance, water resistance, and friction. Recognise how mechanisms including levers, pulleys & gears allow small force to have a greater effect Skills: Measure accurately. Plan a fair test. Identify if results are reliable. Make and use predictions.	Earth & space Content: Describe the movement of the earth & planets relative to the sun. Describe the movement of the moon relative to the earth. Describe the sun, earth and moon as spherical bodies. Use the idea of earth rotation to explain day and night and the apparent movement of the sun across the sky. Skills: Plan a scientific enquiry to answer a question. Report a presentation of an explanation.	All living things Content: Describe the differences in the life cycles of a mammal, amphibian, and insect and bird Describe the life process of reproduction in some plants and animals Skills: Plan an enquiry. Recognise which secondary sources will be most useful. Record results using scientific diagrams and labels and draw conclusions explaining findings, giving reasons, based on evidence.	Animals including humans Content: Describe the changes as humans develop to old age. Changes during puberty. Skills: Use a scatter graph to record my results Say what I have found out Use evidence to support findings .

Key Vocabulary	Materials, properties, hardness, solubility, transparency, conductivity, electrical, thermal, magnetic, dissolve, liquid, solution, recover, substance, solids, liquids, gases, mixture, separated, evaporate, condensation	Gravity, earth, force, resistance, friction, fall, motion, Newton, opposite, direction, mechanism, movement, pulley, gear, lever, effort, rotation,	Movement, Earth, planet, Neptune, Pluto, Mars, Venus, Saturn, Jupiter, Uranus, relative, Sun, solar system, rotation, day, night, Moon, spherical bodies, celestial body, orbit, geocentric, heliocentric	life cycle, mammal, amphibian, insect, bird, life process, reproduction, plants, anther, pollination, stigma	Human, baby, infant, child, teenager, elderly, puberty, changes, grow, mammal,

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Sumer 2
Year 6 Science almanac – long term inquiry: Does our fitness improve over the year?	Living things & their habitats Content: Describe how living things are classified into broad groups according to observable characteristics, similarities & differences, including micro-organisms, plants & animals. Give reasons for classifications. Skills: To decide on the best way to present evidence. To interpret observations and use them to develop explanations.	Animals including humans Content: Identify & name parts of the human circulatory system. Describe function of heart, blood vessels & blood. Recognise the impact of diet, exercise, drugs & lifestyle on the way the human body functions. Describe how nutrients and water are transported within animals including humans. Skills: Plan a pattern seeking enquiry. Record results Report findings	Light Content: Recognise light travels in straight lines. Explain that objects are seen because they give out or reflect light to the eye. Explain why shadows have the same shape as the objects that cast them. Skills: Use evidence to support ideas. Use results to make further predictions. Plan a fair test to test predictions and evaluate results.	Electricity Content: How the brightness of a lamp or the volume of a buzzer may be affected by the number and voltage of cells used in a circuit. 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 Use symbols to represent a simple circuit in a diagram. Skills: Plan investigations. Conduct experiments. Record evidence and report findings. Make predictions and draw conclusions	SATS revision	Evolution & inheritance Content: Recognise living things have changed over time. Know fossils provide information about living things that inhabited the earth millions of years ago. Recognise that living things produce offspring of the same kind but with variation. Identify how animals are adapted to their environment and how adaptions lead to evolution. Skills: Understand how evidence can be used to support an idea. Plan how to answer a question. Record results and measure accurately.
Key Vocab	vertebrate, invertebrate, insect, mammal, bird, amphibian, reptile, fish fungi, mushroom, toadstool fermentation, microbe, bacteria, species, genus, organisms, bacteria	Circulatory system - Internal organs, , Heart, Blood vessels, Artery, Lungs, Vein, Alveoli, Capillary Health – damage, substances, harmful, diet, lifestyle, exercise,	Light, source, distance, intensity, direction, straight, opaque, shadow, translucent, transparent, absence of light, sun, position,	Electricity, appliances, battery, bulb, bulb holder, buzzer, component, crocodile clip, leads, wires, switch, brighter, duller, conductor, insulator, light, sound, movement, heat, switches, open, close, voltage, resistance		living things, change, fossils, inhabited, Earth, produce, offspring, variation, identical, adapt, evolution, evolve, environment,