



Science at West Cornforth Primary School

“Equipped with his five senses, man explores the universe around him and calls the adventure science.” Edwin Powell Hubble.

Year 1		
Topic	Key Vocabulary	Key Knowledge /Skills
Seasonal change Throughout the year	Autumn, leaves, change, hedgehog, hibernates, hibernation, weather, diary, report, temperature, thermometer, symbol, clothes, seasons, weather, winter, leaves, change, migrate, migration, Seasons, autumn, spring, summer, winter, weather, changes, observe, diary, similarities, differences	Observe changes across the seasons. Observe and describe weather associated with the seasons and how day length varies. Enquiry Types – Observing changes over time (Season and weather diary)
Autumn Animals inc. Humans	Senses, body parts, sight, see, look, eyes, smell, nose, touch, skin, sound, listen, hear, taste, tongue, bones, skull, ribs Animal names and baby names, classification, fish, reptile, mammal, amphibian, bird, features, purposes, differences, body parts, carnivores, omnivores, herbivores, minibeast, tally, tally chart, vertebrate Invertebrate	Identify and name common animals. Carnivores, herbivores and omnivores. Describe and compare the structure of common animals. Identify basic human body parts and say which are associated with each sense. Enquiry Types – Comparative Grouping and Classifying (Identifying using the senses) Grouping and Classifying Research using Secondary Sources
Spring Everyday materials	Material, natural, man-made, magnetic, non-magnetic, object, property, hard, smooth, shiny, soft, waterproof, transparent, opaque, fair test, Venn diagram, sort	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials. Describe simple physical properties of everyday materials. Compare and group a variety of everyday materials based on simple physical properties. Enquiry Types – Grouping and Classifying (Magnetic, non-magnetic, waterproof, absorbent), Fair/Comparative Test, Research using secondary sources
Summer Plants	Plant, bean, grow, diary, observe, predict, experiment, conditions, seeds, stem, root, leaves, flower, function, part,	Identify and name common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of flowering plants and trees. Enquiry Types – Pattern seeking, Grouping and Classifying (Grouping evergreen and deciduous trees), Fair/Comparative test



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Year 2		
Topic	Key Vocabulary	Key Knowledge /Skills
Autumn 1 Uses of everyday materials	Grouping, classifying, comparison, properties, transparent, flexible, rigid, strong, absorbent, waterproof, suitability	Identify and compare the suitability of a variety of everyday materials for particular uses. - Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Autumn 2 Uses of everyday materials (Covid-Response)		Distinguish between an object and the material from which it is made (moved from Year 1, Covid-19 Response). - Identify and name a variety of everyday materials (moved from Year 1, Covid-19 Response). - Describe simple physical properties of everyday materials (moved from Year 1, Covid-19 Response). - Compare and group a variety of everyday materials based on simple physical properties (moved from Year 1, Covid-19 Response). Enquiry Types – Observing Over Times, Grouping and Classifying ,Fair test
Spring Living things and their habitats	Habitat, suited, compare, explore, living, dead, micro-habitats, food chains, sources of food, producer, predator, research, grouping, classifying	Explore differences between living, dead and have never been alive. - Identify how habitats provide basic needs for their plants and animals, and how they depend on each other. - Identify and name a variety of plants and animals in their habitats, inc. microhabitats. - Describe how animals obtain food through simple food chains Enquiry Types – Grouping and Classifying, Research using secondary sources
Summer 1 Plants	Roots, leaves, stem, petal, flower, bud, seed, seedling, observe, grow, measure, height, water, light, temperature	Observe and describe seed and bulb growth. - Identify and describe plant growth requirements (water, light, temperature). Enquiry Types – Notice Patterns , Grouping and Classifying Fair/ Comparative Test
Summer 2 Animals inc. Humans	Offspring, babies, toddlers, child, teenager, adult, elderly, parent, chronological, healthy, unhealthy, muscles, diet, nutrition, exercise, protein, carbohydrates, fats, dairy, vitamins, skeleton, heart rate, pulse, observe, grouping, classifying	- Notice how animals, including humans, have offspring which grow into adults. - Identify and describe the basic needs of animals, including humans, for survival (water, food, air). - Describe the importance of exercise, eating healthy amounts and hygiene. Enquiry Types – Observing Over Time (Grouping and Classifying Fair Tests



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Year 3		
Topic	Key Vocabulary	Key Knowledge /Skills
Autumn 1 Rocks	Appearance, physical, properties, hard/ soft, shiny/dull, rough/smooth, absorbent/not absorbent, porous, fossils, sedimentary, igneous	Compare and group rocks and soils based on appearance and basic physical properties. - Describe in simple terms how fossils are formed. - Recognise that soils are made from rocks and organic matter. Enquiry Types – Grouping and Classifying (Sorting rock types), Research (Mary Anning)
Autumn 2 Light	Dark, reflect, surface, natural, shadow, translucent, opaque, transparent, blocked, artificial, research, enquiry, fair test	Recognise the importance of light in order to see things and that dark is the absence of light. - Notice that light is reflected from surfaces. - Recognise that light from the sun can be dangerous and there are ways to protect eyes. - Recognise that shadows are formed when the light from a source is blocked by an opaque object. - Find patterns in the way that the size of shadows changes. Enquiry Types Observing Changes Over Time, Grouping and Classifying, Comparative Test Research & Secondary Sources (Sun protection)
Spring Animals inc. Humans	Nutrition, vitamin, mineral, fat, protein, carbohydrate, fibre, water skeleton – support and protection, movement, skull, ribs, joints, muscles – movement, pull, contract, relax, diet, vertebrate, invertebrate Record, table, accurate	Identify that animals, including humans, need the right nutrition and get this from what they eat. - Identify that humans and animals have skeletons and muscles for support, protection and movement Enquiry Types – Observing over time, notice patterns, Grouping and Classifying, Research using Secondary Sources.
Summer 1 Forces and Magnets	Force, push, pull, open, surface, magnet, magnetic, attract, repel, magnetic poles, North, South, compare Labelled diagram, observe	Compare how things move on different surfaces. - Notice that some forces need contact between two objects, but magnetic forces can act at a distance. - Observe how magnets attract some materials and not others. - Compare and group materials based on whether they are magnetic. - Describe magnets as having two poles. - Predict whether two magnets will attract or repel each other, depending on which poles are facing. Enquiry Types – Notice Patterns-Grouping and Classifying (Magnetic and non-magnetic materials), Comparative test
Summer 2 Plants	Fruit, vegetables, bulb, seed Pollination, seed formation, seed dispersal, germination, transport Conclusion, evidence, prediction	Identify and describe the functions of different plant parts. - Explore the requirements for plant life and growth. - Investigate the way in which water is transported within plants. - Explore the role of flowers in the life cycle of plants, including pollination, seed formation and seed dispersal. Enquiry Types - Observing Changes Over Time- Fair Testing



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Year 4		
Topic	Key Vocabulary	Key Knowledge /Skills
Autumn 1 Animals inc. Humans	Digestion, parts of system – mouth, saliva, oesophagus, stomach, enzymes, small intestine, large intestine, colon Teeth – incisor, canine, molars, floss, brush Food chain – producers, prey, predators, carnivore, herbivore, omnivore	Describe the simple parts and functions of the digestive system in humans. Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains and webs, identifying producers, predators and prey Enquiry type: Observation over time Which drinks are bad for your teeth? Pupils might observe egg shells in different liquids for a few days. Research:Types of teeth. Why is drinking salt water bad for humans?
Autumn 2 States of Matter	Solid, solidify, melt, freeze, evaporate, condense, liquid, gas, container, changing state, states of matter, heating, cooling, degrees celcius, themometer, water cycle, melting, temperature, water vapour Record, table, accurate	Compare and group materials according to whether they are solids, liquids or gasses. Observe that some materials change state when they are heated/cooled. Identify the part played by evaporation and condensation in the water cycle. Enquiry types Observation over time How do some materials change when they are heated? Grouping and classifying Can you sort these materials? Explain how you have grouped them.
Spring 1 Electricity	Appliance, electricity, electrical circuit, cell, wire, bulb, buzzer, insulator, conductor, switch.	Identify common appliances. Construct a simple series electrical circuit, identifying its basic parts. Identify whether a lamp will light in a simple series circuit, based on whether it is part of a complete loop. Recognise that a switch opens and closes a circuit. Recognise common conductors and insulators. Enquiry Types – Grouping and Classifying - Comparative Test
Spring 2 Sound	Vibrate/ion/ting, medium, volume, pitch, faint, string, percussion, woodwind, brass, insulate	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between pitch and volume and the features of the object which produced it. Recognise that sounds get fainter as distance increases Enquiry types Grouping and classifying How are sounds made by musical instruments? Pattern seeking How do musical instruments produce low notes? Is there a pattern?
Summer Living things and their habitats	Environment, flowering, non-flowering, fish, amphibian, reptile, bird, mammal, insect, classify, classification key, local, human impact Record, accurate	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to group, identify and name living things in the local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things. Enquiry types: Grouping and classifying vertebrate and invertebrate groups could identify and classify animals as fish, amphibians reptiles, birds, mammals or snails, slugs, worms, spiders and insects.



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Year 5		
Topic	Key Vocabulary	Key Knowledge /Skills
Autumn 1 Living things and their habitats	Environment, flowering, non-flowering, fish, amphibian, reptile, bird, mammal, insect, classify, classification key, local, human impact Record, accurate	Describe the life cycles of different animal groups. - Describe reproduction in plants and animals. Enquiry type: Grouping and classifying How can we sort animals into groups?
Autumn 2 Animals inc. Humans	Mammal, amphibian, insect, reproduction, asexual, sexual, micro-organisms, classifying, characteristics, foetus, adolescence, fertilisation, gestation, embryo.	Describe the changes which occur as humans develop to old age. Enquiry Type: Secondary Research How does skin change as you grow older? Finding patterns Can children with the longest legs run fastest? Record and present data using bar and line graphs relating to the life cycles of animals (e.g. looking for patterns in the life span of animals) Present findings from research into life cycles and living things.
Spring 1 Forces and motion	Gravity, air resistance, water resistance, friction, effect, accelerate, decelerate, break.	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. - Identify the effects of air resistance, water resistance and friction that act between moving surfaces. Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
Spring 2 Gears, levers and pulleys.	Mechanism, pulley, gear, spring	Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs. Recognise that some mechanisms, including levers and pulleys, allow a smaller force to have a greater effect. They record their results in a table and then transfer their results to a line graph showing two lines. They compare both sets of results and explain the advantage that a pulley provides.
Summer 1 Properties and changes of materials	Solubility, transparency, thermal, conductor, conductivity, dissolve/ing, solution, separate, evaporate/ion, reversible, irreversible, filtering, sieving, rusting, magnetism, chemists, insulation, chemical.	Compare and group materials on the basis of their properties. - Know that some materials will dissolve to form a solution and how to recover the substance. - Decide how mixtures might be separated. - Give reasons, based on fair testing, for the particular use of materials. - Demonstrate that dissolving, mixing and changes of state are reversible changes. - Explain that some changes (irreversible) result in the formation of new materials. Enquiry type Observing and Measuring: Take accurate measurements. Record data relating to everyday materials and their properties (hardness, solubility, transparency, conductivity, response to magnets) using scientific diagrams, labels and tables. Investigate solubility, reviewing measuring skills, and use their results to make predictions and set up a further comparative test
Summer 2 Earth and beyond	Solar system, rotate, orbit, axis, spherical, heliocentric, geocentric, tilt, hemisphere.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. - Describe the movement of the Moon relative to the Earth. - Describe the Sun, Earth and Moon as approximately spherical bodies. - Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky. Enquiry type: Secondary Research question Can you name all the planets in the Solar System? Report findings from their research in this topic in a written form (explanation text / fact file)



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Year 6		
Topic	Key Vocabulary	Key Knowledge /Skills
Autumn 1 Evolution and inheritance	Adaptation, evolution, inherited/ance, adaptive traits, natural selection, DNA, genes, variation, offspring, habitat, fossilisation, mutations	Recognise that living things have changed over time and that 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 normally offspring are not identical to their parents. Identify how animals and plants are adapted to suit their environment and that adaptation may lead to evolution. Present information as an oral presentation. Enquiry Types – Observing Changes Over Time, Grouping and Classifying Research Charles Darwin
Autumn 2 Living things and their habitats	Environment, flowering, non-flowering, fish, amphibian, reptile, bird, mammal, insect, classify, classification key, local, human impact Record, accurate	Describe how living things are classified into broad group according to common characteristics, including microorganisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics. Enquiry type: Grouping and classifying How can we sort animals into groups?
Spring 1 Animals including humans	Organs, heart, lungs, liver, kidney, brain, skeletal, skeleton, muscular, digestion, circulatory system, blood vessel, nutrients, veins, artery, chamber, ventricles	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Describe the ways in which nutrients and water are transported within animals, including humans. Plan an enquiry relating to the impact of exercise on the way their bodies function. Explain the degree of trust in the results from their exercise enquiry Write a report describing how nutrients and water are transported in animals including humans
Spring 2 Electricity	Voltage, switches, series circuit, circuit diagram Revisit: Appliance, electricity, electrical circuit, cell, wire, bulb, buzzer, insulator, conductor, switch Variables, Repeat reading, precision, fair test	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the 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 recognised symbols when representing a simple circuit in a diagram. Enquiry Types – Comparative Test (Does ____ affect the brightness of a bulb?) , Research and Secondary Sources (Thomas Edison and Joseph Swan)
Summer Light	Reflect, Reflection, Source, periscope, filters.	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. Use the idea that light travels in straight lines to explain why shadows have the same shape as the object which cast them. Enquiry Types – Grouping and Classifying Comparative Test How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface?