



# BERKELEY PRIMARY SCHOOL

## Science Medium Term Plan



|     | AUTUMN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SPRING                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SUMMER                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                        |
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| Nur | <b>Animals, including humans</b><br>-develop vocabulary around the basic features of the body and self<br>-attempt to use subject specific vocabulary when talking about selves.<br><i>Key Vocab:</i><br><i>head, eyes, nose, mouth, ears, hands, fingers, feet, toes, arm, leg, animal, human</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Materials</b><br>-explores different materials<br><i>Key Vocab:</i><br><i>material, heavy, light, soft, hard</i><br><br><b>Seasonal Changes</b><br>-use all senses to explore natural materials linked to autumn<br>-explore collections of natural materials linked to autumn with similar or different properties<br>-develops vocabulary relating to natural materials<br>-makes a collection of natural materials<br>-investigates and talks about different types of leaves<br>-talks about how the leaves are changing<br><i>Key Vocab:</i><br><i>summer, day, spring, dark, autumn, light, winter, night, season, moon, sun</i> | <b>Seasonal Changes</b><br>-shows curiosity in the change of water to ice<br>-talks about the difference between water and ice<br>-talks about the changes they can see happening with water and ice e.g. freezing and melting<br><i>Key Vocab:</i><br><i>water, ice, melt, freeze, frozen, difference, change</i> | <b>Planting and life cycles</b><br>-is able to plant a seed<br>-shows interest in caring for growing plants<br>-can talk about what they see as seeds/plants begin to develop and grow<br>-is beginning to show respect for growing plants<br>-can talk about what has happened to the seed/bulb - beginning to show understanding that a seed develops into a plant<br>-can talk about what they see happening to plants if they are not watered e.g. changes, petals fall off, they might die<br><i>Key Vocab:</i><br><i>tree, leaf, flower, stem, seed, growing, growth, plant, bulb, petal, develop, decay, die</i> | <b>Life Cycles</b><br>-shows curiosity in the life cycle of a butterfly<br>-begins to understand the lifecycle of a butterfly - egg, caterpillar, chrysalis, butterfly<br>-beginning to show understanding of the need to care for creatures<br>-makes collections of natural materials<br><i>Key Vocab:</i><br><i>life cycle, egg, caterpillar, chrysalis, butterfly</i> | <b>Forces</b><br>-explores floating and sinking<br>-explores how different materials sink and float<br>-explores moving forces<br><i>Key Vocab:</i><br><i>float, sink, waterproof, force, movement</i> |
|     | <b>Planting/Life Cycles</b><br>-shows curiosity in the planting process<br>-begins to understand that a bulb will grow over time and develop into a flower                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Planting/Life Cycles</b><br>-cares for flowers/plants<br>-talks about the growth they see over time<br>-talks about what they can see happening to plants over time – decay                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
|     | <b>Seasonal Changes</b><br>-shows curiosity in the changing seasons<br>-talks about what they can see around them<br>-makes collections of natural materials to investigate and talks about them                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
|     | <b>Development Matters 3&amp;4 year olds will be learning to: (Understanding the World)</b><br>-use all their senses in hands on exploration of natural materials.<br>-explore collections of materials with similar and/or different properties.<br>-talk about what they see, using a wide vocabulary.<br>-explore and talk about different forces they can feel.<br>-talk about the differences between materials and changes they notice<br>-plant seeds and care for growing plants.<br>-understand the key features of the life cycle of a plant and an animal.<br>-begin to understand the need to respect and care for the natural environment and all living things.<br><i>Key Vocab:</i><br><i>sense, sight (see), hear, touch (feel), smell, taste</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                        |
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| Rec | <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- identify and name basic features of the body (head, shoulders, knees, toes, arms, legs, face)</li> <li>- identify and name features of faces (eyes, nose, lips, mouth, cheeks, chin, eyebrows, eyelashes)</li> <li>- identify basic similarities and differences between self and others</li> <li>- hair colour, eye colour, height, skin colour</li> <li>- begin to understand that humans grow and change (eg baby to toddler to child)</li> <li>- begin to understand that humans follow a life cycle (baby, child, adult)</li> </ul> <p><i>Key Vocab:</i><br/>face, hair, leg, human, knee, animal, arm, fish, elbow, birds, back, skin, head, toes, ear, hands, eye, fingers, mouth, nose</p> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- know that some materials commonly used during birthday celebrations change state: chocolate melts; jelly cubes become liquid and then solidify; butter melts</li> </ul> <p><i>Key Vocab:</i> change state, melt, liquid, solid</p>     | <p><b>Seasonal changes</b></p> <ul style="list-style-type: none"> <li>- notice autumn changes / weather in the world around them and in other environments (school / woods / pond)</li> <li>- know that leaves fall in the autumn</li> <li>- name colours of autumn leaves, red, brown, yellow, orange</li> <li>- look carefully to find that they are different shapes and sizes and colour</li> <li>- sort autumn leaves by colour, shape or size</li> <li>- know that some autumn finds (conkers, acorns, helicopters / sycamore seeds are seeds and are part of a tree life cycle</li> <li>- know that there are four seasons - spring, summer, autumn and winter</li> <li>- know that we see different weather and need different clothing in different seasons</li> <li>- know that once leaves have fallen from trees, they change to become dry / crispy</li> </ul> <p><i>Key Vocab:</i><br/>daytime, wind, rain, sleet, hail, fog, cold, hot, conkers, acorns, sycamore seeds, falling leaves, weather</p> | <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- know that birds are a type of animal</li> <li>- know that birds have some things in common (feathers, legs, wings, beaks, lay eggs)</li> <li>- know that there are different types of birds and that there are differences between them (e.g. different names, different coloured feathers, different sizes)</li> <li>- know that birds are different to humans (e.g. have wings), but also have some things in common (e.g. have eyes and legs)</li> <li>- know that birds follow a life cycle (egg, chick, bird)</li> </ul> <p><i>Key Vocab:</i><br/>bird, animal, feathers, wing, beak, chick</p> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- know that snow / ice can change state / melt and become water</li> <li>- knows that water can change state / be frozen and becomes ice</li> </ul> <p><i>Key Vocab:</i><br/>change state, liquid, solid</p> | <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>- know that there are different types of plants (different names, size, shape, colour of flower)</li> <li>- know that they have some things in common but that there are differences between them</li> <li>- Identify and name leaf, stem, root, bud, flower</li> <li>- observe and comment upon how plants grow and change from seed</li> <li>- know that plants follow a life cycle (seed, seedling, plant, fruit / seeds)</li> <li>- know that if plants are left un-watered, they change to become dry / crispy and might die</li> </ul> <p><i>Key Vocab:</i><br/>trunk, fruit, branch, roots, leaves, bulb, bud, grow, fruit, vegetable, oxygen, sunshine, soil</p> | <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"> <li>- know that there are different types of small garden creatures (types of invertebrates) and name their parts</li> <li>- know different creatures live in different environments</li> <li>- know that they have some things in common and that there are differences between them</li> <li>- can sort types of creatures by basic features (e.g. number of legs, where they live)</li> <li>- know that garden creatures follow a life cycle</li> <li>- begin to consider caring for the world, specifically problems that litter can cause to animals and its impact on selves in terms of the local environment being spoilt</li> </ul> <p><i>Key Vocab:</i><br/>vertebrate, invertebrate, environment, habitat, litter, spoil</p> | <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- know that there are different types of material (paper, fabric, brick, straw, plastic, metal)</li> <li>- can sort objects by type of material</li> <li>- begin to conduct simple experiments and sort different materials by the results (magnetism, floating and sinking, waterproof)</li> </ul> <p><i>Key Vocab:</i><br/>paper, fabric, brick, straw, plastic, metal, magnetic, absorbent, smooth, rough, shiny, dull, stiff, bendy</p> |
|     | <p><b>Seasonal changes</b></p> <ul style="list-style-type: none"> <li>- notice winter and spring / summer changes / weather</li> <li>- understand the effect of weather on creatures (e.g. that birds find it hard to find food and that some hibernate)</li> <li>- know that plants start to grow in the spring</li> <li>- know that we see different weather and need different clothing in different seasons.</li> <li>- know that there are four seasons - spring, summer, autumn and winter</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|     | <p><b>Early Learning Goal 2021 (Understanding the World - The Natural World)</b></p> <p>Children at the expected level of development will:</p> <ul style="list-style-type: none"> <li>- Explore the natural world around them, making observations and drawing pictures of animals and plants;</li> <li>- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;</li> <li>- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</li> </ul> <p><b>Development Matters - Reception will be learning to: (Understanding the World)</b></p> <ul style="list-style-type: none"> <li>- Explore the natural world around them.</li> <li>- Describe what they see, hear and feel whilst outside.</li> <li>- Recognise some environments that are different from the one in which they live.</li> <li>- Understand the effect of changing seasons on the natural world around them.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



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| Y1 | <b>Animals, including humans</b><br>- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals<br>- identify and name a variety of common animals that are carnivores, herbivores and omnivores<br>- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)<br><i>Key Vocab: amphibians, fish, mammal, reptile, pet, fur</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Animals, including humans</b><br>- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense<br><i>Key Vocab: neck, shoulder, hand, elbow, foot, teeth, back</i><br><br><b>Everyday materials</b><br>- distinguish between an object and the material from which it is made<br>- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock<br>(- explain why a material might be useful for a specific job)<br>- describe the simple physical properties of a variety of everyday materials<br>(- describe materials using their senses)<br>- compare and group together a variety of everyday materials on the basis of their simple physical properties<br>(- explain how solid shapes can be changed by squashing, bending, twisting and stretching)<br><i>Key Vocab: breaks/tears, opaque, rock, man-made, squash, twist</i> |        |
|    | <b>Plants</b><br>- identify and names a variety of common wild and garden plants, including deciduous and evergreen trees<br>- identify and describe a basic structure of a variety of common flowering plants, including trees<br>(- name the petals, stem, leaf, bulb, flower, seed, stem and root of a plant)<br>(- name trunk, branches and root of a tree)<br>(- describe the parts of a plant including roots, stem, leaves and flowers)<br><i>Key Vocab: bark, petals, wild, garden, deciduous, evergreen, flowers (blossom), types of tree (eg. willow, birch, chestnut)</i><br><br><b>Seasonal changes</b><br>- observe changes across the four seasons<br>(- name the four seasons in order)<br>- observe and describe weather associated with the seasons and how day length varies<br><br><i>Key Vocab: weather, sunny, overcast, snow, temperature, light, dark, sunset, sunrise, length of day</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |
|    | <b>Working scientifically</b><br>- asking simple questions and recognising that they can be answered in different ways<br>- observing closely, using simple equipment<br>- performing simple tests<br>- identifying and classifying<br>- using their observations and ideas to suggest answers to questions<br>- gathering and recording data to help in answering questions<br>(- record findings using standard units)<br><i>Key Vocab: What...? How...? Why...? similar, different, best, worst, change, plan, look, look closely, biggest, smallest, compare, sort, group, questions, answers, equipment, gather, measure, record, results, test, explore, observe, compare, describe, similar/ities, different/ces, beaker, pipette, syringe</i>                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |



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| Y2 | <p><b>Uses of everyday materials</b></p> <ul style="list-style-type: none"><li>- identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li><li>- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.<br/>(- find out about people who developed useful new materials (John Dunlop, Charles Macintosh, John McAdam))</li></ul> <p><i>Key Vocab:</i><br/>transparent, translucent, reflective, non-reflective, flexible, elastic, rigid, rubber, cardboard, brick</p>                                                                                                                                                                                           | <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"><li>- notice that animals, including humans, have offspring which grow into adults</li><li>- find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li><li>- describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.<br/>(- describe the life cycle of some living things (e.g. egg, chick, chicken))</li></ul> <p><i>Key Vocab:</i><br/>adult, develop, offspring, reproduce, young, live young, baby, toddler, child, teenager, adult, dehydrate, diet, disease, energy, exercise, germs, heart rate, hygiene, nutrition, pulse, carbohydrates, protein, fat, fruit and vegetables, survival, air</p> | <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"><li>- explore and compare the differences between things that are living, dead, and things that have never been alive</li><li>- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li><li>- identify and name a variety of plants and animals in their habitats, including micro-habitats</li><li>- describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</li></ul> <p><i>Key Vocab:</i><br/>living, dead, micro-habitats, food chain, consumer, producer, organism, plant, animal, shelter, survival, seashore, woodland, ocean, rainforest, desert, pond, conditions, damp, shade, predator, prey, move, air</p> <p><b>Plants</b></p> <ul style="list-style-type: none"><li>- observe and describe how seeds and bulbs grow into mature plants</li><li>- find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li></ul> <p><i>Key Vocab:</i><br/>light, shade, cool, warmth, grow, healthy, germinate, decompose</p> |
|    | <p><b>Working scientifically</b></p> <ul style="list-style-type: none"><li>- asking simple questions and recognising that they can be answered in different ways</li><li>- observing closely, using simple equipment</li><li>- performing simple tests</li><li>- identifying and classifying</li><li>- using their observations and ideas to suggest answers to questions</li><li>- gathering and recording data to help in answering questions<br/>(- explain why it might not be fair to compare two things)<br/>(- say whether things happened as they expected)<br/>(- suggest how to find things out)</li></ul> <p><i>Key Vocab:</i><br/>slowly, quickly, describe, name, identify, label, bigger, smaller, pattern, notice, cycle, predict, observe changes over time, notice patterns, identify, classify, data, secondary sources, egg timers</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



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| Y3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Animals, including humans</b> <ul style="list-style-type: none"><li>- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat</li><li>- identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li></ul> <i>Key Vocab: nutrients, vitamins, minerals, fibre, endoskeleton, exoskeleton, skeleton, bones, joints, muscles, contract, relax, movement, support, protect, skull, ribs, spine</i>                                                                                                                                                                                                                                                                      | <b>Rocks</b> <ul style="list-style-type: none"><li>- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li><li>- describe in simple terms how fossils are formed when things that have lived are trapped within rock</li><li>- recognise that soils are made from rocks and organic matter.</li></ul> <i>Key Vocab: rocks, stone, boulder, grain, hard, soft, igneous, metamorphic, sedimentary, anthropic, permeable, impermeable, chemical fossil, Mary Anning, extinct, organic matter, soil, top soil, sub soil, base rock, sandstone, granite, marble, pumice, chalk, absorbent/porous, durable, types of soil (eg. peaty, sandy)</i>                                                                                                                                        | <b>Light</b> <ul style="list-style-type: none"><li>- recognise that they need light in order to see things and that dark is the absence of light</li><li>notice that light is reflected from surfaces</li><li>- recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li><li>- recognise that shadows are formed when the light from a light source is blocked by an opaque object</li><li>- find patterns in the way that the size of shadows change.</li></ul> <i>Key Vocab: light, light source, dark, darkness, reflect, ray, mirror, bounce, visible, beam, sun, sunlight (dangerous), glare, travel, straight, opaque, shadow, block, direction, transparent, translucent, absence of light, reflect, reflection</i> |
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| <b>Working scientifically</b> <ul style="list-style-type: none"><li>- asking relevant questions and using different types of scientific enquiries to answer them</li><li>- setting up simple practical enquiries, comparative and fair tests</li><li>- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li><li>- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li><li>- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li><li>- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li><li>- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li><li>- identifying differences, similarities or changes related to simple scientific ideas and processes</li><li>- using straightforward scientific evidence to answer questions or to support their findings.</li></ul> <i>Key Vocab: gradually, recognise, investigate, units, table, fair, evidence, research, length, observations, prediction, scientific enquiry changing over time, comparative tests, fair tests, careful, accurate, keys, bar charts, table, conclusions, support, thermometers</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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| Y4 | <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"><li>- recognise that living things can be grouped in a variety of ways</li><li>- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li><li>- recognise that environments can change and that this can sometimes pose dangers to living things</li></ul> <p><i>Key Vocab: flowering and non-flowering, snails, slugs, worms, spiders, insects, human impact, nature reserves, deforestation, classification, classification keys, migrate, hibernate</i></p> <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"><li>- construct and interpret a variety of food chains, identifying producers, predators and prey</li></ul> <p><i>Key Vocab: ordering, grouping, interpret, consumer (primary, secondary, tertiary), hunted, energy</i></p>                                                                                                                                                                                                                                                                                                                                                                                                            | <p><b>Animals, including humans</b></p> <ul style="list-style-type: none"><li>- describe the simple functions of the basic parts of the digestive system in humans</li><li>- identify the different types of teeth in humans and their simple functions</li></ul> <p><i>Key Vocab: digestive system, saliva, oesophagus, stomach, gall bladder, small intestine, pancreas, large intestine, liver, rectum, tongue, mouth, teeth, tooth, canine, incisor, molar, premolar, rip, tear, chew, grind, cut</i></p> <p><b>Sound</b></p> <ul style="list-style-type: none"><li>- identify how sounds are made, associating some of them with something vibrating</li><li>- recognise that vibrations from sounds travel through a medium to the ear</li><li>- find patterns between the pitch of a sound and features of the object that produced it</li><li>- find patterns between the volume of a sound and the strength of the vibrations that produced it</li><li>- recognise that sounds get fainter as the distance from the sound source increases</li></ul> <p><i>Key Vocab: amplitude, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave, travel, vibrate/vibration, tone, speaker, sound source, insulation, fainter sound</i></p> | <p><b>Electricity</b></p> <ul style="list-style-type: none"><li>- identify common appliances that run on electricity</li><li>- construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li><li>- identify 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</li><li>- recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li><li>- recognise some common conductors and insulators, and associate metals with being good conductors</li></ul> <p><i>Key Vocab: electricity, electric current, positive, negative, appliances, mains, insulator, conductor, component, circuit, series circuit, crocodile clips, wires, bulb, brightness, battery, cell, battery holder, motor, buzzer, switch (open/close), metal (good conductor), connect, connection</i></p> <p><b>States of Matter</b></p> <ul style="list-style-type: none"><li>- compare and group materials together, according to whether they are solids, liquids or gases</li><li>- observe 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)</li><li>- identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li></ul> <p><i>Key Vocab: gas, particles, matter, process, water cycle, condensation, water vapour, evaporation, precipitation, collection, air, oxygen, melting point, freezing point, boiling point, solidify</i></p> |
|    | <p><b>Working scientifically</b></p> <ul style="list-style-type: none"><li>- asking relevant questions and using different types of scientific enquiries to answer them</li><li>- setting up simple practical enquiries, comparative and fair tests</li><li>- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li><li>- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li><li>- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li><li>- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li><li>- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li><li>- identifying differences, similarities or changes related to simple scientific ideas and processes</li><li>- using straightforward scientific evidence to answer questions or to support their findings.</li></ul> <p><i>Key Vocab: scientists, discovery process, conclude, evaluate, rank, vary, keep the same/constant, table/tally</i></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



# BERKELEY PRIMARY SCHOOL

## Science Medium Term Plan



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| Y5 | <p><b>Forces</b></p> <ul style="list-style-type: none"><li>- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li><li>- identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li><li>- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li></ul> <p><i>Key Vocab: air resistance, water resistance, friction, gravity, Earth, newtons, Newton metre, force, push, pull, upthrust, opposing, streamline, brake, mechanism, lever, gears, pulley, cog, machine, weight, mass</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>Earth and Space</b></p> <ul style="list-style-type: none"><li>- describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li><li>- describe the movement of the Moon relative to the Earth</li><li>- describe the Sun, Earth and Moon as approximately spherical bodies</li><li>- use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li></ul> <p><i>Key Vocab: solar system, orbit, sphere, spherical bodies, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, earth, sun, moon, planets, axis, revolve, rotate/rotation, day, night, phases of the moon, full, new, year, month, star, constellation, waxing, waning, crescent, gibbous, geocentric, heliocentric</i></p> | <p><b>Living things and their habitats and Animals</b></p> <ul style="list-style-type: none"><li>- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li><li>- describe the life process of reproduction in some plants and animals</li><li>- describe the changes as humans develop to old age</li></ul> <p><i>Key Vocab: sexual, asexual, pollination, dispersal, fertilisation, young, offspring, egg, embryo, baby, toddler, childhood, adolescence (puberty), adulthood, middle age, old age (senior years)</i></p> <p><b>Properties and changes to materials</b></p> <ul style="list-style-type: none"><li>- compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets</li><li>- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li><li>- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li><li>- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li><li>- demonstrate that dissolving, mixing and changes of state are reversible changes</li><li>- explain that 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.</li></ul> <p><i>Key Vocab: compare, group, substance, hardness, solubility, transparency, conductivity (electrical and thermal), insulator (electrical and thermal), magnets, magnetic, solid, liquid, gas, heating, cooling, melting, freezing, dissolve, mixing, mixture, evaporating/tion, filter/filtration, sieving, reversible, irreversible, separate, solution, residue</i></p> |
|    | <p><b>Working scientifically</b></p> <ul style="list-style-type: none"><li>- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li><li>- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li><li>- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li><li>- using test results to make predictions to set up further comparative and fair tests</li><li>- reporting and presenting 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</li><li>- identifying scientific evidence that has been used to support or refute ideas or arguments.</li></ul> <p><i>Key Vocab: interpret, relationship, prediction, analyse, rank, variable, constants, control, repeat, key, line graph, notice patterns, relationships, independent variable, dependent variable, controlled variable, accuracy, precision, classification keys, scatter graphs, line graphs, data loggers</i></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



# BERKELEY PRIMARY SCHOOL

## Science Medium Term Plan



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| Y6 | <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>- 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</li> <li>- use recognised symbols when representing a simple circuit in a diagram</li> </ul> <p><i>Key Vocab:</i><br/>neutrons, protons, electrons, device, volume, voltage, diagram, symbols, current, resistance</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p><b>Light</b></p> <ul style="list-style-type: none"> <li>- recognise that light appears to travel in straight lines</li> <li>- 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</li> <li>- 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</li> <li>- use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul> <p><i>Key Vocab:</i><br/>straight lines, sun, reflect/ion, absorb, emit, scatter, refract/ion</p> | <p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- describe 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</li> <li>- give reasons for classifying plants and animals based on specific characteristics</li> </ul> <p><i>Key Vocab:</i><br/>classifying, classification key, compare, characteristics, organisms, micro-organism, organism, bacteria, fungus, virus, warm-blooded, cold-blooded, populations</p> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>- describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p><i>Key Vocab:</i><br/>circulatory system, function, transport, nutrient, water, oxygen, carbon dioxide, blood, blood vessels, white blood cells, red blood cells, platelets, plasma, heart, arteries, veins, capillaries, oxygenated, deoxygenated, exercise, respiration, lungs, diet, exercise, alcohol, drugs, tobacco, lifestyle</p> <p><b>Evolution and inheritance</b></p> <ul style="list-style-type: none"> <li>- recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>- recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>- identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul> <p><i>Key Vocab:</i><br/>fossils, adaptation, evolution, reproduction, genetics, variation, offspring (vary / not identical), inherited, environmental, mutation, competition, survival of the fittest, evidence, species</p> |
|    | <p><b>Working scientifically</b></p> <ul style="list-style-type: none"> <li>- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>- using test results to make predictions to set up further comparative and fair tests</li> <li>- reporting and presenting 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</li> <li>- identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul> <p><i>Key Vocab:</i><br/>hypothesis, plan, categorise, database, enquiry, support, opinion/fact, confidently name scientific enquiry types</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |