**Farnborough Grange Nursery and Infant School – Curriculum Overview**

**Science**

| Nursery | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| | Understanding the World (UW) | | | (UW) Plants | | |
| **Skills** | Repeat actions that have an effect.<br><br>Explore materials with different properties.<br><br>Explore natural materials, indoors and outside.<br>Use all their senses in hands-on exploration of natural materials.<br>Talk about what they see, using a wide vocabulary. | Make connections between the features of their families and other families.<br><br>Notice differences between people.<br><br>Know that there are different countries in the world and talk about the differences they have experienced or seen in photos. | Take apart using tools different electrical items such as keyboards etc<br><br>Use remote control cars<br><br>Play with mechanical equipment and investigate, e.g. wind-up toys, pulleys, sets of cogs with pegs and boards.<br><br>Use books to find out with adults about things in the natural world that interest them. | Looking after plants and knowing they need water to grow.<br><br>Plant seeds and bulbs so children observe growth and decay over time.<br><br>Support children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs.<br><br>Use books to find out with adults about things in the natural world that interest them. | Know how the water pushes up when they try to push a plastic boat under it.<br><br>Explore floating and sinking.<br><br>Explore how they can stretch elastic, snap a twig, but can't bend a metal rod<br><br>Magnetic attraction and repulsion.<br><br>Use books to find out with adults about things in the natural world that interest them. | Explore vocabulary associated with their properties.<br><br>Cooking/messy play activities where the properties change – melt and freezing, combining materials.<br><br>Use books to find out with adults about things in the natural world that interest them. |
| **Knowledge** | ***Core***:<br>Explore materials with different properties.<br><br>Explore natural materials, indoors and outside.<br><br>***Hinterland***:<br>Bring in a favourite toy/ look at classroom toys- what are they made of? Can the same toy be made from different materials, e.g. car- wooden/ plastic... | ***Core***:<br>Use all their senses in hands-on exploration of natural materials.<br><br>Explore collections of materials with similar and/or different properties.<br><br>Talk about what they see, using a wide vocabulary<br><br>***Hinterland***:<br>Can they use personal experiences, e.g. holidays, day trips to the seaside, park... | - | ***Core***:<br>Plant seeds and care for growing plants.<br><br>Understand the key features of the life cycle of a plant and an animal.<br><br>***Hinterland***:<br>-Gardening, feeding ourselves, and enjoying/ appreciating nature around us.<br><br>-4 stages of a caterpillar life cycle.<br>-It takes around 21days for a chick to hatch. | ***Core***:<br>Explore and talk about different forces they can feel.<br><br>***Hinterland***:<br>Magnets have two **poles**: The magnetic force is strongest near the magnet's poles. Magnetic forces are non-contact forces - this means that magnets affect each other without touching. | ***Core***:<br>Talk about the differences between materials and changes they notice.<br><br>***Hinterland***:<br>Boiling water occurs at 100°C<br>Melting point at 0°C! |
| **Key vocabulary** | Sort, group, match, colour, shape, size,<br><br>Senses – touch, taste, hear, smell, see.<br><br>Weather – sun, rain, hot, cold | | Forwards, backwards, tool names, screws, fix, mend, etc | Plant, flower, tree, leaves, branch, trunk.<br><br>Grow, die, mould, change, water, food,<br><br>Lifecycle, change, grow, chick, hatch, egg, cocoon, caterpillar, chrysalis, frog, frogspawn, stage, tadpole | Push, pull, float, sink, stretch, bend. | Bend, squeeze, stretch,<br><br>Cornflour, gloop, playdough, oil, water<br><br>Cook, heat, hot, cold, freeze, melt, solid, liquid |

| Reception | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| | Seasonal changes & natural environments | | | Life Cycles | Plants/ Seasonal changes | Materials |
| **Skills** | Explores natural world and talks about what they can see, hear, smell.<br><br>Knows some simple changes in the outdoor environment. | | Can talk about some of the changes in the outdoor environment.<br><br>Can make simple comparison between two environments | Can make simple comparison between two environments.<br><br>Draws plants, flowers and animals.<br><br>Hunt for mini beasts and make a habitat for one (Bug hotel). | Uses magnifying glasses etc to support their observational drawings of plants and animals.<br><br>Compares environments describing what is the same and what is different | Makes comparisons and tests different objects that may float and sink.<br>Record findings.<br><br>Talk about what is good / bad for the environment. |
| **Knowledge** | ***Core***:<br>Seasonal changes<br><br>***Hinterland***:<br>*Generally,* clocks go forward in March and back in October. | ***Core***:<br>Explore the natural world around them.<br><br>Describe what they see, hear and feel whilst outside.<br><br>Understand the effect of changing seasons on the natural world around them.<br><br>***Hinterland***:<br>Climate change | ***Core***:<br>Describe what they see, hear and feel whilst outside.<br><br>Recognise some environments that are different to the one in which they live.<br><br>Understand the effect of changing seasons on the natural world around them.<br><br>***Hinterland***: | ***Core***:<br>How landmass has changed over time (dinosaurs)<br>Observations and drawings of animals – tadpoles<br>Lifecycle of caterpillars<br>Name and label parts of mini beasts<br>Mini beast habitats<br><br>***Hinterland***:<br>14 weeks for tadpoles to turn into frogs | ***Core***:<br>Lifecycle of plants<br>Draw picture of plants and label<br>Knowing what a plant needs, effects of not having these<br>Use of compost bin<br>Planting & growing vegetables and flowers<br>Name common plants & trees<br>Seasonal changes<br><br>***Hinterland***:<br>Root-sprout-baby plant-adult plant(flower/fruit)-seeds fall- seeds-root... | ***Core***:<br>Floating and sinking<br>Naming and sorting materials and their properties<br>Creating a boat out of their own materials – does it float?<br>Sun safety and water safety<br>Polluting the sea<br><br>***Hinterland***:<br>Why do things sink and float? - CBeebies - BBC |
| **Key vocabulary** | Season – spring, summer, autumn, winter<br>Weather – cloudy, misty, foggy, chilly<br>Senses - smell, taste, touch, senses, | | Same, different, touch, taste, feel, hear, smell.<br>Snow ice, rain, sun, wind<br><br>Stem, leaves, flower, trunk, blossom, tree, trunk, identify, branches, leaves, buds. | Minibeast related vocab – worm, beetle, ants, spider, etc<br><br>Magnifying glass, pot, environment, habitat, woodlands, grass, earth, shelter | Seed, soil, pot, water, sun, growth, root, stem, sprout, leaf, petal, planting, growing. | Float, sink, heavy, light, upward push, strong, environment, sea, pollution.<br><br>All vocab from previous half terms. |

| | Autumn 1 | Autumn 2 | Spring 1 | Summer 1 | Summer 2 |
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| **Year 1** | (Introduce Seasonal Changes – set up taking a photo of a deciduous tree to track throughout the seasons)<br><br>Animals | Humans | Materials and their properties<br><br>(& monitor seasonal changes) | Plants<br>(Possibly move to Spring 2 if weather or timetable allows!<br><br>(& monitor seasonal changes) | Seasonal changes (conclusion) |
| **Skills** | Identifying and classifying animals.<br><br>Ask simple questions and recognise that they can be answered in different ways (How can the animals be grouped?)<br><br>Compare and contrast, describing how they identify and group them.<br><br>Use the local environment throughout the year to explore and answer questions about animals in their habitat (trip)<br><br>Observe closely, using simple equipment | Ask simple questions and recognise that they can be answered in different ways<br><br>Compare and contrast, describing how they identify and group them.<br><br>Observe closely, using simple equipment | Asking simple questions and recognising that they can be answered in different ways<br><br>Observing closely using simple equipment<br><br>Performing simple tests<br><br>Using their observations and ideas to suggest answers to questions<br><br>Gathering and recording data to help in answering the questions | Observing closely using simple equipment<br><br>Identifying and classifying<br><br>Using their observations and ideas to suggest answers to questions | Asking simple questions and recognising that they can be answered in different ways<br><br>Observing closely using simple equipment<br><br>Using their observations and ideas to suggest answers to questions<br><br>Gathering and recording data to help in answering the questions<br><br>Make tables and charts about the weather / make displays of what happens in the world around them, including day length, as the seasons change |
| **Knowledge** | ***Core***:<br>**Identify** and name a variety of common animals; -including fish, amphibians, reptiles, birds and mammals. -carnivores, herbivores and omnivores.<br><br>**Describe and compare** the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).<br><br>***Hinterland***:<br>Mammals birth live young, have hair/fur and secrete milk | ***Core***:<br>Identify, name, draw and label basic parts of the human body and say which sense it is associated with.<br><br>Name the five senses and which body part is associates with each sense.<br><br>***Hinterland:***<br>The average child has their full set of 20 primary teeth by 3 years old. Between about 6-7 years, the primary teeth start to shed and the permanent teeth begin to come through. By the age of about 21, the average person has 32 permanent teeth – 16 in the upper jaw and 16 in the lower jaw | ***Core***:<br>Distinguish between an object and the material from which it is made<br><br>Identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock<br><br>Describe the simple physical properties of a variety of everyday materials<br><br>Compare and group together a variety of everyday materials on the basis of their simple physical properties<br><br>***Hinterland***:<br>Glass is made from sand (heating it so much that it becomes liquid sand, then cools and flattens to make glass) | ***Core:***<br>Identify and name a variety of common, wild and garden plants, including deciduous and evergreen trees.<br><br>Identify and describe the basic structure of a variety of common flowering plants including trees.<br><br>***Hinterland***:<br>Deciduous – sheds it's leaves annually, to conserve water and energy, e.g. maple/ oak. Changes colour of leaves first (lose chlorophyll in autumn/ winter months). | ***Core***:<br>Observe changes across the four seasons<br><br>Observe and describe weather associated with the seasons and how day length varies<br><br>***Hinterland***:<br>*Generally,* clocks go forward in March and back in October. |
| **Key vocabulary** | Names of animals experienced first-hand from each vertebrate group<br><br>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves | | Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through | Names of wild plants, garden plants, flowering plants, trees, leaf, germinate, flower, blossom, petal, fruit, berry, root, stem, seed, trunk, branch, stem, stalk, vegetable | Weather vocabulary – e.g. sun, hot, cloud, rain, sleet, snow..., seasons, patterns, change, months of the year, day/night, chart, table, observation. |

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
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| **Year 2** | (Animals including humans)<br>-Living things and their habitats | Living things and their habitats | Plants | Materials and their properties | Living things and their habitats (Stand-alone lesson) | Animals including humans |
| **Skills** | -Describe what animals need to survive<br>-Explain that animals grow and reproduce<br>-Explain why animals have offspring which grow into adults<br>-Describe the life cycle of some living things (e.g. egg, chick, chicken)<br>-Explain the basic needs of animals, including humans for survival (water, food, air)<br>-Describe why exercise, balanced diet and hygiene are important for humans (mention veganism)<br>-Suggest how to find things out<br>-Use prompts to find things out | -Match certain living things to the habitats they are found in<br>-Explain the differences between living and non-living things<br>-Describe some of the life processes common to plants and animals, including humans<br>-Describe how a habitat provides for the basic needs of things living there<br>-Describe how some animals get their food using basic food chains<br>-Describe how plants and animals are suited to their habitat | -Describe what plants need to survive<br><br>-Observe and describe how seeds and bulbs grow into mature plants<br><br>-Investigate and describe the impact of removing light, soil or water from a growing or germinating plant.<br><br>-Observing changes over time.<br><br>Greater depth:<br><br>-Describe what plants need to survive and link it to where they are found<br><br>-Explain that plants grow and reproduce in different ways<br><br>-Identify animals and plants by a specific criteria, e.g. lay eggs or not; have feathers or not | -Describe the simple physical properties of a variety of everyday materials<br>-Compare and group together a variety of materials based on their simple physical properties<br>-Use - see, touch, smell, hear or taste - to help them answer questions<br>-Use some scientific words to describe what they have seen and measured<br><br>***Greater depth:***<br>Describe the properties of different materials using words like, transparent or opaque, flexible, etc.<br>-Sort materials into groups and say why they have sorted them in that way<br>-Say which materials are natural and which are man-made<br><br>**<u>Everyday materials</u>**<br>-Explore how the shapes of solid objects can be changed (squashing, bending, twisting, stretching)<br>-Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper, cardboard for particular uses<br>-Organise things into groups<br>-Say whether things happened as they expected<br><br>***Greater Depth:***<br>-Explain how materials are changed by heating and cooling<br>-Explain how materials are changed by bending, twisting and stretching<br>-Tell which materials cannot be changed back after being heated, cooled, bent, stretched or twisted | -Find things out using secondary sources of information.<br><br>-Organise things into groups | <u>Greater Depth</u><br>-Explain that animals reproduce in different ways<br>-Name some characteristics of an animal that help it to live in a particular habitat<br>-Describe what animals need to survive and link this to their habitats |

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| **Knowledge** | ***Core***:<br>Find out about and describe the basic needs of humans for survival (food, air and water).<br><br>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.<br><br><u>Animals including humans</u><br>Describe the importance for humans of exercise, eating the right types of food and good hygiene.<br><br>***Hinterland***:<br>Children have 20 teeth and adults 32. | ***Core***:<br>Identify that most 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.<br><br>Identify and name a variety of animals in their habitats.<br><br>***Hinterland***:<br>Habitats are suited to animals individually to help them survive. Without them, animals risk becoming extinct, e.g.<br>Savanna – elephants, lions...<br>Rainforests- poison dart frogs, snakes, jaguars...<br>Deserts- snakes, mice, armadillo...<br>Arctic – Narwhals, penguins, arctic fox, polar bears...<br>Coral Reef- sharks, crustaceans... | ***Core***:<br>Observe and describe how seeds and bulbs grow into mature plants<br><br>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.<br><br>***Hinterland***:<br>Seeds can be dispersed by blowing, eating, exploding, floating and sticking. | ***Core***:<br><u>Materials and their properties</u><br>Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.<br><br>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.<br><br>***Hinterland***:<br>*Recyclable/ reusable materials* | ***Core***:<br>Explore and compare the differences between things that are living, dead and things that have never been alive.<br><br>***Hinterland***:<br>e.g., a battery-operated toy dog that walks and yaps<br><br><u>Dead, living and non-living - BBC Bitesize</u> | ***Core***:<br>Notice that animals, including humans, have offspring which grow into adults.<br>(Link to PSHE Growing and Changing)<br><br>***Hinterland***:<br>Discussion in year 1 around mammals etc. |
| **Key vocabulary** | Child, baby, toddler, teenager, adult, elderly, hygiene, pregnancy, health, grow, growth, move, feed, die, variety, germ, healthy, unhealthy, medicines, safety, exercise, food, food groups- protein, carbohydrates, dairy... (Greater depth – mention alternatives – e.g. dairy free/ gluten free) | Mammals, bird, reptiles, amphibians, hatchling, gills, egg, spawn, carnivore, herbivore | Observation, growth, compare, seeds, bulbs, temperature, stem, predict, flower, leaf, measure, diagram, comparative, tests, life cycle, germinate, grain | Habitats, micro-habitats, food, food chain, leaf litter, shelter, seashore, woodland, ocean, rainforest, conditions, desert, damp, shade<br><br>Change shape, twist, squeeze, stretch, pull, push. | Force, movement, direction, distance, further, furthest, fast, faster, fastest, slow, slower, slowest, high, higher, highest, speed up, slow down, change direction, | Living, dead, never alive, habitats, micro-habitats, leaf litter, shelter, sea shore, woodland, ocean, rainforest, conditions, desert, damp, shade, |