Bramley Sunnyside Infant School

'We Shine Here'

Science Long Term Plan

FS1				
Autumn Term	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Autumn Term 1	Self, Family and community	<u>Materials</u> Explore natural materials using appropriate senses. Explore collections of materials with a range of properties. Explore different materials freely. <u>Seasons</u> Explore changes in autumn.	Select equipment and materials to use to create e.g a nest. Ask questions, observe closely and present results. Start to use vocabulary associated with the season.	Explore, touch, feel, make, create, materials, hard, soft, bend, shiny, dull. Autumn, colder, leaves, brown, fall, tree, different, weather.
Autumn Term 2	Self, Family and community	<u>Materials</u> Explore different textures. Join materials using PVA glue. <u>Seasons</u> Explore what happens on cold winter days. Talk about what they see, using a wide vocabulary e.g. – commenting on what they see when we go on a leaf hunt.	Talk about the differences of a variety of materials. Notice differences in the seasons. Make observations of the weather.	Explore, touch, feel, make, join, material, tape, glue. Autumn, colder, rain, leaves, brown, fall, tree, different, weather.

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Spring Term	Topic	Key Knowledge	Working Scientifically	Key Vocabulary
Spring term 1	Emergency in the Big City	<u>Materials</u> Talk about the differences between materials and changes they notice e.g. – melting ice cubes and baking. Explore how things work for example sand/water wheels and smartboard.	Ask questions and investigate why things are happening and changing, often linked to the children's own interests.	Change, cold, melt, rise, mix, difference, freezing, dripping.
Spring term 2	London	<u>Materials</u> Begin to have ideas about what to create and which materials to use. <u>Plants</u> Plant seeds and care for growing plants (plant a sunflower). <u>Seasons</u> Explore changes in spring.	Use their senses and hands on exploration of natural materials and their environment to explore and talk about what they see, hear, smell and touch. Identify familiar plants. Draw pictures of plants. Ask and answer questions about what they have observed. Collect and gather evidence of changing	Explore, see, hear, smell, touch, feel, Plant, seed, stem, leaves, spring, soil, grow, water, garden. Change, Spring, buds seasons, warmer, weather. Day.

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			seasons talking about what they see.	
Summer Term	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Summer 1	All creatures great and small.	<u>Living Things</u> Begin to understand the need to respect and care for the living environment and all living things e.g., watering the seeds we have planted. <u>Materials</u> Join different materials using e.g., Sellotape. <u>Forces</u> Explore and talk about different forces they can feel e.g. – push/pull toys outside and through water exploration. <u>Seasons</u> Explore changes in Summer.	May ask and answer questions on first hand experiences and books. Select equipment and materials to use and create own models. Explore the different forces they can feel and talk about why this is happening. Comment on the weather making observations linked to seasonal understanding.	Care, living, plants, animals. Join, material, make, model. Push, pull, force, move, flow, faster. Change, Summer, hot, seasons.
Summer 2	All creatures great and small.	<u>Animals</u> Talk about the key features of a life cycle – e.g. – caterpillar	After close observation, draw pictures of the	Grow, adult, baby, egg, seed, flower, leaves,

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		and the flower in 'the tiny seed' story. <u>Life cycles</u> Observe animals closely. (Meet a Creature visit).	natural world including plants and animals.	water, healthy, happy, animal.
FS2				
Autumn Term	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Term 1 Term 2	Self, Family and Community Self, Family and Community	<u>Senses</u> Use their senses to explore the world around them – Walk around the school fields/grounds and explore what they see, hear and touch.	<u>Work scientifically by:</u> Use my senses and look closely at what they find. Create simple representations of objects.	<u>Key Vocabulary:</u> Eyes, nose, mouth, ears, fingers, look, smell, taste, see, touch, hear.
		<u>Plants</u> (Harvest) Talk about plants around the school grounds and learn new vocabulary. Give opportunities to design practical, attractive environments, for example, taking care of the flowerbeds or organising equipment outdoors. Talk about how plants look are they the same/different?	<u>Work scientifically by:</u> Talk about things like plants. Look at plants and question - What is the same? What is different? Use my senses and look closely at plants. Create simple representations of plants.	<u>Key Vocabulary:</u> Leaf, flower, plant, stem seed tree, petals, trunk, plant, fruit, vegetable, branch, roots, leaves, bulb, flowers, seed, stem.

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	Talk about the changes. Name & describe some plants. • Identify familiar plants • Draw pictures of plants Talk about things they have seen outside including plants. Extend vocabulary: leaves, petals, roots, bulb, trunk, branches, stem, garden plants, wild plants, seeds. Understand the key features of the life cycle of a plant. Observe plants closely through a variety of means e.g., magnifiers, models, & photographs Practitioners to use the correct terms so that, e.g., children use its correct name e.g. seed, bulb, root, flower, plant, fruit vegetable. Pose carefully framed open-ended questions, such as "How can we…?" or "What would happen if…?".		
	<u>Materials</u> (Refuse collectors - Recycling) Explain and talk about its importance for looking after the	<u>Work scientifically by:</u> Talk about the similarities of a variety of materials.	<u>Key Vocabulary:</u> Recycle, earth, planet, global warming, material,

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		planet. Sort simple materials for recycling E.g., paper, plastic, card.	Talk about the differences of a variety of materials. Talk about the similarities of a variety of materials. Talk about the differences of a variety of materials.	environment, waste, plastic, cardboard, paper.
		<u>Seasons</u> Understand the effect of changing seasons on the natural world around them (weather and seasonal features)	<u>Work scientifically by:</u> Noticing differences in the seasons. Noticing similarities in the seasons. Make observations of the weather. Builds up vocabulary of the seasons/weather.	<u>Key Vocabulary:</u> Summer, Spring, Autumn, Winter, Seasons, sun, moon, day, dark, night, light.
Spring Term	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Term 1 Term 2	Emergency in the Big City London	<u>Materials</u> Use their imagination whilst using different materials. Explore materials freely. (In order to develop their own ideas and decide what to make).	<u>Work Scientifically by:</u> Talk about the similarities of a variety of materials. Talk about the differences of a variety of materials.	<u>Key Vocabulary</u>: Material, wood, plastic, glass, paper, shiny, metal, rock, hard, soft, fabric, smooth, rough.

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		Join different materials. Talk about what is happening, helping them to think about cause and effect. Talk about the similarities and differences of a variety of materials. Have my own ideas when using/experimenting with a variety of materials. Question why things happen when experimenting.	Use tools and equipment carefully Eg. when using scissors.	
		<u>Plants</u> Talk about things like plants. Plant seeds and investigate what makes the seeds grow? Take care of plants and talk about plants outside e.g., Flower beds, allotments. Practitioners to use the correct term so that children use its correct name e.g., Root, bulb, flower, plant, fruit, vegetable. Look at plants and question what is the same, what is different. Pose carefully framed open ended questions such as, how can we? What would happen if?	<u>Work Scientifically by:</u> Talk about things like plants. Look at plants and question - What is the same? What is different? Use my senses and look closely at plants. Create simple representations of plants.	<u>Key Vocabulary</u>: Leaf, flower, plant, stem seed tree, petals, trunk, plant, fruit, vegetable, branch, roots, leaves, bulb, flowers, seed, stem.

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		Talk about the changes in plants e.g. The stem has grown longer. It now has a bud. Give opportunities to record findings e.g., Drawing, writing, photos, or models. <u>Seasons</u> Describe what they feel, hear and see outside - Talk about and name the seasons.	<u>Work scientifically by:</u> Noticing differences in the seasons. Noticing similarities in the seasons. Make observations of the weather. Builds up vocabulary of the seasons/weather.	<u>Key Vocabulary:</u> Summer, Spring, Autumn, Winter, Seasons, sun, moon, day, dark, night, light.
Summer Term	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Term 1 Term 2	All Creatures Great and Small All Creatures Great and Small	<u>Animals</u> Talk about how animals look – are they the same/different? Talk about animals and what they need to grow and how they change over time. Talk about animals and their babies. Learn and talk about animals under the sea.	<u>Work scientifically by:</u> After close observation, draw pictures of the natural world, including animals and plants.	<u>Key Vocabulary</u>: herbivore, carnivore, omnivore, human, animal, fish, birds, head, ear, mouth, nose, face, hair, legs, knee, arm, elbow, back, toes, hands, fingers.
		<u>Health</u> Acknowledge and encourage children's efforts to manage	<u>Work Scientifically by:</u>	<u>Key Vocabulary</u>:

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	their personal needs. Eg. Hand washing tooth brushing. Promote health awareness by talking with children about health, wellbeing, exercise, healthy eating, sleeping routines and its effects on their bodies and the positive contribution it can make to their health.	Talk about and question why things happen to my body during exercise. To test my ideas Eg. What makes me cooler?	Health, healthy, diet, brush, exercise, eat, sleep, body.
	<u>Materials</u> Explore materials freely. (In order to develop their own ideas and decide what to make). Join different materials. Talk about what is happening, helping them to think about cause and effect. Talk about the similarities and differences of a variety of materials. Encourage children to notice changes in properties of media as they are transformed through becoming wet, dry, flaky or fixed. Talk to children about ways of finding out what they can do with different media and what	<u>Work Scientifically by:</u> Talk about the similarities of a variety of materials. Talk about the differences of a variety of materials. Use tools and equipment carefully e.g., when using scissors. Have my own ideas when using/experimenting with a variety of materials. Question why things happen when experimenting.	<u>Key Vocabulary:</u> Material, scissors, wood, plastic, glass, paper, card, shiny, metal, rock, hard, soft, fabric, smooth, rough, experiment.

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		happens when they put different things together such as sand, paint and saw dust. Have my own ideas when using/experimenting with a variety of materials.		
		<u>Seasons</u> Notice differences in seasons. Notice similarities in the seasons Builds up vocabulary of the seasons/weather. Talk about changes and effects of the weather e.g., Lambing, seed to sunflowers, ice to water, tadpole to frog, egg to duck (life cycles) Give opportunities to record findings e.g., Drawing, writing, photos, or models.	<u>Work scientifically by:</u> Noticing differences in the seasons. Noticing similarities in the seasons. Make observations of the weather. Builds up vocabulary of the seasons/weather.	<u>Key Vocabulary</u>: Summer, Spring, Autumn, Winter, Seasons, sun, moon, day, dark, night, light.
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Autumn Term 1	N.C. Animals Including Humans OAU - Human Body parts/	Explain that humans are animals that belong to group called mammals. Name different parts on the outside of the human body and talk about what jobs they do.	Look closely to draw the human body. Firsthand exploration of tasting/ smelling foods/substances to make comparisons.	Head, neck, shoulder, arms, elbow, hand, finger, leg, ankle, toe, face, cheek, ears, eyes, hair, mouth, teeth

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	The senses	Name different body parts on the inside of the human body and talk about what jobs they do. Explain which parts of the human body we use for our senses. Use the sense of sight, smell, and sound to identify things. Use the sense of taste and touch to identify things.	Firsthand exploration to make and describe sounds. Classify sounds in terms of volume and pitch.	Sight, hearing, touch, taste, smell Sound, volume, loud, quiet, pitch, high, low
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Autumn Term 2	N.C - Seasonal Changes OAU - Seasonal Changes	What are the four seasons? Identify different types of weather. Explain how weather changes across the seasons? Measure rainfall and wind Explain how trees change across the seasons? What is hibernation?	Look closely at weather. Observe weather over time and record weather data. Observe trees. Use data to answer questions. Use simple equipment to measure rainfall	Seasons, Spring, Summer, Autumn, Winter, Weather, forecast, cold, dark, rainy, chilly, snowy, foggy, warm, hot bright, rainfall, wind direction, deciduous trees, flourishing, bushy, changing, bare.
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Spring Term 1	N.C - Everyday Materials OAU- Materials	Name different objects and the materials they are made from. Name and group different materials that can be recycled.	Observe and look closely when identifying, describing, and sorting materials.	Object, material, wood, paper, glass, metal, fabric, rubber Properties hard, soft, transparent, opaque, shiny, dull, flexible, rigid

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		Describe materials and objects that can be reduced, reused, and recycled. Describe simple properties of everyday materials. Talk about different jobs linked to science.	Classify materials in terms of their physical properties.	float sink, absorbent, waterproof.
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Spring Term 2	N.C - Everyday Materials OAU - Building Things	Plan and do an investigation to find out about waterproof materials. Find out about how famous scientists investigate waterproof materials. Plan and do an investigation to find out about transparent and opaque materials. Name transparent and opaque materials and talk about how they are useful. Explore, discuss, and raise questions about everyday materials. Know why certain materials are chosen for a specific purpose	Carry out a test (which materials float/sink? Which is the most absorbent material? Which material would make the best raincoat? Record simple data. Use observations to suggest answers to questions. Carry out a test (which materials float/sink? Which is the most absorbent material? Which material would make the best raincoat? Record simple data.	Properties hard, soft, transparent, opaque, shiny, dull, flexible, rigid float sink, absorbent waterproof Test table chart data result notice pattern.

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			Use observations to suggest answers to questions.	
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Summer term 1	N.C. – Plants OAU- Plants Session 2 3 4 -identify name and describe structure	Identify plants near my school or home. Name different parts of trees. Identify and name different trees. Compare deciduous and evergreen trees and name some examples of each. Name different parts of a flowering plant. Identify and name some common flowering plants. Identify and name different wildflowers that grow from seeds.	Gather data which flowers tress are growing on our school site. What's in the quadrant? Look closely to draw the flowers collected from school grounds. Look closely to observe the types of trees in the school grounds and when drawing leaves.	Plants, soil, natural, wildflower, dandelion daisy, lavender, cow parsley, poppy, stem petals, deciduous trees, evergreen trees, trunk, branch, roots, leaves, veins.
Year 1	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Summer Term 2	N.C - Animals Including humans. OAU - Animal Kingdom	Name and group animals that can be kept as pets. Name and group together common animals that are mammals. Name and group common animals that are birds and reptiles.	Make observations of animals first- hand and using secondary sources. Observe, compare and contrast living things through videos, photographs or first-hand experience.	Living, non- living, vertebrate, invertebrate crustaceans, arachnids, insects, amphibians, birds, mammals, fish, skeleton, spine, back bone, protection, gills, hair, fur,

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		Name and group animals that are fish and amphibians. Describe and compare the structure of common animals. Name and group animals that are carnivores, herbivores, and omnivores.	Use senses to compare textures sounds smells. Classify living things according to their structure/appearance or what they eat. Make observations of animals first- hand and using secondary sources.	feathers, claws, warm-blooded, cold- blooded, carnivore, omnivore, herbivore
Year 2	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Autumn Term 1	N.C. – Everyday Materials OAU- Changing Materials	Explain why different objects are made from different materials depending on their use. Compare how suitable materials are for different uses based on their properties. Explain where different materials come from and how some materials are less harmful to planet Earth. Investigate which materials are absorbent and explain how suitable they are for different uses. Investigate which materials are stretchy and explain how	Compare/ the uses of different materials. Observe/record changes from bending, squashing, twisting, stretching. Carry out a simple test - elasticity of different fabrics.	Object, material, wood, metal, plastic, glass, brick, rock, paper, cardboard, fabric, rubber, property, purpose, solid, squash, bend, twist, stretch, elasticity, stretchy, measure, compare

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		suitable they are for different uses.		
Year 2	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Autumn term 2	N.C. -Everyday Materials OAU- Mixing and Making	Plan and carry out a test to try to change the shape of different materials in different ways. Find out how the shape of solid objects made from some materials can be changed.	Classify materials in terms of raw/synthetic. Investigate what happens when we heat different solids. Investigate which mixture makes the best bubbles. Investigate changes by freezing and cooking.	Raw material synthetic material, natural, man-made, heating, Kevlar, solid, liquid, gas, states of matter, particles, melting, heat, liquified, mixture, dissolve, soluble, insoluble, reversible, irreversible, freezing, ingredients, cooking
Year 2	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Spring Term 1	N.C. - Living Things & Their Habitats OAU - Habitats	Compare and group things into living and non-living. Describe movement as something that all living things do. Compare and group together things that are alive, dead, and never alive. Explain why different animals live in different habitats. Explain why different plants live in different habitats.	Classify objects in terms of living/ non- living. Create microhabitats outside. Observe and record simple data when exploring a local woodland habitat	Living, non-living, organism, movement, sensitivity, respiration, excretion, reproduce, growth, nutrition, habitat, natural, microhabitat, environment, predators, carnivore, herbivore, omnivore, food chain

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Year 2	Topic	Key Knowledge	Working Scientifically	Key Vocabulary
Spring Term 2	N.C. Living Things & Their Habitats. OAU - Habitats/Food Chains	Identify and name plants and animals found in microhabitats. Find ways to encourage plants and animals to live safely in microhabitats. Describe how animals get the food they need to stay alive. Order different plants and animals in a simple food chain. Create food chains and talk about different roles played by plants and animals. Compare the food chains that have been created with other food chains.	Use secondary sources to find out about desert rainforest habitats and the organisms that live in them. Visit 'The Deep' at Hull to explore ocean habitats.	Woodland, pond, savannah, desert, cold, hot, dry, humid, camel, cactus, scorpion, tamarin, poison dart frog, orchid, predators, carnivore, herbivore, omnivore, food chains.
Year 2	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Summer Term 1	N.C. - Animals Including Humans OAU- Human Lifestyle (exercise diet how bodies change)	Know the different organs of the human body and their functions. Understand what exercise it, what it does to our bodies and why it is important. Know what a healthy diet consists of. Know what hygiene is and why it is important to be hygienic. Know how our bodies change as we get older.	Find out that animals including humans have offspring which grow into adults. Find out using secondary resources about the basic needs of animals, including humans, for survival (water, food, air). Describe and test the importance for humans to exercise, eating the right	human, body, muscles, skeleton, brain, heart, lungs, exercise, physical activity, heart rate, increase, strengthen, important, healthy, diet, carbohydrates, protein, fats and oils, vitamins, minerals, energy, hygienic, germs, mould, grow,

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		Know that animals including humans have offspring which grow into adults	amounts of different types of foods and hygiene.	change, baby, toddler, child, teenager, adult, offspring.
Year 2	**Topic**	**Key Knowledge**	**Working Scientifically**	**Key Vocabulary**
Summer Term 2	N.C. – Plants OAU – Plants Session 1, 5, 6 – (observe seeds bulbs growth investigate needs of a plant).	Explain that most plants produce seeds which grow into new plants. Explain that some plants grow from bulbs. Investigate and find out what happens to plants when they do not get what they need. Observe and record different stages of plant growth. Find out and describe what happens when plants do not have water. Find out and describe what happens when plants do not have warmth. Find out and describe what happens when plants do not have light. Explain that plants are grown as food as part of a healthy diet.	Observe and record, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb. Observe similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.	Seeds, bulbs, plants, grow, stem, roots, flower, petal, life cycle, temperature, warm, cool, light, dark, healthy diet.