

St George's Long Term Science Plan Synopsis

Topic/Key Concept	F1			F2			Year 1						Year 2					
	Comparing Materials	Seasons	Animals and plants	Feeding and Exercise	Changes: temperature/ life cycle/season	Living Things and materials	Identifying Materials	Changing Seasons	Comparing Materials	Parts of Animals (including humans)	Types of Animals	Plants	Changing Shape	Uses of Materials	Living Things	Habitats	Feeding and Exercise	Plants
Links with other STEM subjects								CS - Creating media digital painting			CS - creating media and digital writing	CS - Data amd grouping information				CS - pictograms		CS - digital photography
Scientists							Martin Brock	Steve Lyons	Becky Schroeder	Lyndsay Hunter (Comes into school)	David Attenborough	Maria Sibylla Merian	Julie Brusaw	John Boyd Dunlop John Loudon McAdam Charles Macintosh	Hamza Yassin	Rachel Carson	Joe Wicks	Daniel Solander
Career Opportunities							Colour Technologist Material Scientist Geologist	Meteorologist Water Quality Scientist Military Weather Officer	Materials Engineer Pharmacist Product Development Scientist	Doctor Vet Sports Scientist	Radiographer Farmer Zoo Keeper	Botanist Environmental Scientist Arborist	Material engineer Chemist Inventor	Mechanical engineer Constructional engineer Fashion designer	Animal behaviourist Entomology Cameraman	Zoologist Marine biologist Polar scientist	Nutritionist Dietician Personal trainer	Tree surgeon Horticulturist Ecologist
Key Learning Focus (Big Picture)	Talk about the differences between materials and changes they notice. Explore collections of materials with similar and/or different properties. Use all their senses in hands-on exploration of natural materials. Talk about what they see, using a wide vocabulary.	Begin to understand the need to respect and care for the natural environment and all living things. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore and talk about different forces they can feel.	Use all their senses in hands on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary. Explore how things work. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.	Describe what they see, hear and feel while they are outside. Recognise some environments that are different to the one in which they live. Understand the effect of changing seasons on the natural world around them.	Explore the natural world around them. Describe what they see, hear and feel while they are outside. Understand the effect of changing seasons on the natural world around them.	Explore the natural world around them. Describe what they see, hear and feel while they are outside.	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials.	Observe changes across the 4 seasons. Observe and describe weather associated with the seasons and how day length varies.	Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. To be completed throughout the year in outdoor learning.	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Notice that animals, including humans, have offspring which grow into adults. Explore and compare the differences between things that are living, dead, and things that have never been alive.	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. Identify and name a variety of plants and animals in their habitats, including microhabitats.	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. 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.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. To be completed throughout the year in outdoor learning but to complete the main unit in Summer 1 when plants are in bloom.
National Curriculum Link	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Explore the natural world around them, making observations and drawing pictures of animals and plants.	playing and exploring children investigate and experience things, and 'have a go'	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	Explore the natural world around them, making observations and drawing pictures of animals and plants.	playing and exploring children investigate and experience things, and 'have a go'	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.	Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties.	Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees.	Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Notice that animals, including humans, have offspring which grow into adults. Explore and compare the differences between things that are living, dead, and things that have never been alive.	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. Identify and name a variety of plants and animals in their habitats, including microhabitats. 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.	Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.
Learning Outcome 1	Manipulate materials to achieve a planned effect I can discuss what happens to the mixture and the changes which take place as the bread bakes. I can make observations over time.	Discuss what we can see in nature in different seasons. I can make observations about different times of the year.	Grow a plant from a seed I can discuss the different things a plant needs to grow. I can make observations over time.	Produce a food diary I can discuss the food which I have eaten	Look closely at similarities, differences, patterns and change in an animal's life cycle. I can predict what will happen within the lifecycle of a Penguin	Understand what a seed needs to grow I can discuss the different things a plant needs to grow. I can make observations over time.	Find out which materials they can identify and be able to distinguish between the object and the material from which it is made.	Observe changes across the four seasons Notice patterns by asking simple questions & Gather and record data using simple equipment	Describe physical properties of some everyday materials Identifying and classifying	Name and label the basic parts of the human body.	Name some common animals and recognize that humans are animals. Observing closely, using simple equipment.	Sort plants from other objects and justify their reasons. Explain and name the features of a plant. To draw and label a plant. Observe closely using a magnifying glass. Identify and classify.	Identify how the shape of a solid object can be changed Identifying and classifying	Identify a range of materials and their properties Identifying and classifying WS Notice patterns by asking simple questions	Identify and classify into living and non living. Gather and record data using simple equipment	Recognise a habitat and describe habitats Identifying and classifying	Identify the basic needs for human survival Identifying and classifying. WS Asking and answering simple questions	Observe and compare different seeds and bulbs Identifying and classifying WS Observing closely, using simple equipment
Learning Outcome 2	Manipulate materials to achieve a planned effect I can explore how water and oil interact.	Discuss what happens to animals in different seasons. I can talk about why animals hibernate	Explore the lifecycles of different animals I can talk about the animal life cycles.	Explore how our bodies can get better at doing things. I can practice activities to improve	Use your senses to explore what happens to ice as it melts	Observe the effects of exercise on the body.	Identify and name common types of material and label, collect and record objects made out of the same material.	Observe and describe weather associated with the seasons Asking and answering simple questions	Classify materials and group those with similar properties Identifying and classifying	Recognize the function of some body parts. Observing closely, using simple equipment.	Gather and record data to identify favourite pets in the class. Gather and recording data to help in answering questions.	Identify and describe the basic structure of a variety of common flowering plants. Observe closely using a magnifying glass. Identify and classify.	Create putty and experiment with it Observing closely, using simple equipment. Performing simple tests Gathering and recording data to help in answering questions.	Research and ask questions about different materials Asking and answering simple questions	Identify the properties of a living thing Using a magnifying glass. Identify and classify.	Investigate contrasting habitats Notice patterns by asking simple questions & Gather and record data using simple equipment	Classify foods into plant or animal origins Identifying and classifying.	Investigate what plants need to grow healthy Use observations to suggest answers to questions
Learning Outcome 3	Look closely at similarities, differences, patterns and change. I can explore teeth and how to keep them healthy	Explore collections of materials with similar and/or different properties to see which will keep George Bear dry. I can explore materials for different purposes	Explore how mini beasts look compared to humans. I can talk about similarities and differences	Look closely at similarities, differences, patterns and change. I can explore teeth and how to keep them healthy	Discuss what happens to trees in different seasons. I can make observations over time.	Experiment with different materials to make the paper rocket travel the furthest	Use their knowledge of everyday materials to recognise that different objects can be made from the same material. Identify materials that would not be used to make certain objects and say why the material is unsuitable.	Observe and describe weather associated with the seasons, using a weather station Observing closely, using simple equipment Gathering and recording data to help in answering questions.	Compare the properties of different slimes Observing closely, using simple equipment	Investigate with our five senses. Performing simple tests.	Identify and compare common features of animals using observations. Observing closely, using simple equipment.	Understand trees are plants. Name at least 2 trees and compare naming similarities and differences. Use a range of vocabulary to describe the features of a tree. Observe closely using a magnifying glass. Identify and classify.	Investigating and comparing bendy materials Identifying and classifying Gathering and recording data to help in answering questions.	Understand the suitability of a range of materials/objects Use observations to suggest answers to questions	Identify and compare the properties of a living and non living thing Using a magnifying glass. Identify and classify.	Investigate minibeasts and other animals in the local environment. Observing closely, using simple equipment	Identify, explain and create a simple food chain Notice patterns by asking simple questions. WS Use observations to suggest answers to questions	Observe and measure how plants grow Notice patterns by asking simple questions. WS Use observations to suggest answers to questions WS Observing closely, using simple equipment
Learning Outcome 4	N/A	N/A	N/A	N/A	N/A	N/A	Test, describe, compare and identify different liquids.	Observe and describe how day length varies. Observing closely, using simple equipment Gathering and recording data to help in answering questions.	Compare different materials that are used to make soft toys and identify the ones that are most suitable.	Understand which sense is linked to which body part. Performing simple tests.	Classify animals into specific animal groups e.g. mammal, reptiles, birds etc. Identifying and classifying.	Make a herbarium to record the plant species found in the school grounds. Identify and name common wild and garden plants.	Investigate the strengths of threads WS – Performing simple tests WS Gathering and recording data to help in answering questions.	Explore and test the absorbency of materials WS – Gather and record data using simple equipment	Compare the stages of human growth from birth to adulthood. WS – Observe closely. Noticing patterns. Identifying and classifying.	Investigate a pond habitat WS – Observing closely, using simple equipment	Identify how to stay healthy, eating and exercising WS – Identifying and classifying	Investigate where seeds come from WS – Notice patterns by asking simple questions

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Learning Outcome 5	N/A	N/A	N/A	N/A	N/A	N/A	Identify materials that commonly exist as powders including sand, flour, sugar and talcum powder.	Compare changes across the four seasons Use observations to suggest answers to questions Notice patterns by asking simple questions	Explore which materials sink and which float Observe closely. Noticing patterns. Identifying and classifying.	Recognize the name of a variety of animals and their body parts. Identifying and classifying.	Identify how animals are different from each other. Identifying and classifying.	Name a variety of common wild and garden plants. To discuss features and similarities and differences.	Investigate whether objects can be squashed Observing closely, using simple equipment WS Identifying and classifying	Investigate and test how waterproof materials are Gather and record data using simple equipment	Identify the life stages of some animals and plants Research using secondary sources. Pattern seeking.	Plan and record a habitat for wildlife. Use observations to suggest answers to questions	Recognize the importance of hygiene: for food and personal hygiene Use observations to suggest answers to questions	Explore how plants grow by planting seeds. Asking and answering simple questions
	N/A	N/A	N/A	N/A	N/A	N/A	Review the materials they know and the objects that are made out of them.	Identify each season throughout the year and explain what you now know. Recognise what months of the year are part of which seasons. Use observations to suggest answers to questions	Sort fabrics into those that let light through (transparent) and those that do not. Observe closely. Use simple equipment	Describe and compare animals by identifying similarities and differences. Use observations to suggest answers to questions.	Recognise what animals eat using the words carnivore, omnivore and herbivore. Identifying and classifying.	Make a herbarium to record the plant species found in the school grounds. Identify and name common wild and garden plants. WS – Gather and record data to help in answering questions. Identify and classify plants in the school environment.	Demonstrate changing shape using art Observing closely, using simple equipment	Apply learning to design and create a perfect nappy Asking and answering simple questions WS - Gather and record data using simple equipment	Demonstrate understanding of the living things unit - creating a class museum of facts.	Investigate where worms live. Gather and record data using simple equipment & Notice patterns by asking simple questions	Discover what food different animals eat (birds – seed) Gather and record data using simple equipment	Dissect a bean seed to discover what's inside. Use observations to suggest answers to questions. WS - Observing closely, using simple equipment
Essential Vocabulary Learnt	push, pull, melt, freeze, lift, tinker, on, off, twist, tight, loose.	life cycle, baby, cub, pup, larva, grow, adult, nest, safe, strong seasons, change, cold, hot, windy, rain, snow, leaves, bark, Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, card/cardboard, hard, soft, stretchy, stiff, bendy, floppy, waterproof, ice	sight, smell, feel, touch, taste, hearing, mum, dad, brother, sister, gran, grandad, nan, water, care, light, soil, grow, seeds, bulbs, sunlight, dark,	push, pull, melt, freeze, lift, tinker, on, off, twist, tight, loose.	life cycle, baby, cub, pup, larva, grow, adult, nest, safe, strong seasons, change, cold, hot, windy, rain, snow, leaves, bark, Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, card/cardboard, hard, soft, stretchy, stiff, bendy, floppy, waterproof, ice	sight, smell, feel, touch, taste, hearing, mum, dad, brother, sister, gran, grandad, nan, water, care, light, soil, grow, seeds, bulbs, sunlight, dark,	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	Weather (sunny, rainy, windy, snowy etc. Seasons (winter, summer, spring, autumn) Sun, sunrise, sunset, day length	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	Head, body, eyes, ears, mouth, teeth, leg, foot, hand, arm, knee, elbow, chin, nose, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves To be taught in year two through Christopher Winters lesson: similar, different, sex, gender, stereotype, male, female, boy, girl, private parts, penis, vagina,	Names of animals experienced first hand from each vertebrate group	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area	Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching	Names of materials – wood, metal, plastic, glass, brick, rock, paper, cardboard Properties of materials – as for Year 1 plus opaque, transparent and translucent, reflective, non reflective, flexible, rigid	Offspring, reproduction, growth, child, young/old stages (examples chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta)	Names of local habitats e.g. pond, woodland etc. Names of micro habitats e.g. under logs, in bushes etc.	Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed	Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud Names of trees in the local area Names of garden and wild flowering plants in the local area light, shade, sun, warm, cool, water, grow, healthy
Enrichment for Cultural Capital and Deep Thinking							Lab visit Forest school	Forest school Brek visit	Forest school	Forest school VR Virtual farm visit	Forest school Visit from Animals take over- hands on with animals	Forest school	Educational videos Experiments - making slime	Performing simple tests and investigations Lab visit	Outdoor learning VR	Pond dipping Lab Visit VR	Outdoor learning	Outdoor learning VR Forest school visit