Nursery - The Natural World

Department for Education Educational Programme Development Matters (Non-statutory) Nursery Year		Our School The Natural World Curriculum	
		What?	When?
Working Scientifically	→ I will use all my senses in hands-on exploration of natural materials.	Provide interesting natural environments for children to explore freely outdoors. **Water investigative play** – open ended resources to explore pouring and movement of water; jugs, colanders, water wheels, sieves, guttering, buckets, pipettes, tubing. **Sand investigative play**; dry and wet sand, shells, stones. **Light box**; collections of objects and materials out to explore – conkers, pine cones, acorns, leaves, feathers, twigs, oak branch, pine tree, magnets, selection of shiny metal objects, glass beads, plastic buttons, translucent fabrics, mirrors, magnifiers, reflective objects and torches **Collections of materials for sensory exploration, collage and printing**; feather, poms-poms, tissue, cotton wool, wooden matchsticks, paper straws, bubble wrap, leather, wool, string, ribbon, shaving foam, gloop, playdough, clay.	Daily in continuous provision in Investigation Station and Creative Workshop and outdoor learning environment
	→ I will talk about what I see, using a wide vocabulary.	Encourage children to talk about what they see. Model observational and investigational skills. Ask out loud: "I wonder if…?" Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas. **Exploring light and dark** – Reflective materials, exploring how high visibility vests work in the dark, Using binoculars E.g. RSPB Big Birdwatch. **Exploring sound** – Percussions instruments. Investigating how to make loud and quiet sounds linked to Bonfire Night and virtual firework display. Firework display, exploring sounds, colour, smell. **Exploring fruit and vegetables** – Making fruit 'rainbow' kebabs, printing with fruit and vegetables, handling real	Autumn 2 – 'Night and Day' Spring 1 – What's Inside? Autumn 2 – 'Night and Day' Spring 2 – 'What's Outside?'

	→ I will explore how things work.	fruit and vegetables in role play shop linked to The Very Hungry Caterpillar and Handa's Surprise Provide mechanical equipment for children to play with and investigate. Suggestions: wind-up toys, pulleys, sets of cogs with pegs and boards. **Collections of open ended resources to explore forces**; balls, planks, pulleys, wheeled toys, windmills, bubble blowers.	Daily in continuous provision in Investigation Station and Creative Workshop and outdoor learning environment
Plants and Animals, including humans	→ I will plant seeds and care for growing plants. → I will understand the key features of the life-cycle of a plant. → I will understand the key features of the life-cycle of an animal.	Show and explain the concepts of growth, change and decay with natural materials. Suggestions: - plant seeds and bulbs so children observe growth and decay over time - observe an apple core going brown and mouldy over time – **Exploring the features of nursery garden oak trees;** root, trunk, bark, branches, twigs, leaves, acorns **Identify plants in the school environment;** holly, ivy plants and pine and oak trees, snowdrops, daisy, hedgerow, hawthorn, bramble **Observing the changes in seasons;** recording using photos- oak, cherry and maple trees in the school grounds over each season. Autumn and Spring treasure hunts in school grounds **Whole school planters** - Daffodil (bulb), Crocus (bulb) **Life cycle of a pea;** Planting vegetables and fruit in nursery garden. To identify and name pea, carrot, potato, cauliflower, broccoli, beans, tomato, leek, apple, pear, orange, grapes. Picking vegetables from garden to make soup. Observing decay of fruit and vegetables https://www.growyourownpotatoes.org.uk/ **Planting sunflower seed**; To know that sunflowers need soil, water and sun. To identify and name stem, leaves and petals. Help children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs.	Autumn 2 – Night and Day Autumn 2 – Night and Day Autumn 2 – Night and Day Spring 1 – What's Inside? Autumn 2 – Night and Day Spring 1 – What's Inside? Summer 1 – What's in a Rainbow? Summer 1 – What's in a Rainbow? Autumn 2 – Night and Day Spring 2 What's Outside?

		Nocturnal animals/ woodland animals. Fox, mouse, owl, bats, chameleon **Observing and identifying birds**; The Big Garden Bird Watch, making bird food and bird hide. Robin, crow, swan, **Life cycle of a butterfly**; Hatching caterpillars and butterflies, caterpillar, butterfly, Finding and naming mini-beasts on and around the oak tree To know the oak tree is home to lots of different animals and mini beasts **Explore which animals make good pets;** linked to Dear Zoo and The Tiger Who Came for Tea elephant, tiger, zebra, crocodile, bear duck, dog, cat, rabbit, fish, **Human body parts; '**I've got a body' and 'Head, shoulders knees and toes' song. Daily wake and shake and ECAM movements Plan and introduce new vocabulary related to the exploration. Encourage children to use it in their discussions, as they care for living things. Encourage children to refer to books, wall displays and online resources. This will support their investigations and extend their knowledge and ways of thinking. **Quality texts;** Owl Babies, Oliver's Wood, I am Bat, Hoot Owl, Here Comes the Sun, Bat Loves the Night, Shark in the Dark, Goodnight Moon RSPC Book of Birds, The Tiger Who Came to Tea, Dear Zoo, Little Tigers, I am a Tiger The Very Hungry Caterpillar, The Very Busy Spider, The Very Quiet Cricket, Monkey Puzzle Brown Rabbit's Colours, The Black Book of Colours, My Colourful Chameleon The Gingerbread Man, The Runaway Pancake	Spring 2 What's Outside? Spring 1 – 'What's Inside?' Autumn 1 – 'This is Me' Ongoing daily Autumn 2 - 'Night and Day' Spring 1 – 'What's Inside?' Spring 2 - 'What's Outside?' Summer 1 – 'What's in a Rainbow?' Summer 2 – 'Catch Me if You Can'

Everyday materials & Seasonal Changes	→ I can talk about the differences between materials and changes I notice. → I will explore collections of materials with similar and/or different properties.	Provide children with opportunities to change materials from one state to another. Suggestions: - cooking – combining different ingredients, and then cooling or heating (cooking) them - melting – leave ice cubes out in the sun, see what happens when you shake salt onto them (children should not touch to avoid danger of frostbite) **Observing changes during cooking and baking;** Making porridge – dry to wet mixture change Making chocolate apples for firework display – melting and setting Making pancakes – liquid to solid change Making soup – solid to soft change Beetroot and chocolate muffins – dry to liquid to solid change Making Gingerbread People – dry to dough to solid change Investigating ice – ice hangings using natural materials Explore how different materials sink and float. **Water investigative play** – open ended resources to explore pouring and movement of water; jugs, colanders, water wheels, sieves, guttering, buckets, pipettes, tubing. Explore how you can shine light through some materials, but not others. Investigate shadows. Plan and introduce new vocabulary related to the exploration, and encourage children to use it. **Exploring light and dark** – Reflective materials, exploring how high visibility vests work in the dark, Using binoculars. **Exploring sound** – Percussions instruments. Investigating how to make loud and quiet sounds linked to Bonfire Night and virtual firework display. Firework display, exploring sounds, colour, smell. Make collections of natural materials to investigate and talk about. Suggestions: - contrasting pieces of bark -	

		different types of leaves and seeds - different types of rocks - different shells and pebbles from the beach Provide equipment to support these investigations. Suggestions: magnifying glasses or a tablet with a magnifying app. **Light box**; collections of objects and materials out to explore – conkers, pine cones, acorns, leaves, feathers, twigs, oak branch, pine tree, magnets, selection of shiny metal objects, glass beads, plastic buttons, translucent fabrics, mirrors, magnifiers, reflective objects and torches **Collections of materials for sensory exploration, collage and printing**; feather, poms-poms, tissue, cotton wool, wooden matchsticks, paper straws, bubble wrap, leather, wool, string, ribbon, shaving foam, gloop, playdough, clay. **Sand investigative play**; dry and wet sand, shells, stones.	
Forces	→ I will explore and talk about different forces that I can feel.	Draw children's attention to forces. Suggestions: - how the water pushes up when they try to push a plastic boat under it - how they can stretch elastic, snap a twig, but can't bend a metal rod - magnetic attraction and repulsion Plan and introduce new vocabulary related to the exploration, and encourage children to use it. **Observing the weather;** What's the weather song and recording chart each morning and afternoon. 'Windy Day' resource box, 'Wet Day' resource box, 'Sunny Day' resource box. Outdoor learning; push and pull equipment; wheel barrows, chariot, bikes. Moving heavy objects-water, sand	Daily in continuous provision in Investigation Station and Creative Workshop and outdoor learning environment

Reception - The Natural World

Department for Education Educational Programme Development Matters (Non-statutory) Reception Year Early Learning Goals (Statutory) End of Reception		Our School The Natural World Curriculum	
		What?	When?
Working Scientifically	→ I will describe what I see, hear and feel whilst outside.	Encourage focused observation of the natural world. Listen to children describing and commenting on things they have seen whilst outside, including plants and animals. Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in. Torches, den making Firework Safety Divali lights Road Safety programme Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside. Provide children with frequent opportunities for outdoor play and exploration. Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences. Mud kitchen.	Autumn 2 What helps us to see? Summer 1-Neigbourhood Safety Programme
	→ I will explore the natural world around me, making observations and drawing pictures of plants and animals.	**Collections of natural objects in the classroom** and materials out to explore – conkers, pine cones, acorns, leaves, feathers, twigs, magnets, selection of shiny metal objects Create opportunities to discuss how we care for the natural world around us. Posters for dog dirt Somebody Swallowed Stanley. Recycling sorting station.	Daily in continuous provision in Investigation Station and Creative Workshop and outdoor learning environment Summer 1-Neigbourhood Safety Programme Summer 2 Under the Sea

	→ I will draw on my experiences and what has been read in class.	Offer opportunities to sing songs and join in with rhymes and poems about the natural world. Litter Bug song Incy Wincy Spider I had a Little Cherry Stone Beanstalk songs There's a worm at the bottom of my garden Everything's Growing song book Everything's Changing song book Wonderful Water song book After close observation, draw pictures of the natural world, including animals and plants. Draw beanstalk Bean diary Drawing Giant African Land snail Observational drawings of ladybird, spider, caterpillars, butterflies, worms Observe and interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water. **Water investigative play** – open ended resources to explore pouring and movement of water; jugs, colanders, water wheels, sieves, guttering, buckets, pipettes, tubing. **Sand investigative play**; dry and wet sand, shells, stones. **Investigation Station:** Magnets, mirrors, magnifiers **Playing with Light**; glass beads, plastic buttons, translucent fabrics, reflective objects and torches **Collections of materials for sensory exploration, collage and printing in Creative Workshop provision**; feather, poms-poms, tissue, cotton wool, wooden matchsticks, paper straws, bubble wrap, leather, wool, string, ribbon, shaving foam, gloop, playdough, clay. **Health Eating Week** → 5 a day message	Linked to topics throughout the year Spring 1 – Traditional Stories Summer 1 – What's Outside the classroom? Daily in continuous provision in Investigation Station and Creative Workshop and outdoor learning environment Spring 2 Science Week

		→ To know about sugar content and importance of NHS cleaning teeth message → NHS Hand washing → Visuals of cereal packets and other foods with high sugar → Cola experiment on eggs. → Eat well plate → Fruit and vegetables: → Growing beans, sweetcorn, lettuce. Cherries. → Making fruit salad **Vocabulary:** beans, cabbage, sweet corn, **Quality texts:** Alligator's toothache story. Alan's Big Scary Teeth When the Alligator Came to Play. Oliver's Fruit Salad book Jack and the Beanstalk	
Plants and Animals, including humans	→ I know some similarities and differences between the natural world around me and contrasting environments.	Learning facial features and body parts. Identifying similarities and difference between each other and children in other parts of the world. Focus on disabilities and appearance. Identify senses and link to body parts. I've got a body song **Vocabulary:** Nose, eyes, hands, ears, mouth, teeth, legs, feet, fingers, toes, arms, shoulders, chest, elbows, knees. **Quality Texts:** Let's Make Faces, All kinds of Families, Thelma the Unicorn **Whole school planters** - Daffodil (bulb), crocus (bulb) **Seasonal walk around the grounds** primrose, bluebells (bulb) – April. Walk to Chaddesden Wood to find maple, ash and bluebells. buttercups, rose, - plant treasure hunt Summer The hidden world of minibeasts Features of our environment. Looking under rocks and trees,	Autumn 1 What Makes Me Me Spring Summer Summer 1 What's outside our classroom window?

		Vocabulary: ash tree, cherry tree, maple spider, caterpillar, ladybird snail, worm **Quality texts:** The Ladybird Who Heard, The Bad Tempered Ladybird, The Bad Tempered Ladybird **Core books;** The Snail and the Whale, Superworm, Shark in the Park Under the sea **Vocabulary:** Shark, Whale Looking at coastal areas in comparison to Chaddesden **Focus on farm animals** Looking at farm animals in comparison to pets. Mary Coot visitor-Pigeon fancier pigeon, collard dove, Compare the difference between collared dove and pigeon. **Core book**: A Squash and a Squeeze Quality Text: Farmer Duck, The Pig in the Pond, The Great Goat Chase, Three Billy Goats Gruff **Vocabulary:** pig, cow, horse, goat, goose, sheep, mallard duck,	Summer 2 Under the Sea Spring 2 Who lives in a place like this?
Everyday materials & Seasonal Changes	→ I understand the effect of changing seasons on the natural world around me. → I understand some important processes and changes in the natural	Guide children's understanding by drawing children's attention to the weather and seasonal features. Provide opportunities for children to note and record the weather. Select texts to share with the children about the changing seasons. Sonnies Wonderful Wellies Noah's Ark play and story linked to farm focussed topic and maths A Little Bit of Winter Throughout the year, take children outside to observe the natural world and encourage children to observe how animals behave differently as the seasons change. Look for children incorporating their understanding of the seasons and weather in their play. **Cooking opportunities;** Making Jelly linked to phonics Easter nests-shredded wheat Easter nets Making bread	Spring 2 Who lives in a place like this? Autumn 1 Spring 2 Spring 2 Ongoing daily and termly

	world around me, including seasons and changing states of matter.	**Weather record every day.** Season record. **Seasonal walks** around school ground focussing on maple, ash and cherry trees. Seasonal treasure hunt (Twinkl) Season challenge cards for outdoor play (Twinkl) Record seasonal changes in floor book and diary built up over the year.	

Year 1			
National Curriculum Statutory Requirements *Children should be taught to:*		**Our School Science Curriculum**	
		What?	**When?**
Working Scientifically	→ Ask simple questions and recognise that they can be answered in different ways.	Opportunities given throughout learning – Explorify Reachout Reporter WOW experiments	Ongoing throughout the year, with specific focus during Science Week Weekly Weekly See below
	→ Observe closely, using simple equipment.	Planting seeds – observing changes over time.	How Does Your Garden Grow? Spring 2
	→ Perform simple tests.	The Snowman's Coat. The Icy Path. Ice Lollies Coloured Carnations WoW experiments	What Makes My World Wonderful? Autumn1
	→ Identify and classify.	Classifying animals, materials RSPB – Big Garden Birdwatch.	What Makes My World Wonderful? Autumn1 How Does Your Garden Grow? Spring 1
		Explorify	Weekly

	→ Use their observations and ideas to suggest answers to questions. → Gather and record data to help in answering questions.	Reachout Reporter WOW experiments Experiments, observing seasonal changes	Weekly See above What Makes My World Wonderful? Autumn1/2
Plants	→ 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.	Whole School Planters (Plant bulbs Nov-Dec) – Daffodil (bulb), Crocus (bulb), Ox Eye Daisy, Marigold, Forget-me not, Sunflower, Snap Dragon Trees – Rowan, Elder, Sycamore, Leylandii (evergreen) Refer to when conducting seasonal walks.	How Does Your Garden Grow? Spring 2
Animals, including humans	→ Identify and name a variety of common animals including fish, amphibians, reptiles, birds, and mammals. → Identify and name a variety of common animals that are carnivores, herbivores, and omnivores. → 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.	Blackbird, Sparrow, Wood Pigeon, Canada Goose, Starling, Goldfinch, Peregrine Falcon (Derby Cathedral), **British Animals –** Grass snake, Hedgehog, Squirrel, Deer, Beaver, Brown Trout, Common Frog **Non British Animals –** Hippopotamus, Wildebeest, Hyena, Lapput-Faced Vulture, Marabou Stork, Warthog, Meerkat, Polar Bear, Arctic Fox, Seal Body Parts – through 'Dem Bones' and Cross curricular with RHE Re-visit – What animals might live on a deserted island?	What Makes my World Wonderful? Autumn 1 What Makes my World Wonderful? Autumn 2 What Makes my World Wonderful? Autumn 1 Summer 2
Everyday materials	→ 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.	Comparing the house we live in to a Castle. Applying knowledge during Pirate Topic – sinking/floating. Discussion of ships made of wood/metal. Why? What is most suitable?	How Does Your Garden Grow? Spring 1 Summer 1

	→ Compare and group together a variety of everyday materials on the basis of their simple physical properties.		
Seasonal Changes	→ Observe changes across the four seasons. → Observe and describe weather associated with the seasons and how day length varies.	We reference the changes in seasons throughout the year as they happen. This has cross-curricular links with Vivaldi (The Four Seasons).	Throughout the year.

Year 2			
National Curriculum Statutory Requirements *Children should be taught to:*		**Our School Science Curriculum**	
		What?	**When?**
Working Scientifically	→ Ask simple questions and recognise that they can be answered in different ways.	Opportunities given throughout learning – Explorify Reachout Reporter WOW experiments	 Weekly Weekly Science Week
	→ Observe closely, using simple equipment.	Bird watching – RSPB Big Garden Birdwatch Planting grass seeds Planting cress seeds – observing changes over time.	Where did the Birds go? Spring 1 How does it Grow? Spring 2
	→ Perform simple tests.	Planting seeds/bulbs in different conditions (see NC objectives)	How does it Grow? Spring 2
	→ Identify and classify.	Classifying – Living, non-living, never been alive	What's Inside the Egg? Summer 2
	→ Use their observations and ideas to suggest answers to questions.	Explorify Reachout Reporter WOW experiments	Weekly Weekly Science Week
	→ Gather and record data to help in answering questions.	Experiments	Science Week How does it Grow? Spring 2

Living things and their habitats	→ 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.	**Dinosaurs** - T-Rex, Apatosaurus, Iguanodon, Plesiosaur, Velociraptor, Ichthyosaur, Pterodactyl, Triceratops Compare with animals, plants from previous learning (carnivores, herbivores, omnivores). Magpie, Great tit, Blue tit, Jackdaw, Chaffinch, Kingfisher, Toucan **British Animals –** Adder, Bats, Otters, Badger, Salmon, Trout, Common Toad **Non British Animals (Indian) –** Bengal tiger, Asian elephant, Rhinoceros, Sloth bear, Leopard, Jackal. Whole School Planters (Plant bulbs Nov-Dec) – Daffodil (bulbs), Crocus (bulbs), Cress, Grass seeds, Birds Foot Trefoil, Foxglove, Allium (bulbs) Trees - Silver Birch, Whitebeam, Oak, Norway Maple, Beech Meerkat Mail link to Food Chains – carnivores, herbivores, omnivores.	What's inside the Egg? Summer 2 Where Did the Birds Go? Spring 1 How Does It Grow? Spring 2 What's inside the Egg? Summer 2
Plants	→ 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.	Whole School Planters (Plant bulbs Nov-Dec) – Daffodil (bulbs), Crocus (bulbs), Cress, Grass seeds, Birds Foot Trefoil, Foxglove, Allium (bulbs) Trees - Silver Birch, Whitebeam, Oak, Norway Maple, Beech Seeds Experiment in different conditions Observe bulbs over time (every month) – complete recording sheet.	How Does It Grow? Spring 2
Animals, including humans	→ notice that animals, including humans, have offspring which grow into adults. → find out about and describe the basic needs of animals, including humans, for survival (water, food and air).	Cross curricular with RHE and Time for Us, R-Time Magpie, Great tit, Blue tit, Jackdaw, Chaffinch, Kingfisher, Toucan **British Animals –** Adder, Bats, Otters, Badger, Salmon, Trout, Common Toad **Non British Animals (Indian) –** Bengal tiger, Asian elephant, Rhinoceros, Sloth bear, Leopard, Jackal. **Dinosaurs** - T-Rex, Apatosaurus, Iguanodon, Plesiosaur, Velociraptor, Ichthyosaur, Pterodactyl, Triceratops Compare with animals, plants from previous learning (carnivores, herbivores, omnivores).	Ongoing Where Did the Birds go? Spring 1 What's inside the Egg? Summer 2

	→ describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Cross curricular with RHE and Time for Us, R-Time Use the school cook (Jackie) as a real life scientist. Talk about the school meals on the menu. Talk about the different food groups. Use hoops to classify and group to demonstrate a healthy plate.	Ongoing
Use of everyday materials	→ Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. → Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Wood, straw, mud, brick, cement, glass, plastic GFOL – What were the houses made out of in 1666? What are houses made of now? What are the similarities/differences? What material is more suitable and why? What materials are more flammable and why? Local Fire Brigade Visit – discuss the fire engine, suitable/non-suitable materials. Tin Forest – Recycling Experiments – How do material change their form? Pipe cleaners, twigs, cotton wool, polystyrene	Heroes and Emergencies - Great Fire Of London Autumn 2 Spring 2 How does it Grow? Science week Summer 1