Suffield Park Infant and Nursery School Progression Map for Science.

Year	Knowledge	Skills	Vocabulary
Plants			
Reception (Using their own world around them)	**Range 5** ▪ To know the names of some plants, natural and found objects e.g. daffodil, stinging nettle, dandelion, bulb, seed, dock leaf. ▪ To develop an understanding of growth, decay and changes over time. ▪ To show care and concern for living things and the environment. **Range 6** ▪ To know similarities and differences with in living things -Makes observations of plants and explains why some things occur, and talks about changes **ELG** ▪ Statutory ELG: The Natural World Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants;	▪ Observe and identify plants in their local environment (e.g. the woods) or through videos or pictures. ▪ Talk about and ask questions about what they have observed e.g. what happen when you touch a stinging nettle? ▪ Talk about some of the things they have observed such as plants, natural and found objects. ▪ Discuss similarities and differences based on their observations e.g. based on looks, loss of leaves, size of plants etc. ▪ Observe changes over time e.g. watching a plant grow, leaves falling off trees etc. ▪ To look closely at similarities, differences, patterns and change. - Read books about plants (fictional and nonfictional) - Create books/ slideshows about the changes of our plants - to use Reception garden safely following rules about what plants can and can't be eaten	Inside Outside Woods Field Garden Plant names (e.g. stinging nettle, daisy, bluebell, dandelion, daffodil) Tree bush flower vegetable herb weed leaves Change Different Same

Year 1 (Identifying)	▪ To know and be able to identify/name a variety of common wild and garden plants, including deciduous and evergreen trees ▪ To know, identify and describe the basic structure of a variety of common flowering plants, including trees.	**Observe closely using simple equipment. Using their observations and ideas to suggest answers to questions.** ▪ Observe flowers closely (possible with a magnifying glass). ▪ Using the observation to label plant structures (e.g. leaves, flowers, petals, root, bulb, seed, trunk, branch, stem.) ▪ Observe the growth of flowers and vegetables preferably that they have planted. ▪ Use the observations to compare and contrast familiar plants. **Identifying and classifying** ▪ Go into the local environment to identify plants and trees (using a identification chart for guidance). ▪ Group plants and trees and describe why they have grouped them that way. **Gather and record data to help in answering questions. Perform simple tests.** ▪ Keep a record of how plants have changed over time (e.g. leaves falling off trees, buds opening) and compare and contrast what they have found out. **Ask simple questions and recognise they can be answered in different ways.** ▪ Use the local environment throughout the year to explore and answer questions about plants growing in their habitat.	Wild plant names Plant names in local area Names of Trees in local area (e.g. oak, beech, pine, willow) Deciduous Evergreen Leaves Flowers Petals Root Seed Trunk Branch Stem Buds blossom fruit berry bark stalk
Year 2 (Learning about needs)	▪ To know about, observe and describe how seeds and bulbs grow into mature plants ▪ To know and describe how plants need water, light and a suitable temperature to grow and stay healthy.	**Observe closely using simple equipment. Using observations and ideas to suggest answers to questions.** ▪ Observe the growth of a variety of plants as they change over time from a seed or a bulb. ▪ Observing similar plants at different stages of growth and describing the changes. **Performing simple tests, gathering and recording data to help in answering questions.** ▪ Set up a comparative test to show that plants need light and water to stay healthy. **Identifying and classifying** ▪ Identify that plants grow from a seed or a bulb. Identify the differences between a bulb and a seed. **Ask simple questions and recognise they can be answered in different ways.** ▪ Use the local environment throughout the year to explore and answer questions about plants growing in their habitat.	Names of plants in local habitats and micro-habitats. Light, shade, Sun, Temperature warm, cool, water, space, grow, seed, bulb, germinate, shoot, seedling Suitable healthy

Year	Knowledge	Skills	Vocabulary

Animals including humans			
Reception (Their families and communities)	**Range 5** ▪ To know and be able to talk about some of the things they have observed such as animals. ▪ To develop an understanding of growth, decay and changes over time. ▪ To show care and concern for living things and the environment. **Range 6** ▪ Looks closely at similarities, differences, patterns and change in nature • Knows about similarities and differences in relation to living things • Makes observations of animals and explains why some things occur, and talks about changes **ELG** ▪ Statutory ELG: The Natural World Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals; - 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; - Understand some important processes and changes in the natural world around them	▪ Observe and identify animals in the local environment (e.g. the Woods) or through videos and pictures. ▪ Talk about and ask questions about what they have observed. ▪ Discuss similarities and differences. E.g. comparing two or more animals based on appearance, what they eat, where they live etc. ▪ Comments and asks questions about aspects of their familiar world such as the place they live or the natural world. - to care for class pet- feeding, cleaning, stroking, exercising) - consider animals that live near us and far away (link to blue penguin and tanka tanka topics)	Names of animals places e.g. jungle desert North Pole sea hot cold wet dry Land water environment Live old young (er/est) Friend family boy girl man woman Features - hair colour eye colour skin tall short (er/est) Relatives e.g. mother father sister brother auntie uncle gran, nanny, granddad, cousin etc Change Same Different

Year 1 (Features and senses)	▪ To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. ▪ To identify and name a variety of common animals that eat plants, meat or both ▪ To know and be able to describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets). ▪ To identify, name, draw and label the basic parts if the human body and say which part is associated with each sense.	**Asking simple questions, recognizing they can be answered in different ways. Using their observations and ideas to suggest answers to questions.** ▪ Use the local environment throughout the year to explore and answer questions about animals in their habitat. **Identifying and classifying.** ▪ Group animals according to what they eat (plants, meat or both). ▪ Group animals according to their type e.g. fish, amphibian, bird, mammals, reptiles. (Do not need to know characteristics - just a range which belong). ▪Label parts of bodies **Performing simple tests. Gathering and recording data to help answer questions.** ▪ Using their senses to compare different textures, sounds and smells. **Observing closely using simple equipment. Using their observations and ideas to suggest answers to questions.** ▪ Using their observations to compare and contrast animals at first hand or through videos and photographs. ▪Compare 2 people.	Animals Fish Amphibians Reptiles Birds Mammals feathers beak paw hooves tongue claw fin wing tail scale Plants Body Smell Taste Touch Hear See Feel Sight Senses Human body parts
Year 2 (Changes and Needs)	▪ To know that animals, including humans, have offspring which grow into adults. ▪ To know the basic needs of animals, including humans, for survival (water, food and air). ▪ To know and describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene.	**Ask simple questions and recognising that they can be answered in different ways. Using their observations and ideas to suggest answers to questions.** ▪ Ask questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions. **Observing closely using simple equipment.** ▪ Observing, through video or first-hand observation and measurement, how different animals, including humans, grow **Identifying and classifying.** ▪ Identify animals that grow into adult e.g. egg, chick, chicken egg, caterpillar, pupa, butterfly spawn, tadpole, frog lamb, sheep baby, toddler, child, teenager, adult. ▪ Name foods and identify the different food groups and group foods based on the food group they belong to e.g. carbohydrates protein etc (based on the eatwell guide).	Survive, survival Dead, never been alive, living suited, suitable, Basic needs Water, food, air, shelter warmth Names of animals and their babies (e.g. chick/chicken, kitten/cat, caterpillar/butterfly Offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person Exercise, heartbeat, breathing, Hygiene, germs, disease Diet healthy meat, fish eggs, (protein) vegetables fruit, bread, rice, pasta (carbohydrates) milk yoghurt cream (dairy) fats and sugars Food chain

Year	Knowledge	Skills	Vocabulary
Everyday materials			
Reception (Exploring, feeling)	**Range 5** ▪ Uses various construction materials, e.g. joining pieces, stacking vertically and horizontally, balancing, making enclosures and creating spaces **Range 6** ▪ Develops their own ideas through experimentation with diverse materials, e.g. light, projected image, loose parts, watercolours, powder paint, to express and communicate their discoveries and understanding. - Knows about similarities and differences in relation to materials **ELG** ▪ Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. -Safely use and explore a variety of materials	▪ Ask questions for example, "*I wonder what would happen if...*". ▪ To notice changes in properties of materials as they are transformed through becoming wet, dry, flaky or fixed. To talk about what is happening, helping them to think about cause and effect. ▪ To talk about similarities and differences between materials e.g. hard, soft, flat, bumpy. ▪ To use one-handed tools and equipment e.g. makes snips in paper with child scissors. ▪ To use simple tools to effect changes to materials. ▪ To use simple joining techniques to attach materials. ▪ To handle tools, objects, construction and malleable materials safely and with increasing control.	wet dry soggy damp ice water frozen icicle melt cold slippery smooth big small (er/est) bendy soft strong weak hot waterproof wood card plastic paper metal Same Different Change

Year 1 (Name, describe, compare and test properties)	▪ To know and be able to distinguish between an object and the material from which it is made ▪ To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock ▪ To know and describe the simple physical properties of a variety of everyday materials ▪ To know and be able to compare and group together a variety of everyday materials on the basis of their simple physical properties.	**Observe closely, using simple equipment, Identifying and classifying.** ▪ Identify the materials objects are made from. ▪ Group materials based on physical properties such as hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; . Label diagrams to show this. **Performing simple tests. Using their observations and ideas to suggest answers to questions. Gather and record data to help answer questions. Ask simple questions and recognising that they can be answered in different ways.** ▪ performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'	Materials object Wood Plastic Glass Metal Water Rock card rubber wool fabric clay elastic Hard Soft Bendy floppy Flexible stretchy stiff Rough Smooth Dull Shiny see through not see through waterproof absorbent
Year 2 (Explore the suitability of materials)	▪ To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses ▪ To know that the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	**Identify and Classify** ▪ Identify and discuss the use of different everyday materials so that they become familiar with how some materials are used for more than one thing e.g. metal can be used for coins, cans, cars etc. ▪ Identify the suitability of materials e.g. materials used to make an umbrella needs to be waterproof. **Observing closely, using simple equipment. Using their observations and ideas to ask and suggest answers to questions.** ▪ Compare the use of everyday materials in and around the school with materials found in other places. **Performing simple tests. Gathering and recording data to help answer questions.** Investigate Why is _____ most suitable for…? ▪ Investigate which materials can change shape through a force e.g. squashing.	Suitable object material use Opaque, transparent, translucent, Reflective, non-reflective, Flexible, rigid, Shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching

Year	Knowledge	Skills	Vocabulary
Seasonal Changes			
Reception (Exploring/seeing change)	**Range 5** ▪ To know about aspects of the familiar world, such as the place where they live or the natural world. ▪ To develop an understanding of changes over time. **Range 6** ▪ Looks closely at similarities, differences, patterns and change in nature **ELG** ▪ Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	▪ Observe changes over time e.g. the weather, leaves falling off trees. ▪ Talk about and ask questions about what they have observed. ▪ Discuss similarities and differences based on their observations e.g. not all trees leaves have fallen off, different colour leaves. - Compare our environment with other habitats from stories shared	Weather Rain Snow Sunny Windy Cloudy rainbow shower raining storm lightening thunder hail sleet puddles rainbow ice frost puddles Cold Hot warm Seasons Autumn Spring Summer Winter Change Same different

Year 1 (Features of seasons)	▪ To know the four seasons. ▪ To know and describe weather associated with the seasons and to know that day length varies.	**Ask simple questions. Gathering and recording data to help answer questions.** ▪ Record weather in a chart/table. ▪ Record day length. **Observe. Identify and Classify.** ▪ Children to observe changes during all four seasons e.g. leaves falling, flowers opening, weather becoming hotter/colder, minibeasts found, clothing worn.	Weather, sunny, rainy, raining, shower, windy, snowy, cloudy, hot, warm, cold, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, rainbow Seasons, winter, summer, spring, autumn, Sun, sunrise, sunset, day length
Y2			

Year	Knowledge	Skills	Vocabulary
Living things and their habitats			
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Y1			

Year 2 (Survival)	▪ To know the differences between things that are living, dead, and things that have never been alive ▪ To know that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs (shelter food water) of different kinds of animals and plants, and how they depend on each other ▪ To identify and name a variety of plants and animals in their habitats, including micro- habitats ▪ To know 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.	**Identify and classify** ▪ Pupils should compare animals in familiar habitats with animals found in less familiar habitats, for example, on the seashore, in woodland, in the ocean, in the rainforest. ▪ Sorting and classifying things according to whether they are living, dead or were never alive ▪ Sort animals into a food chain, depending on whether they are a producer/consumer. **Observing closely, using simple equipment. Using their observations and ideas to suggest answers to questions.** ▪ Observe microhabitats closely (possible with a magnifying glass). ▪ Observe (through video/pictures) and identify how animals have adapted to suit their environment.	Dead, never been alive, living, move, feed. suited, suitable Names of local habitats and a range of others (e.g. pond, woodland, rainforest etc.) Names of micro-habitats (e.g. under logs, in bushes etc.) Conditions, light, dark, shady, sunny, wet, damp, dry, hot, cold Names of living things in the habitats and micro-habitats studied

KS1 Skills are based on the 'Working Scientifically' statement on the National Curriculum. These 'Working Scientifically' skills will also be embedded through regular investigations.

Working Scientifically Progression			
NC	**Skill**	**Reception**	**Y1&2**

Asking simple questions and recognising that they can be answered in different ways	Asking questions	Ask questions to find out more.	Ask questions such as: ● what something is, ● how things are similar and different, ● the ways things work, ● which alternative is better, ● how things change how they happen ● Where appropriate, answer these questions. Answer questions developed with the teacher often through a scenario. Recognise that there are different ways in which questions can be answered.
	Plan an enquiry	Ask how and why questions Choose the right resources to carry out their plan.	Plan how to use resources provided to answer the questions using different types of enquiry such as: ● Identify headings to aid sorting ● Choose equipment ● Decide what to observe or measure
Observe closely using simple equipment.	Observe closely	Talk about what they see using a wide vocabulary. Compare quantities using more than fewer than	Explore the world around them. Make careful observations to: ● Identify ● Compare ● Consider change Use appropriate senses aided by equipment such as magnifying glasses or digital microscopes
	Take Measurements	Develop fine motor skills to use a range of tool competently safely and confidently	Begin to take measurements by: ● Comparing ● Using non-standard units ● Using standard units on a marked scale (Y2 only).
Performing simple tests Identifying and classifying	Gather/Record results	Make comparisons between objects relating to size length weight and capacity etc	Use practical resources provided to gather evidence to answer questions including carrying out: ● Tests to classify ● Comparative tests ● Pattern seeking enquiries ● Observations over time ● Using simple secondary sources (such as identification sheets)

Gathering and recording data to help in answering questions.	Present results	Write short sentences with known sounds and letter correspondence. Begin to describe a sequence of events using words as first. Draw information.	Classify using simple prepared tables and sorting rings. Record observations using: ● photographs ● videos ● drawings ● labelled diagrams ● writing Record measurements using: ● prepared tables ● pictograms ● tally charts ● blockgraphs
Using observations and ideas to suggest answers to questions	Interpret results	Articulate ideas and thoughts in well formed sentences. Use new vocabulary	Use experiences of the world around them to suggest appropriate answers to questions. With support, relate these to their evidence. Recognise 'biggest and smallest', 'best and worst' etc. from their data.