Science – Year 1

Science National Curriculum: https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study

Support for teaching and learning - planning, assessment and resources: https://drive.google.com/drive/folders/1_UTE03rMR2lb-NLXo5D2hiqPyq3YmvWO

PLAN website: https://www.planassessment.com/

Science PROGRESSION in KNOWLEDGE: https://docs.google.com/document/d/1hri61UtxP9TDHPKpMWnZq2hXl8ipUK-g/edit?usp=drive_web&ouid=104586050837987232444&rtpof=true

Science PROGRESSION in WORKING SCIENTIFICALLY: https://docs.google.com/document/d/1E2WidsJqKdX1D-br8YwHalSWyQqCds4k/edit?rtpof=true

Science PROGRESSION in WORKING SCIENTIFICALLY objectives: https://docs.google.com/document/d/1E2WidsJqKdX1D-br8YwHalSWyQqCds4k/edit

Science PROGRESSION in VOCABULARY: https://docs.google.com/document/d/1bpUKRkixOdybZDnsq0zt0u370sSKf9rj/edit?usp=drive_web&ouid=104586050837987232444&rtpof=true

Science Vocabulary by year group: https://drive.google.com/drive/folders/1h6G3G-i9PNBF-MeloVRKdO8JxfkfVQ9u

	AUTUMN	SPRING	SUMMER
Prior Learning	**Animal excluding humans** **EYFS – see curriculum** ● Nursery ● Reception **Seasonal changes:** **EYFS – see curriculum** ● Reception	**Materials** **EYFS – see curriculum** ● Nursery ● Reception	**Plants** **EYFS – see curriculum** ● Nursery
Next Steps in Learning	**Year 2** **Animals including humans** Pupils should be taught to: ● 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) ● describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	**Year 2** **Uses of everyday materials** Pupils should be taught 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 ● find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	**Year 2** **Plants** Pupils should be taught to: ● 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
Working Scientifically	During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study: ● asking simple questions and recognising that they can be answered in different ways ● observing closely, using simple equipment ● performing simple tests ● identifying and classifying ● using their observations and ideas to suggest answers to questions ● gathering and recording data to help in answering questions **Working Scientifically Resources:** https://drive.google.com/drive/folders/1NMcf5LDZ5Drykr1kof0_W2Z9rZE3zh_o **5 Lines of Enquiry Labels:** https://docs.google.com/document/d/1hd0wbQnW19h8ST0h1JyUXI4CEjawFNhf/edit		
On-going Throughout the Year	**Plants, animals and seasonal changes:** **Throughout the year**, pupils should be taught to: use the local environment throughout the year to explore and answer questions within these three units. (Zig zag book looking at the same tree- what weather is like, what animals they can see and what is happening to the tree) **Seasonal changes:** ● observe changes across the four seasons ● observe and describe weather associated with the seasons and how day length varies **Non-Statutory** *Pupils should observe and talk about changes in the weather and the seasons. Note: Pupils should be warned that it is not safe to look directly at the Sun, even when wearing dark glasses.*		
Curriculum Units and Endpoints	**Animals including humans** Pupils should be taught to: ● identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals	**Everyday materials** Pupils should be taught to: ● distinguish between an object and the material from which it is made	**Plants** Pupils should be taught to: ● identify and name a variety of common wild and garden plants, including deciduous and evergreen trees

PLAN – planning for assessment https://drive.google.com/drive/folders/1_UTE03rMR2lb-NLXo5D2hiqPyq3YmvWO **Knowledge Organisers** https://drive.google.com/drive/folders/1Eb56x2VYKka_JM8TktXA_RTEvbULBzKI	• 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 **Non-Statutory** *Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.*	• 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 • compare and group together a variety of everyday materials on the basis of their simple physical properties **Non-Statutory** *Pupils should explore, name, discuss and raise and answer questions about everyday materials so that they become familiar with the names of materials and properties such as: hard/soft; stretchy/stiff; shiny/dull; rough/smooth; bendy/not bendy; waterproof/not waterproof; absorbent/not absorbent; opaque/transparent. Pupils should explore and experiment with a wide variety of materials, not only those listed in the programme of study, but including for example: brick, paper, fabrics, elastic, foil.*	• identify and describe the basic structure of a variety of common flowering plants, including trees **Non-Statutory** *Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted. They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).*
Key Ideas **Milestone Resources** https://drive.google.com/drive/folders/1GpxFKswZLHxFeFWwPgc3vvMdoDyGI_Oa	**Animals including humans Key Ideas** • there are many different animals with different characteristics • animals have senses to help individuals survive • when animals sense things they are able to respond • animals need food to survive • animals need a variety of food to help them grow, repair their bodies, be active and stay healthy	**Everyday materials Key ideas** • there are different materials • materials have describable properties • different materials have different properties	**Plants Key Ideas** • plants usually grow from seeds and bulbs • plants need warmth, light and water to grow and survive • flowering plants make seeds to reproduce and make more plants. Some plants die after producing seeds and others live for many generations
Cross Curricular Links and Enrichment	**Animals including humans** **English:** • to write a non-fiction text about a favourite animal. • to write detailed sentences to describe animals. • to create a fact file about a group of animals –what have they all got in common? • to ask questions about our bodies and how they work **Maths:** • sort animals into groups using venn diagrams and carroll diagrams. • venn diagrams – how are we the same and how are we different? • class graph of height vs. Age.	**Everyday materials** **English:** • to write a report of findings when investigating properties of materials • explanation text – why are materials used for particular jobs • to write a biography of *John Dunlop, Charles Macintosh or John McAdam* **Maths:** • tally of materials found in the classroom • use Venn diagrams and Carroll diagrams to organise materials by their properties • measuring length when investigating materials • recording data in tables, graphs and charts	**Plants** **English:** • to write instructions • to write a science report • to create a fact file • to create an information poster • to write a poem about a daffodil • to keep a diary • to use reference books for identification **Maths:** • to measure plants and trees • to organise measurements in tables • to draw a bar chart • to draw Venn and Carroll diagrams

Working Scientifically Investigation Ideas **Milestone Resources** https://drive.google.com/drive/folders/1GpxFKswZLHxFeFWwPgc3vvMdoDyGI_Oa	**Working Scientifically** Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells. **Animals including humans** ● what sort of birds live in our local area? Set up a bird table and make observations ● minibeasts Spiders Investigation – Web hunt, Spider observations ● investigating Bees – Making models to show key features of bees, observing how bees fly, local area walk – what sort of flowers attract bees? ● how do frogs change over their lifetime? ● where do different minibeasts prefer to live? ● snail Hunt and activities (STEM Centre) ● investigating sizes of hands and feet ● investigating balancing ● how high can I jump? ● do we get taller as we get older? Class life graphing ● investigation – Month of birth and heights. ● what different tastes can I taste? ● is my hearing better with my eyes closed ● how do people use their bodies differently in different sports?	**Working Scientifically** Pupils might work scientifically by: 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?' **Everyday materials** ● what sort of materials are in our classroom? Children make observations; try to group the materials they find ● what sort of materials are in our community? Children make observations of buildings, roads and pavements; try to group the materials they find ● which materials can I squash? Which are the squashiest? ● which materials can I stretch? Which are most stretchy? Measuring length with weights handing from them – different types of plastic bags, stretchy animals. (Which superhero has the stretchiest tights?) ● Which material bends the most? Comparing plastic and wooden rulers with weights hanging from them. ● Which shape structure is the strongest? (Art Straws tower – context earthquake proof)	**Working Scientifically** Pupils might work scientifically by: observing closely, perhaps using magnifying glasses, and comparing and contrasting familiar plants; describing how they were able to identify and group them, and drawing diagrams showing the parts of different plants including trees. Pupils might keep records of how plants have changed over time, for example the leaves falling off trees and buds opening; and compare and contrast what they have found out about different plants. **Plants** ● how does a daffodil grow? Plant daffodil bulbs and monitor growth over the term ● investigate factors affecting growth of cress seeds. (Which is the best compost? How important is light for plants?) ● how can we group leaves? Observe, compare and group leaves ● which tree is the oldest? Carry out a tree survey in the local park measure circumference using string ● grow beans – monitor growth using photos and measurements. Keep a bean diary ● what trees and plants grow in our local area? Use books and the internet to identify common plants. ● what have all flowers got in common? Compare flowers. ● to investigate fruit and vegetables. ● grow carrot tops and measure growth. ● use microscopes and magnifying glasses to make close up observations of plants
Assessment for Learning and Moderation Support	**PLAN – Planning for Assessment:** https://drive.google.com/drive/folders/1_UTE03rMR2lb-NLXo5D2hiqPyq3YmvWO **Assessment in Science Lessons:** https://pstt.org.uk/unique-resources/taps/?_sft_age_ranges=five-seven **Working Scientifically Resources:** https://drive.google.com/drive/folders/1NMcf5LDZ5Drykr1kof0_W2Z9rZE3zh_o **Knowledge Organisers Year 1:** https://drive.google.com/drive/folders/1Eb56x2VYKka_JM8TktXA_RTEvbULBzKI		

Year 1 Science Vocabulary

Working Scientifically	Seasonal Changes	Animals Including Humans	Materials	Plants
observe, changes, patterns, grouping, sorting, compare, same, different, identify (name), measure, data, record results, drawing, picture, table, tally chart, present, pictogram, block chart, Venn diagram, test, investigate, explore, equipment, resources, magnifying glass, hand lens, ruler, tape measure, metre stick, pipette, syringe, spoon, teaspoon, answer questions, interpret results, scientific enquiry, pattern seeking, comparative testing, observing over time, classifying, researching	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	head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, names of animals experienced first-hand from each vertebrate group, parts of the human body senses, touch, see, smell, taste, hear, fingers, skin, eyes, nose, ears, tongue	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	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