Long Term Science Planning EYFS/KS1

Resources	**PLAN primary science assessment resources support the planning and assessment of the science National Curriculum for England - https://www.planassessment.com/** **Starters for Science: https://pstt.org.uk/resources/curriculum-materials/Starters-for-Science** **PIXL Planning, Vocab and Diagnostic resources - https://auth.pixl.org.uk/primary#!/Resources//Year%203/3.%20Science** **Ogden Trust Physics based resources from EYFS-Y6 - https://www.ogdentrust.com/resources** **Ogden Trust Resource Boxes - Teachers books: https://drive.google.com/drive/u/0/folders/1vOgSC-QWjUkXENh7KaKovvu3E5JAqqWs** **Wow Science: https://wowscience.co.uk/** **Story links: https://drive.google.com/drive/u/0/folders/1IL8c-7BNUIA5meXZbxL_2RgrNVBW9oiX** **More info on Enquiry approaches: https://pstt.org.uk/resources/curriculum-materials/enquiry-approaches** **More info on Enquiry skills:https://pstt.org.uk/resources/curriculum-materials/enquiry-skills** **Floorbook examples of scientific enquiry skills evidence: https://pstt.org.uk/resources/curriculum-materials/scientific-enquiry-skills** **Floorbook examples of types of enquiry: https://pstt.org.uk/resources/curriculum-materials/types-enquiry** **More info on TAPs assessment: https://pstt.org.uk/resources/curriculum-materials/assessment** **Teaching Science in a History context: https://pstt.org.uk/resources/curriculum-materials/cross-curricular-science-and-history** **Moderation - Examples of EXS https://drive.google.com/drive/u/0/folders/0AOwPXDNvrjH8Uk9PVA**

Year R/1/2

https://pstt.org.uk/resources/curriculum-materials/eyfs-science (Play, Observe, Ask in EYFS - provision maps based around text)

Topic	Autumn Colours of the World	Spring Fruitastic	Summer Superheroes and Princesses
Year A	**Seasonal Changes (Y1 Unit)** **Light**	**Plants**	**Everyday Materials/Uses of Everyday Materials**
EYFS Framework **Planning Doc:** https://drive.google.com/drive/u/0/folders/1yYGC_O3lASMPzS5MJCuyEslsl8xMgmeP	**Seasonal Changes** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Understand the effect of changing seasons on the natural world around them. **Vocab:** Model and encourage children to use vocabulary such as: • spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers Expose children to supplementary vocabulary such as: • hibernate, migrate, snowflake **Encouraging scientific enquiry** **Classification** • Which clothes are suitable for each season? Observing over time • How does a puddle change over time?	• Draw information from a simple map. • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different to the one in which they live. **Vocab:** Model and encourage children to use vocabulary such as: • plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest Expose children to supplementary vocabulary such as: • environment **Encouraging scientific enquiry** **Classification**	• Explore the natural world around them. • Describe what they see, hear and feel whilst outside. **Vocab:** Model and encourage children to use vocabulary such as: • ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back Expose children to supplementary vocabulary such as: • solid, liquid, gas, most suited **Encouraging scientific enquiry** **Comparative testing** • How does popcorn made in a microwave compare to popcorn made on a fire?

	• How does a snowman change as it melts? • How does the natural world change with the seasons? Researching using secondary sources • Find out about how animals behave in different seasons. • Find out about the weather and seasons. **Light** • Describe what they see, hear and feel whilst outside. **Vocab:** Model and encourage children to use vocabulary such as: • Sun, sunny, light, shadow, shady, clouds, torch, see-through, non-see- through, source, light source Expose children to supplementary vocabulary such as: • casting a shadow, pale, dark, transparent, opaque **Encouraging scientific enquiry** **Comparative testing** • Compare the shape of shadows made by different objects. **Classification** • Which objects/materials make dark shadows? Observing over time • How do the Sun and shade change during the day? • How does a toy's shadow change during the day? **Researching using secondary sources** • Find out about shadows. • Find out about rainbows.	• Name and describe plants and animals they find in the school grounds. **Pattern seeking** • Look for minibeasts in different areas of the school grounds. • Look for plants in different areas of the school grounds.	• How quickly do ice cubes melt in different areas of the playground? • How are pizza bases different when made with different flours? • How does a loaf cook differently in different tins? • How do cupcakes cook if they have different amounts of mixture? **Observing over time** • How does the block of ice change over time? • How does a snowman change over time? • How does cake mixture/bread dough change as it is cooked?
National Curriculum **Knowledge Focus** Y1 NC Objectives Y2 NC Objectives	Observe changes across the 4 seasons Describe how day lengths vary depending on season	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 and describe what plants need to grow into mature plants and to stay healthy Observe and describe how seeds and bulbs develop and grow into plants	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. Compare and group together a variety of everyday materials on the basis of their simple physical properties.

See Knowledge Matrices and EYFS Matrices for planning: https://drive.google.com/drive/u/0/folders/1yYGC_O3lASMPzS5MJCuyEslsl8xMgmeP			Know and describe, 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
Possible unit enquiry questions (linked to Ogden Trust Big Questions Explorify Enquiries see google drive links:) : https://drive.google.com/drive/u/0/folders/1VnKpDfMMkP7An6zqQOguoso_z3WYyA70 https://docs.google.com/document/d/1DA6SFoXzT-GuzIu-Qh_KaYffBK-	**Comparative testing**: In which season does it rain the most? Is there the same level of light in the evergreen wood compared with the deciduous wood? **Identifying and classifying:** How would you group these things based on which season you are most likely to see them in? How can we sort the leaves that we collected on our walk? **Observing over time (Longitudinal study):** How does the Oak tree change over the year? **Pattern seeking:** Do trees with bigger leaves lose their leaves first in Autumn? Does the wind always blow the same way? **Look at Ogden Trust Phizzi Light and Sound Teacher's handbook for KS1 Enquiry plans. Resources in the Ogden Trust boxes at Rudham and Weasenham.**	**Comparative testing:** -Which type of compost grows the tallest sunflower? -Which tree has the biggest leaves? -Do cress seeds grow quicker inside or outside? -Is there the same level of light in the evergreen wood compared with the deciduous wood? Do you need big seeds to grow big plants? **Ideas over time:** In the 1500s, tobacco plants were grown in Britain for medicine. How have our ideas about these plants changed? **Identifying and classifying:** -How can we sort the leaves that we collected on our walk? -How can we identify the trees that we observed on our tree hunt? Timewarp plants Types of leaves Brill gills Curious crown **Observing over time (Longitudinal study):**	**Comparative testing:** -Which materials are the most flexible? -Which materials are the most absorbent? - Which shapes make the strongest paper bridge? - Which material would be best for the roof of the little pig's house? **Ideas over time:** Which is the bendiest? Unusual plant pots - How are building materials different now to when Queen Elizabeth I was on the throne? - How has glass making changed since it was first made in ancient Egypt? - How have the materials that humans use for tools changed since the Stone Age? **Identifying and Classifying:** - We need to choose a material to make an umbrella. Which materials are waterproof? - Which materials will float and which will sink? - Which materials are shiny and which are dull? - Which materials will let electricity go through them, and which will not? Unusual houses

2z_pD/edit#heading=h.gjdgxs		-How does a daffodil bulb change over the year? -How does my sunflower change each week? -What happens to my bean after I have planted it? Rich pickings Spring flowers Shooting sprouts **Pattern seeking:** Do bigger seeds grow into bigger plants? Is there a pattern in where we find moss growing in the school grounds? Types of apple Winter scenes Brown and sticky **Research:** What are the most common British plants and where can we find them? How does a cactus survive in a desert with no water? What if plants could move from one place to another?	Wonderful wheels Maritime medley Synthetic selection **Observing over time (Longitudinal study):** - What happens to materials over time if we bury them in the ground? - What happens to shaving foam over time? - How long do bubble bath bubbles last for? - What will happen to our snowman? - Would a paper boat float forever? Bonkers Bubbles Liquid densities **Pattern seeking:** - Do magnetic materials always conduct electricity? - Is there a pattern in the types of materials that are used to make objects in a school? Burly bridges Functional footwear Protective measures **Research:** How are bricks made? Which materials can be recycled? How are plastics made? How have the materials we use changed over time? What if every material was rigid, or stretchy, or transparent? What if your school banned paper?
Vocab https://docs.google.com/document/d/1G7BfDHFTz9UK08xOYnxvgMKbttkWTZO2/edit#heading=h.gjdgxs	seasons seasonal change spring summer autumn winter weather sun sunshine rain snow sleet ice frost fog cloud hot cold storm sky earth night day	plants, wild plants, garden plants, evergreen trees, deciduous trees, common flowering plants, flowers, vegetables, leaf/leaves, flower, blossom, petal, stem, trunk, branch, root, seed, bulb, bud, growth, grow, habitat, local environment, leaf fall, water, light, temperature, healthy growth, survive, soil, germinate, stages of growth	everyday materials wood paper plastic metal glass water roc k brick stone fabric material foil elastic dough rubber card cardboard clay object make/made hard/soft shiny/dull stretchy/stiff rough/smooth bendy/not bendy waterproof/not waterproof transparent/opaque absorbent/not absorbent squash twist bend stretch

Scientific enquiry

Working scientifically skills document:

https://drive.google.com/drive/u/0/folders/0AOwPXDNvrjH8Uk9PVA

Asking simple questions and recognising that they can be answered in different ways
• While exploring the world, the children develop their ability to ask questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen). Where appropriate, they answer these questions. • The children answer questions developed with the teacher often through a scenario. • The children are involved in planning how to use resources provided to answer the questions using different types of enquiry, helping them to recognise that there are different ways in which questions can be answered.

Observing closely, using simple equipment
• Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses or digital microscopes, to make their observations. • They begin to take measurements, initially by comparisons, then using non-standard units.

Performing simple tests
• The children use practical resources provided to gather evidence to answer questions generated by themselves or the teacher. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time.

Identifying and classifying
• Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. • They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.

Gathering and recording data to help in answering questions
• The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. • They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs. • They classify using simple prepared tables and sorting rings.

Using their observations and ideas to suggest answers to questions
• Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. • The children recognise 'biggest and smallest', 'best and worst' etc. from their data.

	Scientific Enquiry Vocab: experience, observe, changes, patterns, grouping, sorting, classifying, compare, identify (name), data, measure, record, equipment, questions, test, investigate, explore, magnifying glass / hand lens, same, different		
TAPS Assessments (to do 2/3 of the way through the unit) Y1 NC Objectives Y2 NC Objectives			

Topic	Through the Keyhole	Wacky Races	Animal Mania
Year B	**Living Things and their Habitats**	**Space**	**Animals including Humans**
EYFS Framework **Planning Doc:** https://drive.google.com/drive/u/0/folders/1yYGC_O3lASMPzS5MJCuyEsIsI8xMgmeP	• Draw information from a simple map. • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. • Recognise some environments that are different to the one in which they live. **Vocab:** Model and encourage children to use vocabulary such as: • plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest Expose children to supplementary vocabulary such as: • environment **Encouraging scientific enquiry** **Classification** • Name and describe plants and animals they find in the school grounds. **Pattern seeking** • Look for minibeasts in different areas of the school grounds. • Look for plants in different areas of the school grounds. **Sound:** • Describe what they see, hear and feel whilst outside.	**Earth and Space** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. **Vocab:** Model and encourage children to use vocabulary such as: • Sun, Moon, Earth, star, planet, sky, day, night, space, round, light, heavy, fall, bounce, float, rise, fall, air Expose children to supplementary vocabulary such as: • sunrise, sunset, astronaut, astronomer, constellation, orbit, nocturnal, slow-motion, magnify **Encouraging scientific enquiry** **Comparative testing** • Make and testing air-propelled rockets to find out which is the 'best'. • Compare how different objects move when falling and bouncing. **Pattern seeking** • Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun. **Research using secondary sources** • Find out about the Solar System, stars and space travel. • Find out about nocturnal animals.	Recognise some environments there are different to the one in which they live. **Vocab:** Model and encourage children to use vocabulary such as: • names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice Expose children to supplementary vocabulary such as: • environment, polar regions, ocean, camouflage. **Encouraging scientific enquiry** **Classification** • Sort animals according to where they live. **Researching using secondary sources** • Learn how animals from a different habitat are cared for. • Learn about animals in a different habitat. **Humans** • Talk about members of their immediate family and community. • Name and describe people who are familiar to them. **Vocab:** Model and encourage children to use vocabulary such as: • hair (black, brown, dark, light, blonde, ginger, grey, white, long, short,

	Vocab: Model and encourage children to use vocabulary such as: • sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar Expose children to supplementary vocabulary such as: • source, crescendo, vibration, pitch **Encouraging scientific enquiry** **Comparative testing** • How does rain sound different when it lands in different containers? **Observing over time** • Listen to the siren of an emergency vehicle as it approaches and moves away.	**Forces** • Explore the natural world around them. • Describe what they see, hear and feel whilst outside. **Vocab:** Model and encourage children to use vocabulary such as: • float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow Expose children to supplementary vocabulary such as: • force, rotate, solid, liquid, gravity **Encouraging scientific enquiry** **Comparative testing** • How many cubes/small plastic animals can fit in different 'boats'? • Compare how cars move down ramps/gutters. • Compare how wheels turn when sand or water is poured through. • Compare how objects fall with and without parachutes. • Compare how different balls bounce. • Compare how things move when blown. • Compare how a marble moves through different liquids. • Compare how different paper aeroplanes fly.	straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman Expose children to supplementary vocabulary such as: • bald, elderly, wrinkles, male, female, freckles **Encouraging scientific enquiry** **Classification** • Sort images of people according to their characteristics. **Researching using secondary sources** • Find out information from visitors (dentist, nurse etc.). Pattern seeking • Are taller children faster? • Are taller children stronger?
National Curriculum **Knowledge Focus**	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.	Planets are spherical bodies made of rock. Light: Identify light sources in our sky and that the Moon is not a light source but reflects the Sun's light. Name the planets of the Solar System and know that they move round the sun.	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.

Y1 NC Objectives Y2 NC Objectives See Knowledge Matrices and EYFS Matrices for planning: https://drive.google.com/drive/u/0/folders/1yYGC_O3lASMPzS5MJCuyEslsI8xMgmeP	• 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.	(Small steps linked to later objectives in KS2)	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. 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
Possible unit enquiry question (linked to Ogden Trust Big Questions and Explorify Enquiries see google drive links:). https://drive.google.com/drive/u/0/f	**Ideas over time:** What ideas did botanist Arthur Tansley have about habitats in 1935? **Identifying and Classifying:** How would you group these plants and animals based on what habitat you would find them in? How would you group things to show which are living, dead, or have never been alive? Australian animals Mystery markings Savannah sidekicks **Pattern seeking:** What conditions do woodlice prefer to live in? Which habitat do worms prefer – where can we find the most worms? Busy bee	**Comparative testing** • Make and testing air-propelled rockets to find out which is the 'best'. • Compare how different objects move when falling and bouncing. **Pattern seeking** • Find simple patterns in how light levels and temperature change with the movement, or obscuring of, the Sun. **Research using secondary sources** • Find out about the Solar System, stars and space travel. • Find out about nocturnal animals.	**Comparative testing:** Is our sense of smell better when we can't see? Do bananas make us run faster? Do amphibians have more in common with reptiles or fish? Bird feeders How would you make a shelter for a human? **Ideas over time:** What strange ideas did Italian scientist Luigi Galvani have about animals in 1780? Why did he think that? How did Florence Nightingale use maths to help her come up with ideas to improve nursing? When the first fizzy drink machine was invented in 1775, scientist Joseph Priestley said it was the

olders/1VnKpDfMMkP7An6zqQOguoso_z3WYyA70 https://docs.google.com/document/d/1DA6SFoXzT-GuzIu-Qh_KaYffBK-2z_pD/edit#heading=h.gjdgxs	**Observing changes over time:** Sandy adventurers **Research:** How does a cactus survive in a desert with no water? How does the habitat of the Arctic compare with the habitat of the rainforest? How would you survive in a rainforest?		cure to many health problems. What ideas do scientists have about fizzy drinks today? **Identifying and classifying:** What are the names for all the parts of our bodies? How can we organise all the zoo animals? Which offspring belongs to which animal? Baby animals Hot-steppers Say cheese Spooky animals **Observing over time (Longitudinal study:** How does my height change over the year? How does a tadpole change over time? How much food and drink do I have over a week? Unexpected eggs Looking after baby **Pattern seeking:** Do you get better at smelling as you get older? Which age group of children wash their hands the most in a day? Special delivery Prehistoric shapes **Research:** How are the animals in Australia different to the ones that we find in Britain? Do all animals have the same senses as humans? What food do you need in a healthy diet and why? What do you need to do to look after a pet dog/cat/lizard and keep it healthy? What if humans hibernated? What if my bones were bendy? What if we couldn't smell things?

Vocab https://docs.google.com/document/d/1G7BfDHFTz9UK08xOYnxvgMKbttkWTZO2/edit#heading=h.gjdgxs	pond garden field park woodland sea shore river ocean forest rainforest stones rocks logs leaf litter habitat micro-habitat living dead not living alive healthy food food chain depend source of food shelter grow growth healthy		names of common animals: fish, amphibians, reptiles, birds, mammals carnivores herbivores omnivores human body senses see hear feel smell taste habitat local environment pet wild animal insect minibeast food eat head neck body arms legs ears eyes nose mouth tongue hands feet fingers toes elbows knees hair teeth grow healthy offspring adults young water air survive exercise hygiene egg chick chicken caterpillar pupa moth butterfly tadpole frog frog spawn lamb sheep calf cow foal horse

Scientific enquiry

Working Scientifically skills document:

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	Scientific Enquiry Vocab: experience observe changes patterns grouping sorting classifying compare identify (name) data measure record equipment questions test investigate explore magnifying glass / hand lens same different		
TAPS Assessments (to do 2/3 of the way through the unit)			