

East Preston Infant School

Science Progression Overview



Intent:

At East Preston Infant School, we believe that Science is an important part of a child's development and transition into adulthood. We aim for the children to become inquisitive, confident, scientific young people who can apply enquiry skills in a range of contexts to help them develop an understanding of the world that they live in.

Implementation:

Our pupils develop their early science skills and develop their natural curiosity by exploring objects, asking and answering questions through practical investigations, using a range of resources. Children are taught to predict what they think will happen; to observe and to discuss what they have seen; to solve and check answers to problems, record their findings and draw conclusions. They are then encouraged to apply what they have learnt through first hand experiences to other situations. Our commitment to Learning Outside the Classroom means that the rich environments of Forest and Beach School, alongside our school grounds, enable children to gain first hand understanding of science in the real world. Half termly units build upon prior learning and enable consolidation and deepening of key concepts so that children can apply their knowledge and skills more widely.

Intended Impact:

Through Science, our children will:

- perceive science as exciting, engaging and valuable, so that they can develop the skills to ask questions and think systematically
- become confident scientists who have the ability to investigate the world around them and are curious about natural phenomena
- make connections and apply scientific knowledge both across science lessons and the wider curriculum
- continue to deepen their respect, care and appreciation for the natural world and all its diverse environments

Science: Understanding the World

Year Group	Working Scientifically	Animals Including Humans	Living things and their Habitats	Everyday Materials	Plants	Seasonal Changes
Reception Emerging ELG	Use all their senses in hands-on exploration of natural materials Talk about what they see, using a wide vocabulary Explore the natural world around them Describe what they see, hear and feel whilst outside Explore the natural world around them, making observations and drawing pictures of animals and plants	Understand the key features of the life cycle of an animal	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	Explore and talk about different forces they can feel Talk about the differences between materials and changes they notice Explore collections of materials with similar and/or different properties Understand some important processes and changes in the natural world around them, including changing states of matter	Plant seeds and care for growing plants Understand the key features of the life cycle of a plant Begin to understand the need to respect and care for the natural environment and all living things	Understand the effect of changing seasons on the natural world around them Understand some changes in the natural world around them, including the seasons

East Preston Infant School

Science Progression Overview



Reception Key Vocabulary:	<p>light, animal, flower, plant, stick, leaf, living, bush, vegetable, weed, herb, tree, grow, hot, cold, rain, snow, season, spring, summer, autumn, winter, shadow, pattern, names of animals which live on land, in water,</p> <p>sink, float, water, rock, wood, material, melting, cooking, push, pull, force, water, rock, wood, material,</p> <p>up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce, see-through, non-see-through, wet, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, wood, plastic, paper, card, metal, strong, weak, waterproof, soggy, not waterproof, best, change, change back</p>					
Year 1	<p>Begin to ask simple questions and recognise that they can be answered in different ways</p> <p>Begin to observe closely, using simple equipment</p> <p>Begin to perform simple tests</p> <p>Begin to identify and classify</p> <p>Begin to use my observations and ideas to suggest answers to questions</p> <p>Begin to gather and recording data to help in answering questions.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, mammals and birds</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense</p>		<p>Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Describe the simple physical properties of a variety of everyday materials</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>Identify and describe the basic structure of a variety of common flowering plants (including trees)</p>	<p>Observe and describe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies</p>
Year 1 Key Vocabulary:	<p>Build upon Reception vocabulary</p>					
	<p>Questions, answers, equipment, gather, measure, record, sort, group, test, observe, compare.</p> <p>Petal, root, bulb, seed, trunk, branches, stem, stalk, fruit, blossom, petal, berry, bark, bud, deciduous, evergreen, Names of trees in the local area, common flowers and vegetable names.</p> <p>Wild animals, pets, body, neck, head, arms, elbows, legs, knees, face, ears, eyes, eyebrows, eyelashes, nose, hair, mouth, teeth, tongue, feet, toes, fingers, nails, ankle, calf, thigh, hips, waist, trunk, chest, shoulders, back, hands, wrist, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, fish, birds, mammals, carnivores, herbivores, omnivores, amphibians, reptiles,</p> <p>Senses, hear/hearing, see/seeing, touch/touching, smell/smelling, taste/tasting, rough/smooth.</p> <p>Object, material, wood, plastic, glass, metal, water, rock, hard, soft, stretchy, stiff, bendy, waterproof, absorbent, shiny/dull, transparent/ opaque, rough/smooth, breaks/tears, clay, rubber, card/cardboard, foil, elastic, fabrics, paper, brick, vary, length, properties.</p> <p>Seasons, changes, weather, hot/warm, cool/cold, sun/sunny, cloud/cloudy, wind/windy, rain/rainy, snow/snowing, hail/hailing, sleet, frost, fog/mist, ice/icy, rainbow, thunder, lightning, storm, light/dark, day/night, puddles, temperature. Sunrise, sunset, day length</p>					

East Preston Infant School

Science Progression Overview



Year Two	<p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Observe closely, using simple equipment</p> <p>Perform simple tests</p> <p>Identify and classify</p> <p>Use my observations and ideas to suggest answers to questions</p> <p>Gather and record data to help in answering questions</p>	<p>Notice that animals, including humans, have offspring which grow in to adults</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food, air)</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>Explore and compare the differences between things that are living, dead, and things that have never been alive</p> <p>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</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats</p> <p>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</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</p>	<p>Observe and describe how seeds and bulbs grow into mature plants</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</p>	
Year Two Key Vocabulary:	<p>Build upon Year 1 vocabulary</p>					
<p>Question, happen, test, record, measure, check, perhaps, observe, compare, equipment, data, classify, identify, answers, gather, results, pictogram, tally chart, block diagram, Venn diagram, table, chart, sort, group, explore, describe, order, link, secondary sources.</p> <p>Suitable/unsuitable, use/useful, object, material, property, wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, rigid, flexible, waterproof, absorbent, strong/weak, rough/smooth, reflective/non reflective, transparent/opaque/translucent, shape, changed, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching, pinch/pinching, poke/poking, roll/rolling, squeeze/squeezing, state.</p> <p>Ground, heat, living/ dead/ alive/never been alive, food chain/ producer/ predator, survival, prey, consumer</p> <p>Nutrition, protein, carbohydrate, exercise, hygiene, germ, survive, survival, water, food, air, exercise, heartbeat, breathing, disease, food types (e.g. Meat, fish, vegetables, bread, rice, pasta, dairy),</p> <p>Habitat/ micro-habitat, suited, basic needs, shelter, move, feed, water, air, survive, survival, names of micro-habitats (rock pools, in the sand, under the stones, under seaweed), conditions, light, dark, shady, wet, damp, dry, hot, cold. Bulbs/ germination/ growth/ plants/ seeds/ temperature, light, shade, Sun, warm, Cool. Water, space, grow, healthy, bulb, germinate, shoot, seedling.</p> <p>Offspring, reproduction, growth, baby, toddler, child, teenager, adult, old person, names of animals and their babies (e.g. chick/hen, kitten/cat, caterpillar/butterfly), hygiene/ germs</p>						

East Preston Infant School

Science Progression Overview



National Curriculum

The National Curriculum for Science aims to ensure that all pupils:

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Assessment:

Teachers view children's scientific explorations regularly and make on-going assessments against the learning intention.