Be a Scientist!

Science– Intent and Implementation

Our science curriculum aims to stimulate and excite children's natural curiosity and give them meaningful opportunities to explore, observe and investigate the natural and familiar world around them. We want our children to be keen scientists and enjoy investigating and finding out new things through experimentation and discovery. We aim to give our children plenty of practical and exciting opportunities to explore and learn new knowledge. Science is interwoven into our topic-based learning and these topics are chosen carefully to allow us to address local issues around personal care such as obesity and dental hygiene as well as more global issues such as recycling and looking after our planet. We look closely at animals as well as humans and learn all about their diets, habitats and life-cycles. Our curriculum also focuses on 'working scientifically' and through this children learn to use practical scientific methods of inquiry to ask questions, perform simple tests, make observations and identify and classify different objects or materials.

Oracy

Another important part of our whole school curriculum is our focus on oracy skills. In science, we support the development of oracy and communication skills to allow children to confidently talk about their familiar world and support their enquiry based learning. Pupils are introduced to new/appropriate vocabulary to enable children to talk about their observations and to ask questions.

SEND

We adapt the curriculum and supply resources to suit pupil's individual needs, including; social, emotional and mental health, physical, sensory and cognitive, so that every child can access the curriculum and further their learning. Children with complex needs including children with autism and social communication needs access the curriculum at their own level of personal development. This may not follow the continuum due to their individual learning profile, therefore they may not necessarily access all aspects of the progression map in order.

Plants - skills and knowledge		
EYFS	**Year 1**	**Year 2**

<u>3-4 year olds</u> **Plant seeds and care for growing plants.** **Understand the key features of a lifecycle of a plant and animal.** **<u>Reception</u>** **Explore the natural world around them.** **<u>ELG's</u>** **Explore the natural world around them, making observations and drawing pictures of animals and plants.** I know the names of the basic parts of a plant –leaf, stem, flower, root I know what a plant is. I know what a tree is. I know that a plant is a living thing.	**Identify and describe the basic structure of a variety of common flowering plants, including trees.** I know the names of the different parts of a plant – stem, leaf, flower, petal, root, shoot I know the function of each part of a plant. I know what a plant needs in order to survive – light, food, water and air I know the difference between deciduous and evergreen trees.	**Identify and name a variety of plants** I know the name of some common plants and trees – as listed below (all found in the school grounds) I know what a plant needs in order to survive light, food, water and air I know that the growth of a plant will be affected by a lack of water, air, food or water
Leaf, stem, root, flower, seeds, water, tree, plant.	Growing, stem, leaf, roots, petal, shoot, soil, water, sunlight, deciduous, evergreen.	Plants: daffodil, snowdrop, daisy, tulip, dandelion, rose, sunflower, bluebell. Trees: oak, silver birch, magnolia, pine. Sunlight, water.
Living things and their Habitats - skills and knowledge		
EYFS	**Year 1**	**Year 2**

<u>3-4 year olds</u> **Begin to understand the need to respect and care for the natural environment and all living things.** **<u>Reception</u>** **Recognise some environments that are different to the one in which they live.** **<u>ELGs</u>** **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.** I know there are different environments. I know I live on land. I know that a sea is a large area of water I can name some animals that live on the land and in the sea. I know common body parts – arms, legs, head, eyes, mouth, ears, feet, toes, hands, fingers, shoulders, knee, stomach	**Identify and name a variety of common animals including, fish, amphibians, mammals, reptiles and birds.** **Identify and name some common animals that are carnivores, herbivores and omnivores.** **Identify name, draw and label the basic parts of the human body and say which body part is associated with each sense.** I know the names of the 5 different animal groups- fish, amphibians, reptiles, birds and mammals I can identify some animals that belong in each animal group. I know the difference between carnivores, herbivores and omnivores. I can say what some animals eat. I know these other basic parts of the human body – elbow, ankle, wrist, throat, nostrils, heart I can say which part is associated with each sense.	**Identify and name animals in their habitats, including micro habitats.** **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.** **Identify that most living things live in habitats to which they are suited and describe how different habitats provide for basic needs of different kinds of animals and plants, and know that they depend on each other.** I know that animals live in a range of habitats. I know the names of some habitats I can describe the features of some habitats. I know the three basic needs of all living things. I know the names of the seven life processes (MRS GREN) I know the importance of exercise, hygiene and a healthy diet. I know some ways I can keep myself healthy. I know the names of the main food groups. I know what foods belong in each group. I know what makes a healthy diet. I know what a food chain is. I know that a food chain starts with a producer and ends with a predator.
Environment, sea, land, animal, human.	Mammals, amphibians, reptiles, fish, birds, omnivores, carnivores, herbivores, healthy, head, arm, leg, nose, ears, eyes, mouth, feet.	Habitats, micro habitats, living, dead, water, air, food, food chain, producer, consumer, prey, predator. MRS GREN: movement, respiration, sensitivity, growth, reproduction, excretion, nutrition. Diet, carbohydrates, protein, sugar and fats, dairy, fruit and vegetables, exercise
Everyday Materials - skills and knowledge		
EYFS	**Year 1**	**Year 2**

<u>3-4 year olds</u> **Use all their senses in hands on exploration of natural materials** **Explore collections of materials with similar and/or different properties.** **Talk about the differences between materials and the changes they notice.** **Talk about what they see using a wide vocabulary** I know what a material is. I know the names of some materials. I know how to sort materials by different criteria	**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.** I know the names of different materials I know how to sort materials according to their properties. I know the terms; opaque, soft, hard, translucent, strong, transparent, bendy, stretchy.	**Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.** I know that some materials are more suitable for different purposes I know why some materials are more suitable for a purpose. I know which materials can be recycled.
Material, paper, card, wool, fabric, plastic.	opaque, soft, hard, translucent, strong, transparent, bendy, stretchy, wood, plastic, glass, metal, water, rock	wood, plastic, glass, metal, water, rock, waterproof, suitability, sustainability, recycling.
Seasonal changes - skills and knowledge		
EYFS	**Year 1**	**Year 2**

<u>Reception</u> **Describe what they see, hear or feel whilst outside.** **Understand the effect of changing seasons on the natural world around them.** I know the names of the four seasons. I know the differences between some seasons. I can name some changes between the seasons**.**	**Observe changes across the four seasons.** **Describe the weather in Autumn, Winter, Spring and Summer.** I can order the four seasons. I know the differences between the four seasons. I can describe the environmental changes between each season. I can talk about different weather in each season.	
Autumn, Spring, Summer, Winter, cold weather, hot weather, sun and rain.	Autumn, Spring, Summer, Winter, wind, snow, thunder, rain, foggy, frosty, weather, temperature.	
Working scientifically - skills and knowledge		
EYFS	**Year 1**	**Year 2**

<u>3-4 year olds</u> **Talk about what they see using a wide vocabulary** **Explore and talk about different forces they can feel.** **<u>ELG's</u>** **Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter** I know the difference between push and pull forces I can talk about growth in different environments. I know what freezing and melting is.	**Ask simple questions and recognise that they can be answered in different ways.** **Identifying and classifying.** **Collect simple data and talk about the results.** I know how to identify and classify animals and materials. I know what a test is – when two or more things are compared against each other	**Ask simple questions and recognise that they can be answered in different ways, including use of scientific language from the national curriculum.** **Identify, group and classify.** **Perform simple comparative tests.** **Uses his/hers observations and ideas to suggest answers to questions noticing similarities, differences and patterns.** I know what makes a fair test – when only one thing is changed- the variable I can use my observations to answer questions. I can make a prediction. I can discuss my results.
Push, pull, force, grow, freeze, melt	Identify, classify, test.	Observe, sort, record, fair test, variables, identify, classify, compare, diagram, equipment.