Science Progression of Knowledge and Skills

Subject Content

EYFS Development Matters: Understanding the World (The Natural World)

- 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
- Understand the effect of changing seasons on the natural world around them

ELG: The Natural World: Explore the natural world around them, making observations and drawing pictures of animals and plants; • 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, including the seasons and changing states of matter

KS1

Working Scientifically

- asking simple questions and recognising that they can be answered in different ways
- performing simple tests
- using their observations and ideas to suggest answers to questions
- observing closely, using simple equipment
- identifying and classifying
- gathering and recording data to help in answering questions.

Year 1 pupils should be taught to:

Plants

- 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.

Animals including humans

- 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
- 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.

Materials

- 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.

Seasonal changes

- observe changes across the four seasons
- observe and describe weather associated with the seasons and how day length varies.

Year 2 pupils should be taught to:

Living things and their habitats

- 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
- identify and name a variety of plants and animals in their habitats, including micro-habitats
- 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.

Plants

- 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.

Animals including humans

- 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.

Uses of everyday materials

- 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.

	FS2	Year 1	Year 2
Working Scientifically			
Questioning	-To explore the natural world around them and ask questions.	-To explore the world around them and ask questions using sentence stems such as how and why with support.	-To explore the world around them and raise their own questions using scientific language.
Testing	-To experience different ways of finding out -To make a suggestion about what to do. -To experiment with given apparatus, carrying out a given task. -To make a simple statement referring to something that they have already encountered.	-To begin to recognise that questions can be answered in different ways. -To make suggestions about what to do and what to look for. -To carry out simple tests supported / scaffolded by adults. -To predict what might happen.	-To respond to suggestions about how to find out and communicate this with others. -To recognise the different ways in which they might answer scientific questions. -To plan simply what to do, what observations or measurements to take, recognising some hazards. -To predict the outcome of an investigation, sometimes being right.
Observing	-To describe what they see, hear and feel when outside.	-With help, to observe closely using simple equipment. -To observe changes over time with an adult modelling.	
Gathering and recording data	-To observe changes in something. -To know that information can be gathered from books. -To observe a teacher putting results into a table. -With help, to explore the use of charts prepared by a teacher, eg. cut & stick, draw, tick etc.	-To talk about results in everyday terms (eg. this one is bigger) -With support, to use simple equipment to gather data -With support, to answer questions by using secondary sources of information. -To record results through drawing and/or a simple table prepared by the teacher. -To draw on a pictogram or other chart prepared by the teacher and create class bar charts.	-To measure using standard units. -To learn how to use simple equipment (eg. hand lenses, egg timer) to gather data. -To use secondary sources of information to answer questions. -To present results in a simple table with headings initially provided by the teacher. -To use pictograms to display results, draw bar charts with help.
Identifying and classifying	-To identify what is the same and what is different. -To describe or show what they did and what happened.	-To make simple comparisons and groupings that relate to differences and similarities between objects, materials and living things. -To draw or simple state what happened. -To begin to group and classify.	-To use simple features to compare objects, materials and living things and decide how to sort and group them. -To compare results, looking for similarities and differences. With guidance, begin to notice patterns and relationships. -To group and classify in different ways.
Suggesting answers to questions	-To talk about what happened. -To listen to the teacher using scientific vocabulary.	-To say what their observations show. They can draw simple conclusions and explain what they did. -To begin to use simple scientific vocabulary.	-To use their observations and ideas to suggest answers to questions. Talk about what they have found out and how they have found it out. -To use scientific vocabulary competently and appropriately.

	FS2	Year 1	Year 2
Knowledge			
Plants	• 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. • Explore the natural world around them, making observations and drawing pictures of plants (ELG	• 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.	• 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.
Animals including humans	• Name the different parts of a face. • Name basic parts of the human body and say which part of the body is associated with each sense • Understand the key features of the life cycle of an animal • Begin to understand the need to respect and care for the natural environment and all living things. • Explore the natural world around them, making observations and drawing pictures of animals (ELG)	• 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 • 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.
Living things and their habitats	-		• 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 • Identify and name a variety of plants and animals in their habitats, including micro-habitats • 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.
Materials	• Use all their senses in hands-on exploration of natural materials. • Identify some common materials and begin to describe their properties. • Explore collections of materials with similar and/or different properties. • Talk about the differences between materials and changes they notice. •	• 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.	• 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.
Seasonal Change	• Observe changes across the four seasons • Observe and describe weather associated with the seasons.	• Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies.	-

How we will implement Science at Hetts Lane

• Planned teaching of science each **half term** through enquiry lessons in EYFS, which is progressive, and provide purpose and meaning for children. For KS1 Science is taught weekly, this can include cross curricular links to support chidlren in seeing the importance of science across everyday life.
• All children have opportunities to explore the natural world around them through our outdoor area, in particular nursery garden. In KS1 school visits often include a science theme.
• Children will use science in their **classrooms** as part of their daily life at school to apply skills taught. For example, continuous provision, and independent learning activities.
• Children in FS2 access **Forest School** clock of sessions every year to ensure additional coverage of seasonal change, plants and habitats across the school.
• **Evidence** of science can be seen in individual pupil science books (in KS1), class learning journey displays and on medium term planning and enquiry organisers.
• Each half term, children have opportunity to develop their working scientifically skills. This is in the form of a **science investigation** and fair testing, but also provides opportunity to observe over time, research, sort/classify and noticing patterns.
• Children are encouraged regularly to ask and answer their own questions through **investigations** designed by their class/teacher/group.
• Our school library, (including IT; laptops and iPads) and books, is used as secondary sources of information.
• Our whole school annual **Science week** contributes towards increasing our science capital and highlighting the importance of science in everyday life and future careers.
• Our whole school annual **Sports week** also provide opportunity to embed knowledge and skills linked to the human body.
• Our **daily class routine** includes teaching of seasonal change and weather, including reading scales for temperature as appropriate.