

Progression in Science at Thurnham CE Infant School through an Empowering Curriculum 2022-23

“At Thurnham our Empowering Curriculum will give pupils the key skills that they need to flourish; Brain Power, Resilience and Independence.”

While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression.

EYFS	YEAR 1	YEAR 2
<p>N.B. Aspects of Science are found within the ‘The World’ which is one of the seventeen areas of learning in the Early Years Foundation Stage. It can be found within the ‘Understanding the World’ strand.</p> <p>‘Children know about similarities and differences in relation to...objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.’</p> <p>Some children may exceed the Early Learning Goal; these children will work towards exceeding the ELG. In this case the objectives are:</p> <p>‘Children know that the environment and living things are influenced by human activity. They can describe some actions which people in their own community do that help to maintain the area they live in. They know the properties of some materials and can suggest some of the purposes they are used for. They are familiar with basic scientific concepts such as floating, sinking, experimentation.’</p> <p>Working scientifically</p> <p>Making observations, explaining why things occur, talking about changes.</p> <p>These will include the characteristics of effective learning;</p>	<p>Plants:</p> <p>‘Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.’</p> <ul style="list-style-type: none"> • I can name a variety of wild plants • I can name a variety of garden plants • I know the difference between deciduous and evergreen trees, and can name some <p>‘Identify and describe the basic structure of a variety of common flowering plants, including trees.’</p> <ul style="list-style-type: none"> • I can identify and describe the basic structure of a variety of common flowering plants • I can identify and describe the basic structure of a variety of common flowering trees <p>Working scientifically</p> <p>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.</p>	<p>Plants:</p> <p>‘Observe and describe how seeds and bulbs grow into mature plants’</p> <ul style="list-style-type: none"> • I can talk about how seeds and bulbs grow into plants, and the changes that happen <p>‘Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy’</p> <ul style="list-style-type: none"> • I can find out why plants need water, light and a suitable temperature and how this affects how they grow. • I can talk about why plants need water, light and a suitable temperature and how this affects how they grow. <p>Working scientifically</p> <p>Pupils might work scientifically by observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb, or observing similar plants at different stages of growth; setting up a comparative test to show that plants need light and water to stay healthy.</p>

Making links, choosing ways of doing things, keeping trying, having their own ideas, finding new ways, using what they already know to learn new things.

Animals (Including Humans):

'Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals'

- I can identify and name common fish e.g. eel, bass and haddock
- I can identify and name some amphibians e.g. frogs, toads and newts
- I can identify and name some reptiles e.g. alligators, crocodiles and snakes
- I can identify and name some common birds e.g. pigeons, robins and starlings
- I can identify and name some common mammals e.g. elephants, tigers and pandas

'Identify and name a variety of common animals that are carnivores, herbivores and omnivores'

- I know the difference between a carnivore, herbivore and omnivore
- I can identify some carnivores e.g. lions
- I can identify some herbivores e.g. cows
- I can identify some omnivores e.g. hedgehogs

'Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)'

- I can describe the structure of a variety of animals
- I can compare the structure of fish, amphibians, reptiles, birds and mammals

'Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.'

- I can identify / name / draw / label basic parts of the human body
- I can name the senses
- I can say which part of the body is used for which sense e.g. eyes for seeing, ears for hearing

Working scientifically

Pupils might work scientifically by using their observations to compare and contrast animals at first hand or through videos and photographs, describing

Animals including humans:

'Notice that animals, including humans, have offspring which grow into adults'

- I can name offspring and the animal which it will grow into
- I know that babies grow into humans

'Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)'

- I can say what the basic needs of animals are
- I can say what living things need to survive

'Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.'

- I can say why exercise is important
- I can talk about the importance of eating healthily and the things which contribute to this
- I can talk about the importance of good hygiene and can say what this involves e.g. washing, brushing teeth etc.

Working scientifically

Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.

Living things and their habitats:

'Explore and compare the differences between things that are living, dead, and things that have never been alive.'

- I can identify the difference between things that are and not 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'

- I can say what a habitat is

how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.

- I can talk about how animals are suited to their habitats
- I can talk about how plants are suited to their habitats
- I can talk about what habitats provide from animals and plants

'Identify and name a variety of plants and animals in their habitats, including microhabitats'

- I can name some animals and plants in their habitats
- I can say what a microhabitat is e.g. a rotting log or a pond

'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'

- I can say what a food chain is
- I can identify the producer, consumers etc.
- I can describe how animals get their foods from plants

Working scientifically

Pupils might work scientifically by: sorting and classifying things according to whether they are living, dead or were never alive, and recording their findings using charts. They should describe how they decided where to place things, exploring questions like: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions. They could construct a simple food chain that includes humans (eg, grass, cow, human). They could describe the conditions in different habitats and microhabitats (under log, on stony path, under bushes); and find out how the conditions affect the number and type(s) of plants and animals that live there.

Everyday Materials

'Distinguish between an object and the material from which it is made'

- I can identify materials and say what they are made from

'Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.'

- I can name some everyday materials e.g. metal, glass and fabric

Use 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.'

- I can compare materials for everyday purposes e.g. what material might be best for rainy weather or what might be used to build a house and why.

'Describe the simple physical properties of a variety of everyday materials'

- I understand what properties means
- I can describe the properties of some materials

'Compare and group together a variety of everyday materials on the basis of their simple physical properties.'

- I can group together materials based on their properties

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?'

Seasonal Changes:

'Observe changes across the four seasons'

- I can identify Spring, Summer, Autumn and Winter
- I can talk about the changes which happen in each of the seasons e.g. leaves

'Observe and describe weather associated with the seasons and how day length varies.'

- I can say what weathers may usually occur during these seasons
- I can talk about the changes which happen to the length of the day during the seasons

Working scientifically

Pupils might work scientifically by: making tables and charts about the weather; and making displays of what happens in the world around them, including day length, as the seasons change.

'Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.'

I can discuss how the shape of a solid object might be changed and how.



Working scientifically

Pupils might work scientifically by: comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs); observing closely, identifying and classifying the uses of different materials, and recording their observations.

"WITH GOD WE LEARN TO LOVE AND LOVE TO LEARN."