

Upminster Infant School



Science Curriculum Progression and Overview

SCIENCE LONG TERM MAP

| | AUT 1 | AUT 2 | SPR 1 | SPR 2 | SUM 1 | SUM 2 |
|--------|--|---|---|--|--|---|
| EYFS | <p><i>My Family</i></p> <p><i>Understanding of the world</i></p> | <p><i>Animals and regions of the world</i></p> <p><i>Understanding of the world</i></p> | <p><i>Forces & Movement</i></p> <p><i>Super senses</i></p> <p><i>Understanding of the world</i></p> | <p><i>Space</i></p> <p><i>Understanding of the world</i></p> | <p><i>Mini-beasts</i></p> <p><i>Understanding of the world</i></p> | <p><i>Transports</i></p> <p><i>Understanding of the world</i></p> |
| Year 1 | Seasonal Changes – ongoing throughout year | | | | | |
| | | <p>Animals Including Humans</p> | <p>Everyday Materials</p> | | <p>Plants</p> | |
| Year 2 | <p>Use of Everyday Materials</p> | <p>Use of Everyday Materials</p> | <p>Animals Including Humans</p> | <p>Living Things and their Habitats</p> | <p>Plants</p> | |

Science Progression National Curriculum

| | Aut 1 | Aut 2 | Spr 1 | Spr 2 | Sum 1 | Sum 2 |
|---------------|--|--|---|--|---|-------|
| Year 1 | Seasonal Changes <ul style="list-style-type: none"> To observe changes across the four seasons To observe and describe weather associated with the seasons and how day length varies | | | | | |
| | | Animals Including Humans <ul style="list-style-type: none"> To identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals To identify and name a variety of common animals that are carnivores, herbivores and omnivores To describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) To identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense | Everyday Materials <ul style="list-style-type: none"> To distinguish between an object and the material from which it is made To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock To describe the simple physical properties of a variety of everyday materials To compare and group together a variety of everyday materials on the basis of their simple physical properties. | | Plants <ul style="list-style-type: none"> To identify and name a variety of common wild and garden plants, including deciduous and evergreen trees To identify and describe the basic structure of a variety of common flowering plants, including trees | |
| Year 2 | Uses of everyday Materials <ul style="list-style-type: none"> To identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses To find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. | | Animals Including Humans <ul style="list-style-type: none"> To notice that animals, including humans, have offspring which grow into adults To find out about and describe the basic needs of animals, including humans, for survival (water, food and air) To describe the importance for humans of exercise, eating the right amounts of different | Living Things and their Habitats <ul style="list-style-type: none"> To explore and compare the differences between things that are living, dead, and things that have never been alive To 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 | Plants <ul style="list-style-type: none"> To observe and describe how seeds and bulbs grow into mature plants To find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. | |

| | | | | | |
|-----|--|-----------------------------|---|--|--|
| | | types of food, and hygiene. | depend on each other To identify and name a variety of plants and animals in their habitats, including microhabitats <ul style="list-style-type: none"> To 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. | | |
| KS1 | Working Scientifically <ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. | | | | |

Science Curriculum Overview

Target Tracker I can statement; **Target Tracker Working Scientifically**; *Child Friendly I can statements*

| | Aut 1 | Aut 2 | Spr 1 | Spr 2 | Sum 1 | Sum 2 |
|---------------|--|---|--|-------|--|-------|
| Year 1 | <p>Seasonal Changes</p> <ul style="list-style-type: none"> • I can explain changes through autumn, winter, spring and summer - I can spot the signs of autumn/winter/spring/summer in my local area - I can explain what we wear in winter/summer - I can say what happens to trees and plants in autumn/winter/spring/summer • I can describe weather in autumn, winter, spring and summer and that the days get longer and shorter - I can say how the weather changes - I can say what happens to the length of days in the winter/summer - I can say what happens to the length of nights in the winter/summer - I can explain what we wear in winter/summer | | | | | |
| | <p>Enquiry Type observing over time; pattern seeking;</p> | | | | | |
| | <p>Vocabulary Seasons - Autumn, winter, spring, summer, month; Weather – sunny, rainy, windy, snowy etc; Sun, sunrise, sunset, day, length.</p> | | | | | |
| | | <p>Animals Including Humans</p> <p>Key Question: How many body parts can I name?</p> <ul style="list-style-type: none"> • I can name, draw and label the basic parts of the human body and say which part of the body is to do with each sense. - I can name parts of my body - I can label a drawing of my body with the names of my body parts <p>Key Question: What are my senses and where are they?</p> <ul style="list-style-type: none"> • I can name, draw and label the basic parts of the human body and say which part of the body is to do with each sense. - I can name the senses - I know what my senses do | <p>Everyday Materials</p> <p>Key Question: How many materials can I name?</p> <ul style="list-style-type: none"> • I can name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock - I can identify and name different materials <p>Key Question: What is the difference between objects and materials?</p> <ul style="list-style-type: none"> • I can tell the difference between an object and the material from which it is made - I can name objects - I can name the materials which objects are made from - I can explain the difference between objects | | <p>Plants</p> <p>Key Question: What plants grow in our school?</p> <ul style="list-style-type: none"> • I can name a variety of common wild and garden plants, including deciduous and evergreen trees - I can find plants in the local area and identify them by a picture - I can say the name of some wild plants that I see • I can collect and record data to help answer questions. (WS) - I can collect information - I can use information to answer a question <p>Key Question: What flowers grow in our school?</p> <ul style="list-style-type: none"> • I can name a variety of common wild and | |

- I know which body parts I use for each sense
- I can name things I do with my senses

Key Question: How can I use my senses?

- I can do tests (WS)
- I can use my senses to do tests
- I can collect and record data to help answer questions (WS)
- I can gather information to answer a puzzle

Key Question: How can we sort animals?

- I can spot and name a variety of common animals.
- I can name some animals
- I can say something that is the same about 2 animals
- I can say something that is different about 2 animals
- I can ask questions and know they can be answered in different ways (WS)
- I can say a way how some animals can be sorted into groups
-

Key Question:

- I can describe and compare the structure of a variety of common animals.
- I can say the names for animal body parts
- I can say things that are the same about 2 animals

- I can describe some everyday materials
- I can choose words which describe how materials look
- I can choose words which describe how materials feel

Key Question: How are materials the same or different?

- I can make groups of materials based on what they are made of
- I can sort materials by how they look and feel
- I can name and group (WS)
- I can sort materials

Key Question: Which Little Pig chose the best building material?

- I can use my observations and ideas to suggest answers to questions. (WS)
- I can say why a material is better than another
- I can do tests (WS)
- I can test different materials

garden plants, including deciduous and evergreen trees

- I can say the name of some garden plants that I see
- I can name some garden plants I remember

Key Question: How can I name a tree?

- I can name a variety of common wild and garden plants, including deciduous and evergreen trees
- I can match leaves I have collected to picture of leaves
- I can use an information sheet to name trees the leaves belong to
- I can watch closely using equipment(WS)
- I can look closely at the leaves and match the description to what I see.
- I can name and group (WS)
- I can sort deciduous and evergreen leaves.

Key Question: What does a plant look like?

- I can name and describe the basic structure of a variety of common flowering plants, including trees
- I can label the parts of a plant
- I can say the names of parts of trees

Key Question: How do plants grow?

| | | | | | | |
|---------------------|--|---|--|---|---|--------------|
| | | <ul style="list-style-type: none"> - I can say things that are different about 2 animals <p>Key Question: What do animals eat?</p> <ul style="list-style-type: none"> • I can spot and name a variety of common animals that are carnivores, herbivores and omnivores. - I can say what is meant by carnivore, herbivore and omnivore - I can name some animals that are carnivores, herbivores and omnivores • I can name and group (WS) - I can sort animals into carnivores, herbivores and omnivores | | | <ul style="list-style-type: none"> • I can watch closely using equipment. (WS) - I can talk about how my bean has grown - I can measure my bean • I can use my observations and ideas to suggest answers to questions. (WS) - I can say three things my bean needs to grow | |
| Enquiry type | | classifying and grouping; identifying comparative and fair testing | classifying and grouping; identifying pattern seeking; | | observing over time; identifying, researching using secondary sources | |
| Vocab | | <p>Key Vocabulary</p> <p>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, Names of animals</p> <p>Parts of body</p> <p>Senses – touch, see, smell, taste, hear, fingers, skin, eyes, nose, ear, tongue</p> | <p>Key Vocabulary</p> <p>Object, Material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbant, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through</p> | | <p>Key Vocabulary</p> <p>Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, Names of trees in the local area, names of flowers in the local area</p> | |
| Year 2 | Aut 1 | Aut 2 | Spr 1 | Spr 2 | Sum 1 | Sum 2 |
| | <p>Uses of Everyday Materials</p> <p>Key Question: What am I made of?</p> <ul style="list-style-type: none"> • I can say why I would choose a material for a particular job - I can say what material an object is made from by drawing and labelling a diagram - I can identify its properties | | <p>Animals Including Humans</p> <p>Key Question: Whose baby am I?</p> <ul style="list-style-type: none"> • I can explain that animals, including humans, have babies which grow into adults. | <p>Living Things and their Habitats</p> <p>Key Question: Is it alive?</p> <ul style="list-style-type: none"> • I can explain the differences between things that are living, | <p>Plants</p> <p>Key Question: How does your garden grow?</p> <ul style="list-style-type: none"> • I can explain how seeds and bulbs grow into plants - I can follow instructions to plant a seed and a bulb | |

- I can make links between its properties and its particular use

Key Question: How are everyday materials used outside?

- **I can name and group.**
 - I can group similar uses of materials together
- **I can collect and record data to help answer questions.**
 - I can make observations
 - I can record what I see to answer a question

Key Question: why are windows made of glass?

- **I can say why I would choose a material for a particular job**
 - I can explain why different materials can be used to make the same object
 - I can explain which properties make some materials suitable for different purposes
 - I can explain which properties make some materials unsuitable for different purposes

Key Question: How can I change it?

- **I can explain how objects made from some materials can be changed by squashing, bending, twisting and stretching**
 - I can describe an action which changes the shape of an object
 - I can use words such as flexible and/or stretchy to describe materials that can be changed in shape
 - I can use words such as stiff and/or rigid to describe materials that cannot be changed in shape

- I can draw an animal as a baby and as an adult
- I can say how the animal will change as it grows
- **I can name and group (W/S)**
 - I can name some animal babies
 - I can say which animals some babies will grow into

Key Question: Will I get faster as I get older?

- **I can explain that animals, including humans, have babies which grow into adults.**
 - I can name the different stages in the human timeline
 - I can describe what humans are like during different stages of their lives
- **I can do tests (W/S)**
 - I can set up a test to find out if children are faster when they are older
 - I can collect and interpret results

Key Question: What do we need to survive?

- **I can explain the needs of animals, including humans, for survival.**
 - I can say the three things humans need to stay alive
 - I can say how an animal gets air, food and water
- **I can ask questions and know they can be answered in different ways. (W/S)**

dead and things that have never been alive

- I can find a range of items outside that are living, dead and never lived
- I can explain some life processes
- I can explain how life processes can tell us if something is living, dead or has never been alive

• **I can name and group (W/S)**

- I can sort items into alive, dead or never lived

Key Question: What lives in our school?

- **I can name some plants and animals in their habitats including micro-habitats.**
 - I can draw a map of a local habitat
 - I can draw and label trees and plants
 - I can record animals that live there

Key Question: What is a Micro-habitat?

- **I can name some plants and animals in their habitats including micro-habitats.**
 - I can find and identify microhabitats
 - I can identify and name the mini beasts I find there
- **I can collect and record data to help answer questions.(W/S)**

- I can suggest how to care for a plant so it grows well
- **I can do tests.(W/S)**
 - I can set up a simple test to show what plants need to grow well
 - I can predict which plants will grow well and which will not

Key Question: Are plants living things?

- **I can explain how seeds and bulbs grow into plants**
 - I can describe the stages in the life cycle of a plant
 - I can order the life cycle of a plant
- **I can use my observations and ideas to suggest answers to questions (W/S).**
 - I can explain that some plants are living things

Key Question: What do plants need to grow?

- **I can describe how plants need water, light and a suitable temperature to grow and stay healthy.**
 - I can explain what plants need to grow
 - I can give reasons for my answers
- **I can collect and record data to help answer questions.(W/S)**
 - I can measure the growth of plants with a ruler
 - I can record the growth of plants by drawing or writing

- I can ask questions about how to look after a pet that I have chosen
- I can find out the answer to a question

Key Question: How can I stay healthy?

- I can explain the importance of exercise, eating healthily and keeping clean.
- I can say which foods are healthy
- I can name foods in each section of the Eatwell plate
- I can design a menu that has the right amount of each food type
- I can use my observations and ideas to suggest answers to questions (W/S)
- I can say what is healthy about my diet
- I can say how I would improve my diet

Key Question: Why do I need to exercise?

- I can explain the importance of exercise, eating healthily and keeping clean.
- I can say why humans need to exercise
- I can talk about the effect exercise has on the human body
- I can collect and record data to help answer questions (W/S)
- I can record information about exercise
- I can use the information to answer questions

- I can record information about mini-beasts
- I can present my findings in a pictogram
- I can use my findings to compare 2 microhabitats

Key Question: Why don't polar bears live on the equator?

- I can explain that most living things live in habitats which suit them and depend on each other
 - I can describe the conditions of different habitats
 - I can identify the features of different animals
 - I can suggest how an animal survives in its habitat
 - I can identify the different needs of different plants and animals
- I can ask questions and know they can be answered in different ways. (W/S)
- I can ask questions about different habitats
- I can use research to find answers to questions

Key Question: What is the circle of life?

- I can explain how animals get their food from plants and other animals using a simple food chain.
 - I can name some sources of food
 - I can give examples of carnivores,

| | | | | | |
|---------------------|--|---|---|---|--|
| | | <p>Key Question: Why do I have to wash?</p> <ul style="list-style-type: none"> • I can explain the importance of exercise, eating healthily and keeping clean. <ul style="list-style-type: none"> - I can name things I do to keep myself clean - I can give reasons why humans should keep themselves clean • I can watch closely using equipment.(W/S) <ul style="list-style-type: none"> - I can investigate washing hands with glitter gel - I can use a magnifying glass to look closely - I can record what I see | <p>herbivores and omnivores</p> <ul style="list-style-type: none"> - I can order living things in a food chain | | |
| Enquiry type | <i>classifying and grouping; identifying pattern seeking;</i> | <i>classifying and grouping; simple comparative tests secondary sources of information observing</i> | <i>classifying and grouping; secondary sources of information</i> | <i>simple comparative tests noticing patterns observing changes</i> | |
| Vocab | <p>Key Vocabulary Names of materials – as year 1 Properties of materials – as year 1 plus opaque, transparent, translucent, reflective, non-reflective, flexible, rigid</p> | <p>Key Vocabulary Offspring, reproduction, growth, child, young/old, stages (i.e. chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (meat, fish, vegetables, bread, rice, pasta)</p> | <p>Key Vocabulary Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed Names of local habitats – pond, woodland etc Names of micro-habitats – under logs, bushes etc</p> | <p>Key Vocabulary As for Year 1 plus Sunlight, water, temperature, nutrition, germination, sprout,</p> | |

During years 1 and 2 pupils will be taught to use the following practical scientific methods, processes and skills through the units of work within our science curriculum.

| | <u>Year 1</u> | <u>Year 2</u> |
|-------------------------------|--|---|
| Working Scientifically | <ul style="list-style-type: none"> • I can ask questions and know they can be answered in different ways • I can look closely, using equipment. • I can do tests. • I can name and group. • I can use my observations and ideas to suggest answers to questions. • I can collect and record data to help answer questions. | <ul style="list-style-type: none"> • I can ask questions and know they can be answered in different ways. • I can watch closely using equipment. • I can do tests. • I can name and group. • I can use my observations and ideas to suggest answers to questions. • I can collect and record data to help answer questions. |