# EYFS Curriculum Objectives – Science (UTW)

## INTENT

In Reception we capitalise on children's thrill of discovery and their instinctive desire to know, understand and find out more by:

- Providing freedom to explore, investigate and experiment using the five senses
- Cultivating children's curiosity about how and why things work and how things change
- Encouraging questioning, testing out of idea and drawing conclusions
- Fostering children's excitement and pleasure in the awe and wonder of natural phenomena

## Knowledge and Skills

| Curriculum Objectives | I Know… | Because I can… | In Year 1 I will learn to… |
|---|---|---|---|
| To Understand that changes occur in the natural world through the seasons<br><br>**(link to seasonal changes; working scientifically)** | That there are four seasons across the year;<br><br>That the seasons affect the temperature;<br><br>Plants and animals react to seasons in the way they grow and their natural life cycles;<br><br>The length of day and night changes depending on the season;<br><br>Know the vocabulary of the four seasons | Start to use the vocabulary associated with the seasons.<br><br>Comment on the weather and temperature making simple observations linked to seasonal understanding.<br><br>Comment on what I can see in my local environment such as flowers in bud or leaves falling from trees and make connections, linking it to my understanding of seasonal change.<br><br>Comment on characters, settings and events in stories that are linked to seasonal characteristics and changes.<br><br>Collect and examine evidence of changing seasons talking about what I see. | **(Working Scientifically)**<br><br>Ask simple questions and recognise that they can be answered in different ways<br><br>Observe closely, using simple equipment perform simple tests<br><br>identify and classify<br><br>Use observations and ideas to suggest answers to questions<br><br>Gather and record data to help in answering questions<br><br>**(Plants)**<br><br>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees<br><br>Identify and describe the basic structure of a variety of common flowering plants, including trees<br><br>**(Animals, including humans)**<br><br>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals<br><br>Identify and name a variety of common animals that are carnivores, herbivores and omnivores |
| Understand there are similarities and differences in the natural world.<br><br>**(link to Plants; Animals Including Humans; working scientifically)** | That the natural environment and world around supports life and growth<br><br>How to respect and care for the natural environment and all living things;<br><br>How to care for their immediate environment and the wider world;<br><br>That there are different natural environments around the world that have specific characteristics such as deserts, forests, islands, aquatic habitats | Communicate orally, in simple descriptions and explanations eg. about a farm, which animals live there / plants grow there and the job of the farmer.<br><br>Talk about my knowledge, eg that some animal's habitats need certain conditions such as polar bears prefer to live in cold climates and certain marine life live in different parts of the Ocean. Demonstrate this through their small world play and storytelling.<br><br>Take part in activities such as recycling in school, traffic calming posters and develop an eco-conscious approach to classroom practices and resources.<br><br>Ask and answer questions about what I have observed, e.g. Who lives where? Why do some animals live in cold places and some do not? Why is plastic harmful? How can we help to keep our planet clean? | |
| That there are key words/vocabulary associated with science | Know a range of scientific words such as habitat, life cycle, metamorphosis etc (linking to Y1 NC) | Talk about the work / activity/ experience I am having.<br>Organising my thinking.<br>Explain how things work and why they might happen. | |

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| **(link to working scientifically)** | Know a range of words that relate to scientific enquiry such as observe, explore, results, investigate, explain (linking to Y1 NC)<br><br>Be able to name a range of equipment that they use such as pooter, magnifying glass, incubator | Use appropriate vocabulary for science specific equipment and processes. Eg. understanding a 'habitat' is what an animal lives (finds food and shelter) | Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)<br>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense<br><br>**(Everyday materials)**<br><br>Distinguish between an object and the material from which it is made<br><br>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock<br>describe the simple physical properties of a variety of everyday materials<br><br>Compare and group together a variety of everyday materials on the basis of their simple physical properties<br><br>**(Seasonal changes)**<br><br>Observe changes across the 4 seasons<br><br>Observe and describe weather associated with the seasons and how day length varies |
| That the world is made up of different animals, plants and materials<br><br>**(link to plants, animals including humans; everyday materials; working scientifically)** | That some things are living and others are non- living;<br><br>How to plant seeds and look after living plants to help them grow;<br><br>That animals change as they grow and have life cycles; | Sort e.g. living things, into two simple groups, using given criteria (eg. minibeasts with/without wings, animals that live on land/in water etc).<br><br>Communicate what I have learned through drawing or some other way of recording.<br><br>Comment on how two animals, are similar or different from each other; and notice and describe how they change as they grow.<br><br>Ask and answer questions about what I have observed. | |
| There are important processes and changes that happen;<br><br>**(link to everyday materials; working scientifically)** | Know that temperature can change materials in both reversible and irreversible ways such as melting ice, chocolate or baking bread;<br><br>Notice changes that happen in the natural world; | Use my senses to explore natural materials in the environment and explore and talk about what I can see, hear, smell and touch.<br><br>Ask questions and investigate why things happen in the classroom and wider environment through adult led and child initiated activities. | |
| Use a range of scientific equipment to develop key lines of enquiry<br><br>**(link to working scientifically)** | How to handle equipment carefully, safely and appropriately;<br><br>Know that some specialist equipment can help us to understand the natural world and enhance our experiences | Select equipment and materials to use to create e.g. a nest, or animal habitat (bug hotel, hedgehog home)<br><br>To observe closely and present results eg. talk about features I observe on materials/living creatures when using a magnifying glass and explain my observations. | |
| How science is used to help us.<br><br>**(link to working scientifically; animals including humans)** | That science has helped us to live healthier lives eg. understanding our bodies – link to oral hygiene<br><br>That science helps us to develop equipment that makes our lives easier (and more fun), cameras, cars, bouncy castles… | Understand the importance of oral hygiene and how to look after my body and own personal hygiene.<br><br>Ask and answer questions in familiar contexts, e.g. What happens at night? What can we see when it's dark? What helps us to see in the dark? How do we travel? How do things move?<br><br>Explore how things work and talk about it eg. magnifying glasses and how they make things bigger to be seen in more detail. | |

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## IMPLEMENTATION

**Understanding the World: Education Programme**

Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.

**Science (UTW)** is valued and promoted through direct teaching and purposeful learning opportunities across different themes throughout the year.

We used planned themes and capitalise on unplanned moments that present themselves to talk about living things, materials and changes across the year.

For each theme we have identified the scientific knowledge and skills that we will teach ensuring that knowledge and skills are regularly revisited. We cover the following themes:

| Term | Theme | Knowledge and Skills |
|---|---|---|
| Autumn 1 | Marvellous Me | children learn about changes and living things. They will also learn how to work scientifically, asking questions about the world through the use of their senses: sight, hearing, smell, touch and taste. |
| Autumn 2 | Special Times Special Places | the children will learn about changing states of matter (both reversible and irreversible – eg. ice freezing and baking gingerbread men) |
| Spring 1 | Far Far Away | children will learn about materials and working scientifically |
| Spring 2 | Twinkle Twinkle Little Star | children will learn about similarities and differences in the natural world |
| Summer 1 | All Creatures Great and Small | children will learn about living things and everyday materials |
| Summer 1 | The Deep Blue Sea | children will learn about living things and similarities and differences in the natural world |

In addition to science (UTW) being taught as a discrete subject, opportunities are also provided for children to practise and apply scientific knowledge and skills through investigation and exploration in the areas of provision.
Investigation areas, inside and outdoors, are resourced with a wide range of scientific equipment and materials which offer opportunities for children to observe, investigate, explore and experiment.
Adults know the characteristics of a good scientist. They model technical language and scientific behaviours and attitudes encouraging children to ask questions, test out ideas, carry out investigations and draw conclusions

## IMPACT

By the end of Reception, children will:

- Talk about the properties of materials
- Name the parts of plants and animals
- Make a sensible prediction
- Record findings
- Talk about similarities and differences
- Draw conclusions
- Observe, notice and make comparisons
- Talk about reversible and irreversible changes
- Talk about the characteristics of weather and seasons
- Carry out an investigation

**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.

**The ELG is an assessment checkpoint and should not be used as a curriculum – the curriculum should be broad and balanced with a range of experiences and opportunities not limited to teaching to the ELG.*