

Understanding the World – Science

Intent

In Early Years 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 ideas and drawing conclusions
- Fostering children’s excitement and pleasure in the awe and wonder of natural phenomena



Implementation

Science is valued and promoted through direct teaching and purposeful learning opportunities across different themes throughout the year. We use planned themes and capitalise on unplanned moments that present themselves to talk about living things, materials and changes. These include natural objects, new life and recycling. 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:

This is Me: through this topic children will learn about changes and living things

Seasons throughout the year: children will learn about changes, materials and living things. In Autumn children will visit Barker’s Park and observe the autumnal changes and in Winter children will learn about animals from the North and South Poles. We will create ‘fake’ snow from crystals, slowly adding water and watch how it changes from one state to another.

Mad about Minibeasts: through this topic children will learn about changes and living things and talk about lifecycles.

What a wonderful world: through this topic children will learn about changes and living things and talk about lifecycles, planting seeds and caring for the plants. This will help children to understand the need to respect and care for the natural environment and all living things and understand the key features of the life cycle of a plant.

Even though we follow these key experiences, there is flexibility within these plans to allow for spontaneous events and activities and for when we might need to adapt our implementation depending on the children’s current needs or interests.

In addition to Science 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 all areas of the provision e.g. magnets, to investigate which objects are magnetic and which are non-magnetic. Investigation areas, inside and outdoors, are resourced with a 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.

Skills 2-3 years

- Observe seasonal changes
 - Note changes during visits to Barker’s Park
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- Explore and respond to different natural phenomena in setting and on trips e.g.

Skills 3-4 years

- Share and talk about their family photos
- Understand the key features of the life cycle of a plant and an animal
 - Talk about and sequence the lifecycle of a butterfly
- Plant seeds and care for growing plants and begin to

Skills 4-5 years

- Understand the effect of changing seasons on the natural world around them:
 - Share texts with the children about the changing seasons
 - Trip to Barker’s Park

<ul style="list-style-type: none"> ➤ standing in the rain with wellies and umbrellas ➤ walking through tall grass ➤ splashing in puddles ➤ observing the spring daffodils and cherry blossom ➤ looking for worms and minibeasts ➤ planting, watering and looking after plants/vegetables/fruit they have grown from seeds/bulbs ➤ Collect natural materials, such as leaves and conkers picked up from the pavement or park during autumn ➤ begin to understand the need to respect and care for the environment – classroom/outdoors 	<p>understand the need to respect and care for the natural environment and all living things</p> <ul style="list-style-type: none"> ➤ Talk about and sequence the lifecycle of a sunflower ➤ Care for classroom/outdoors/ recycling (plastics etc in the sea) <ul style="list-style-type: none"> • Observe seasonal changes <ul style="list-style-type: none"> ➤ Children note and record the weather ➤ Note changes during visits to Barker’s Park ➤ Share texts with the children about the changing seasons • Explore and talk about different forces they can feel <ul style="list-style-type: none"> ➤ Magnetism - attraction and repulsion ➤ • Explore how things work <ul style="list-style-type: none"> ➤ Investigate wind-up toys, pull back toys etc • Explore the natural world around them and talk about what they see, using a wide vocabulary. • Use appropriate equipment to support investigations e.g. magnifying glasses when on a Minibeast Hunt, looking at woodlice under a log • Talk about differences between materials and the changes they notice: <ul style="list-style-type: none"> ➤ when making Easter Chocolate Crispie buns ➤ when making porridge ➤ when baking Gingerbread Men ➤ when creating the North/South poles ➤ when making jelly ➤ exploring how you can shine light through some materials, but not others 	<ul style="list-style-type: none"> • Explore the natural world around them <ul style="list-style-type: none"> ➤ After close observation, draw pictures of the natural world, including animals (raise chickens) and plants ➤ Observe and interact with natural processes, e.g. ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water • Understand the need to respect and care for the natural environment and all living things <ul style="list-style-type: none"> ➤ Recycling • Understand the changing nature of some materials • Name and explore their 5 senses, explaining in simple terms what their 5 senses are • Describe what they see, hear and feel whilst outside: <ul style="list-style-type: none"> ➤ Name and describe some plants and herbs whilst playing in the mud kitchen
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Impact

By the end of Foundation Stage children will be able to:

- Talk about the properties of materials
- Carry out an investigation
- Make a sensible prediction
- Talk about similarities and differences
- Name the parts of plants and animals

- Record findings
- Draw conclusions
- Observe, notice and make comparisons
- Talk about reversible and irreversible changes
- Talk about the characteristics of weather and seasons