

# Understanding of the World: Science

## 3 and 4-year olds will ...

Children should be learning to:	Examples of how this could be supported	Proposed learning sequence
<ul style="list-style-type: none"> <li>• <b>Use all their senses in hands-on exploration of natural materials</b></li> <li>• <b>Explore collections of materials with similar and/or different properties.</b></li> <li>• <b>Talk about what they see, using a wide vocabulary</b></li> </ul>	<p>Provide interesting natural environments for children to explore freely outdoors. Make collections of natural materials to investigate and talk about.</p> <p>Suggestions:</p> <ul style="list-style-type: none"> <li>• contrasting pieces of bark</li> <li>• different types of leaves and seeds</li> <li>• different types of rocks</li> <li>• different shells and pebbles from the beach</li> </ul> <p>Provide equipment to support these investigations. Suggestions: magnifying glasses or a tablet with a magnifying app.</p> <p>Encourage children to talk about what they see.</p> <p>Model observational and investigational skills. Ask out loud: “I wonder if...?” Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas</p>	<pre> graph TD     A[Collect different materials they find in outside places like woods, etc. taking care to be environmentally friendly.] --&gt; B[Organise the collections into groups, such as things that grow/ grew and things that did not grow.]     B --&gt; C[Label different materials by name, i.e. wood, plastic, glass, etc. Consider some of their uses.]     C --&gt; D[Look more closely at natural materials by using magnifying instruments and get children to make observations, both in words and drawing.]     </pre>
<p><b>Key vocabulary</b></p>		
<p><input type="checkbox"/> plastic</p>		
<p><input type="checkbox"/> wood</p>		
<p><input type="checkbox"/> glass</p>		
<p><input type="checkbox"/> bricks</p>		
<p><input type="checkbox"/> metal</p>		
<p><input type="checkbox"/> leather</p>		<p><b>The natural world: End of nursery expectation</b></p> <ul style="list-style-type: none"> <li>• Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world;</li> <li>• Talking about some of the things they have observed such as plants, animals, natural and found objects;</li> <li>• Talking about why things happen and how things work;</li> <li>• Developing an understanding of growth, decay and changes over time;</li> <li>• Showing care and concern for living things and the environment.</li> </ul>

# Understanding of the World: Science

3 and 4-year olds will ...

Children should be learning to:

**Explore how things work**

Examples of how this could be supported

Provide mechanical equipment for children to play with and investigate.

Suggestions: wind-up toys, pulleys, sets of cogs with pegs and boards.

## Key vocabulary

cogs

wind up

pulley

battery

pop up

key

## Proposed learning sequence

Let children explore a range of toys with moving parts, these may include wind up toys and battery operated toys.

Explore anything that has wheels. Look at toys, scooters and bicycles.

Let children explore using small wheeled vehicles moving on different surfaces, such as sand, wood, etc.

Let children make up their own vehicles and add wheels to them. Let them understand more about how they can make things move on their own.

## The natural world: End of nursery expectation

- Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world;
- Talking about some of the things they have observed such as plants, animals, natural and found objects;
- Talking about why things happen and how things work;
- Developing an understanding of growth, decay and changes over time;
- Showing care and concern for living things and the environment.

# Understanding of the World: Science

3 and 4-year olds will ...

## Children should be learning to:

**Plant seeds and care for growing plants.**  
**Understand the key features of the life cycle of a plant and an animal.**  
**Begin to understand the need to respect and care for the natural environment and all living things.**

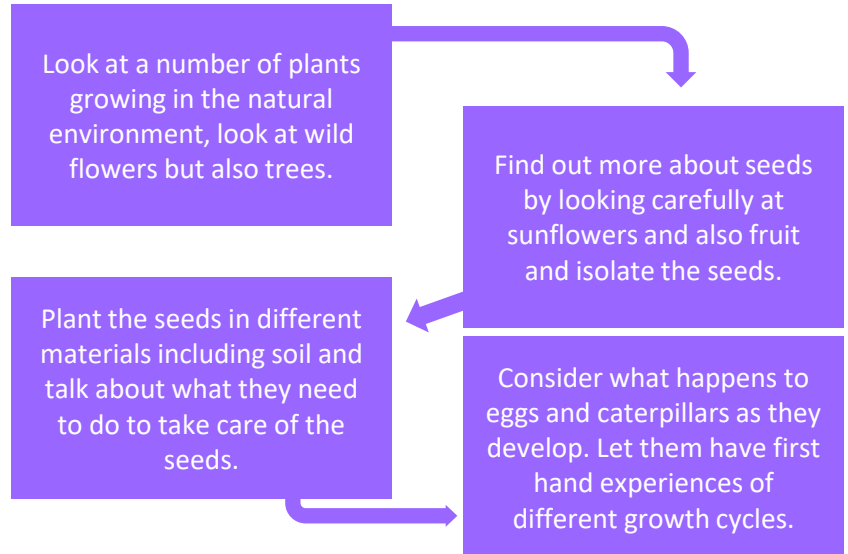
## Examples of how this could be supported

Show and explain the concepts of growth, change and decay with natural materials. Suggestions:

- plant seeds and bulbs so children observe growth and decay over time
- observe an apple core going brown and mouldy over time
- help children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs.

Plan and introduce new vocabulary related to the exploration. Encourage children to use it in their discussions, as they care for living things. Encourage children to refer to books, wall displays and online resources. This will support their investigations and extend their knowledge and ways of thinking.

## Proposed learning sequence



## Key vocabulary

petal

root

flower

soil

grow

nature

## The natural world: End of nursery expectation

- Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world;
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- Showing care and concern for living things and the environment.

# Understanding of the World: Science

3 and 4-year olds will ...

**Children should be learning to:**

**Explore and talk about different forces they can feel.**

**Examples of how this could be supported**

Draw children's attention to forces.

Suggestions:

- how the water pushes up when they try to push a plastic boat under it
- how they can stretch elastic or snap a twig but cannot bend a metal rod
- magnetic attraction and repulsion.

Plan and introduce new vocabulary related to the exploration and encourage children to use it.

## Key vocabulary

attract

windmill

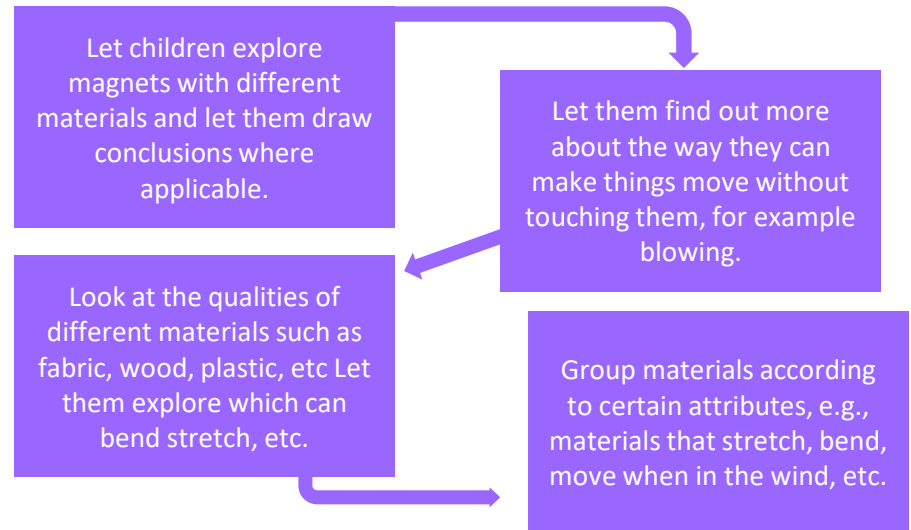
pushing

pulling

stretching

bending

**Proposed learning sequence**



## The natural world: End of nursery expectation

- Able to comment and ask questions about aspects of their familiar world, such as the place where they live or the natural world;
- Talking about some of the things they have observed such as plants, animals, natural and found objects;
- Talking about why things happen and how things work;
- Developing an understanding of growth, decay and changes over time;
- Showing care and concern for living things and the environment.

# Understanding of the World: Science

Reception aged children will ...

Children should be learning to:

**Explore the natural world around them**

**Examples of how this could be supported**

Provide children with have frequent opportunities for outdoor play and exploration.

Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences.

Create opportunities to discuss how we care for the natural world around us.

Offer opportunities to sing songs and join in with rhymes and poems about the natural world.

After close observation, draw pictures of the natural world, including animals and plants.

Observe and interact with natural processes, such as 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.

**Proposed learning sequence**

Appreciate that there are a number of creatures that share our planet with us.

Learn to look more closely at plants, animals and insects that are around us.

Begin to notice certain patterns in the natural world, e.g., spider spinning a web, ice melting, sun going behind clouds.

Talk about and draw some of the natural phenomena around them by observing and recording.

## Key vocabulary

hedgehog

minibeast

shadow

melting

floating

spider

## The natural world: Early Learning Goal

- 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.

# Understanding of the World: Science

Reception aged children will ...

Children should be learning to:

**Describe what they see, hear and feel whilst outside**

## Key vocabulary

showers

drizzle

robin

chaffinch

oak tree

conkers

**Examples of how this could be supported**

Encourage focused observation of the natural world.

Listen to children describing and commenting on things they have seen whilst outside, including plants and animals.

Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in.

Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.

**Proposed learning sequence**

Experience being out in the wind, rain and sun. Begin to talk about the experience of getting wet and feeling the wind.

Begin to recognise some of the potential hazards associated with the outside environment but also recognise its beauty.

Have the vocabulary to describe their experiences in much greater detail.

Begin to name some of the common plants and animals they see, including names of common birds.

## The natural world: Early Learning Goal

- 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.

# Understanding of the World: Science

Reception aged children will ...

Children should be learning to:

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

## Key vocabulary

- Autumn
- Winter
- Spring
- Summer
- evergreen
- deciduous

**Examples of how this could be supported**

Guide children's understanding by draw children's attention to the weather and seasonal features. Provide opportunities for children to note and record the weather. Select texts to share with the children about the changing seasons.

Throughout the year, take children outside to observe the natural world and encourage children to observe how animals behave differently as the seasons change. Look for children incorporating their understanding of the seasons and weather in their play.

**Proposed learning sequence**

Notice that the weather changes very frequently and that they have to wear different clothing through the year.

Be able to contribute to a weather chart using appropriate symbols when doing so.

Know which season is the hottest in the year and which is the coldest.

Know the names of the seasons and be able to articulate what each season brings.

## The natural world: Early Learning Goal

- 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.**