



## Understanding of 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, forces. Habitats and seasons

For each theme we have identified the scientific knowledge and skills that we will teach ensuring that knowledge and skills are regularly revisited.

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.



# Garton on the Wolds C.E. (V.C.) Primary School

Respect, Aspire, Achieve

"I have come that they may have Life, and have it to the full" (John 10 v.10)"

## Skills 2-3 years

- Explore and respond to different natural phenomena in setting and on trips
- 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
  - Observe seasonal changes -

## Skills 3-4 years

- Use all their senses in hands-on exploration of natural materials.
  - Explore collections of materials with similar and/or different properties.
- Talk about what they see, using a wide vocabulary.
- Begin to make sense of their own life-story and family's history.
    - ☑ Share and talk about their family photos
    - Explore how things work
    - Show interest in different occupations
    - ☑ During Black History Month – circle time talking about parents/carers' occupations
    - During Superheroes topic invite
    - Dentist/Hygienist or dental nurse, a Police Officer or a Nurse
    - Research a Scientist during Superhero topic
    - Role play/Home Corner set-up as a Fire Station,
    - Hospital, Dentist or police cell
    - Plant seeds and care for growing plants
    - Begin to understand the need to respect and care for the natural environment and all living things.
    - ☑ Whole school project on Conservation – children

## Skills 4-5 years

- Learn new vocabulary
  - Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen (C&L)
  - Understand the effect of changing seasons on the natural world around them:
    - Share texts with the children about the changing seasons
    - Explore the natural world around them
    - After close observation, draw pictures of the natural world, including animals
    - 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
- Understand the changing nature of some materials
  - Name and explore their 5 senses, explaining in simple terms what their 5 senses are



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|  | <ul style="list-style-type: none"><li>• learn about water pollution and keeping our</li><li>• oceans and waters clean.</li><li>• Care for classroom/outdoors/ recycling</li><li>• Growing vegetables (turnips)</li><li>• Understand the key features of the life cycle of a plant and</li><li>• an animal.</li><li>• Talk about and sequence the lifecycle of a</li><li>• butterfly</li><li>• Care for the butterflies</li><li>• Talk about and sequence the lifecycle of a sunflower</li><li>• Plant and care for a sunflower</li><li>• Explore and talk about different forces they can feel.</li><li>• Magnetism - attract, repel, magnet.</li><li>• Talk about the differences between materials and changes</li><li>• they notice.</li><li>• Talk about and sequence the lifecycle of a sunflower</li><li>• Observe seasonal changes</li><li>• Children note and record the weather (daily weather chart/discussions)</li></ul> <p>Share texts with the children about the changing seasons</p> <p>Talk about the changes they notice:</p> | <ul style="list-style-type: none"><li>• Describe what they see, hear and feel whilst outside:</li><li>• Name and describe some plants and herbs whilst playing in the mud kitchen</li><li>• Recognise some environments that are different to the one in which they live.</li></ul> <p>☑ Know and talk about the different Factors that support their overall health And well being (PSE):</p> <ul style="list-style-type: none"><li>-regular physical activity</li><li>-healthy eating</li></ul> <p>☑ tooth brushing Visit from Dental Practice to demonstrate how t clean their teeth efficiently and discuss healthy foods</p> <ul style="list-style-type: none"><li>-sensible amounts of 'screen time'</li><li>-having a good sleep routine</li><li>-being a safe pedestrian</li></ul> |
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- when making Chocolate Easter Nests
  - when making porridge
  - when baking Gingerbread Men
  - when creating the North/South poles (snow)
  - when making jelly
  - exploring how you can shine light through some materials, but not others placing ice cubes indoors and outside
  - Explore how things work
  - 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/habitats, looking at woodlice under a log
- Understand 'why' questions, like: "Why do you think
  - the ice melted quicker indoors?"
  - Make healthy choices about food, drink, activity and toothbrushing
  - Visit from Dental Practice to demonstrate how to clean their teeth efficiently and discuss healthy foods
  - Daily healthy snack time



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## Impact

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

- to confidently talk, discuss, comment and ask questions about their natural world, animals, plants, forces.
- talk about how things happen and why they happen
- look closely at change, differences and patterns and they will talk about these with ease
- talk about their natural world around them includes states of matter and the weather.
- have a secure understanding of how to care for living things to help them to grow.
- have a secure understanding of how environments might vary.

## Early Learning Goals

### **Expressive Arts and Design (Creating with Materials)**

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form, and function;
- Share their creations, explaining the process they have used.

### Links to Key Stage One National Curriculum

#### **Children should be taught**

- to use a range of materials creatively to design and make products;
- to use drawing, painting and sculpture to develop and share their ideas, experiences and imagination;
- to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space;
- about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work