

How can children learn about Science in Early Years?

The Early Years Foundation Stage Curriculum supports children to explore, investigate and make sense of the natural and physical world around them. Children are encouraged to observe, question, predict and experiment through hands-on experiences such as exploring plants, animals, materials, weather and seasonal changes. They learn to notice patterns, compare similarities and differences, and describe what they see, hear and feel. Activities such as growing plants, simple experiments, nature walks and sensory exploration help children develop curiosity, critical thinking and problem-solving skills. By discussing their observations, making predictions, and testing ideas, children build a strong foundation for scientific understanding and develop an appreciation of the diversity, complexity and beauty of the world around them.

Links to Development Matters: Birth to Three

Communication & Language

- Understand simple questions about 'who', 'what' and 'where' (but generally not 'why')
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Understanding the world

- • Explore materials with different properties

Expressive Arts & Design

- Notice patterns with strong contrasts
- Explore different materials, using all their senses to investigate them
- Manipulate and play with different materials
- Use their imaginations as they consider what they can do with different materials

Key Vocabulary

Cow, sheep, pig, goat, cat, dog, mouse, fish, frog, head, tummy, leg, hand, foot, eyes, nose, mouth, ears, apple, banana, orange, raisins, pears, texture, smell, sound, taste, wet, dry, paper, wood, water, ice

End Points

- Can identify and name three common animals
- Can identify and name at least three body parts
- Can identify and name at least two fruits
- Explore materials with different properties

Links to Development Matters: Three and Four Year Olds

Communication and Language	<ul style="list-style-type: none"> • Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
Physical Development	<ul style="list-style-type: none"> • Make healthy choices about food, drink, activity and toothbrushing
Understanding the World	<ul style="list-style-type: none"> • 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 • Explore how things work • 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 • Explore and talk about different forces they can feel • Talk about the differences between materials and changes they notice

Key Vocabulary

Cow, sheep, goat, chicken, duck, pig, dog, cat, donkey, goose, swan, rabbit, mouse, rat, snake, owl, fox, badger, hedgehog, frog, bat, deer, squirrel, lizard, fish, shark, whale, octopus, crab, hair, head, nose, mouth, eyes, ears, arm, hands, fingers, tummy, belly, legs, feet, toes, grapes, apples, oranges, bananas, strawberries, raspberries, blueberries, pears, cucumber, cherries, plums, broccoli, carrots, onions, lettuce, peas, potatoes, tomato, sweetcorn, pumpkin, mushroom, pepper, wood, metal, plastic, paper, stone, glass, water, ice, weather, rain, snow, wind, snow, frost, foggy, cloudy, sunshine

End Points

- Can identify and name 15 common animals
- Can identify and name at least eight body parts
- Can identify and name at least five fruits and five vegetables
- Can identify and name at least four materials

- Can name at least three types of weather

Links to Development Matters: Reception

Communication and Language	<ul style="list-style-type: none"> • Learn new vocabulary • Ask questions to find out more and to check what has been said to them • Articulate their ideas and thoughts in well-formed sentences • Describe events in some detail • Use talk to work out problems and organise thinking and activities. Explain how things work and why they might happen • Use new vocabulary in different contexts
Physical Development	<ul style="list-style-type: none"> • Know and talk about the different factors that support their overall health and wellbeing: <ul style="list-style-type: none"> • Regular physical activity • Healthy eating • Toothbrushing • Sensible amounts of 'screen time' • Having a good sleep routine • Being a safe pedestrian
Understanding the World	<ul style="list-style-type: none"> • Explore the natural world around them • Describe what they see, hear and feel while they are outside • Recognise some environments that are different to the one in which they live • Understand the effect of changing seasons on the natural world around them

Early Learning Goals

Communication and Language Listening, Attention and Understanding	<ul style="list-style-type: none"> • <u> </u>Make comments about what they have heard and ask questions to clarify their understanding
Personal, Social and Emotional Development	<ul style="list-style-type: none"> • <u> </u>Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices

Understanding the World 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

Key Vocabulary

African animals (lion, ostrich, hyena, zebra, elephant, rhinoceros, hippopotamus, crocodile, leopard, giraffe, gorilla, gazelle, cheetah, vulture) Polar regions (polar bear, arctic wolf, arctic fox, arctic hare, reindeer, walrus, seal, snowy owl, killer whales, orcas, penguins, beluga whale) Jungle/tropical (tiger, snake – python, parrot, leopard, tapir, monkeys, bats, elephants, jaguars) Desert (camel, scorpion, lizards, snakes) Water-life (turtles, whales, dolphins, sharks, fish, shellfish, prawns, crabs, lobster, mussels, oysters, octopus, squid, jellyfish, seahorse, starfish, rays, eels, jellyfish, otter, beaver, alligator Tongue, teeth, eyebrows, eyelashes, neck, elbow, shoulders, knee, hip, grapes, apples, oranges, bananas, strawberries, raspberries, blueberries, pears, cucumber, cherries, lemons, limes, apricots, coconuts, plums, kiwis, mangoes, watermelons, pineapple, peach, apricot, broccoli, carrots, onions, avocado, lettuce, peas, potatoes, beetroot, tomato, courgette, cauliflower, sweetcorn, pumpkin, mushroom, leek, radish, turnip, pepper, asparagus, aubergine, cabbage, wood, metal, plastic, paper, stone, glass, water, ice, rubber, fabric, sponge, cardboard, brick, clay, weather, rain, snow, wind, frost, foggy, cloudy, sunshine, seasons, Autumn, Spring, Summer, Winter

End Points

- Can identify and name 15 animals across all classes (reptile, birds, mammals, amphibians, fish)
- Can identify and name at least 12 body parts
- Can identify and name at least eight fruits and eight vegetables
- Can identify and name at least eight materials
- Can name at least five types of weather Can name at least three seasons

Links to National Curriculum: Year 1

Pupils should be taught about

Plants

- Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- Identify and describe the basic structure of a variety of common flowering plants, including trees

Animals

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores,

- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
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

- Distinguish between an object and the material from which it is made
- Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- Describe the simple physical properties of a variety of everyday materials
Compare and group together a variety of everyday materials on the basis of their simple physical properties.

Seasonal changes

- Observe changes across the four seasons
Observe and describe weather associated with the seasons and how day length varies

Working scientifically

- 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.