

Science End points

Pre-School

These end points ensure that preschool children build a solid foundation for scientific understanding and inquiry as they progress into Nursery:

- **Exploration and Investigation:** Children demonstrate curiosity about the world around them by exploring various natural materials and objects, engaging in hands-on activities that encourage observation and inquiry.
- **Understanding the World:** Children can describe and compare features of living things, such as animals and plants, and show an awareness of their environment by discussing different habitats and ecosystems.
- **Physical Properties:** Children explore and identify basic physical properties of materials, such as texture, shape, and color, through play and experimentation, demonstrating an understanding of how materials can change when combined or manipulated.
- **Life Cycles and Growth:** Children recognize that living things grow and change over time, showing an understanding of basic life cycles through observations and discussions about plants and animals.
- **Scientific Language:** Children begin to use simple scientific vocabulary to describe their observations and experiences, communicating their findings with peers and adults.
- **Experimentation and Prediction:** Children engage in simple experiments, making predictions about the outcomes, and begin to understand cause-and-effect relationships through their explorations.

Science End points

Nursery

Through exploration and provision, by the end of Nursery, children should:

- Begin to understand that dinosaurs lived a long time ago and recognize some common dinosaur names and features.
- Explore light and dark, noticing differences between day and night, and begin to understand the role of the Sun and artificial light sources like lamps and torches.
- Identify cold environments like Antarctica, understand that it is home to animals such as penguins, and recognize how animals are adapted to live in cold climates.
- Explore the world of minibeasts, recognizing common creatures like worms, spiders, and butterflies, and understand their importance in nature.
- Learn about life on the farm, including identifying farm animals and understanding the role of farms in providing food and other resources.
- Observe and talk about features of the natural world, such as trees, flowers, and weather, and begin to understand how nature changes with the seasons.

Science End points

Reception

Through teacher led lessons and continuous provision, by the end of reception children should:

- Explore and talk about the natural world, making observations about animals, plants, and their environments.
- Describe the changing seasons and weather, and understand how different seasons affect the world around them.
- Begin to understand the basic needs of living things, such as food, water, and shelter.
- Identify and name common animals, plants, and objects in their environment.
- Investigate materials through play, exploring their properties (e.g., soft, hard, rough, smooth) and how they can be used.
- Recognize differences and similarities between the physical properties of everyday objects and the natural world

Year 1

By the end of Year 1, using the Developing Experts scheme of work, pupils will be able to:

- Identify and name a variety of common animals, including mammals, reptiles, and birds.
- Understand the basic structure of plants and trees and recognize the importance of sunlight and water for growth.
- Observe and describe weather patterns associated with seasonal changes.
- Identify everyday objects and describe their materials and properties.

Year 2

By the end of Year 2, using the Developing Experts scheme of work, pupils will be able to:

- Identify and compare the differences between living things, dead things, and things that have never been alive.
- Understand basic needs of animals and humans, including food, water, air, and shelter for survival.
- Recognize the importance of exercise, nutrition, and hygiene for human health.
- Explore and compare the properties of everyday materials, identifying their suitability for different purposes.
- Observe and describe how seeds and bulbs grow into mature plants, and understand the conditions needed for plant growth.
- Investigate and describe the simple physical properties of materials, such as hard, soft, shiny, and dull.

Year 3

By the end of Year 3, using the Developing Experts scheme of work, pupils will be able to:

- Identify and describe the functions of different parts of flowering plants, including roots, stems, leaves, and flowers.
- Explore the requirements of plants for life and growth, such as air, light, water, and nutrients from soil.
- Investigate how water is transported within plants and the role of flowers in plant reproduction.
- Classify rocks based on their properties and understand how fossils are formed.
- Recognize that light is needed to see, and explore how light is reflected, including how shadows are formed.
- Compare and group materials based on whether they are magnetic, and explore forces such as push, pull, and magnetism.

Year 4

By the end of Year 4, using the Developing Experts scheme of work, pupils will be able to:

- Describe the simple functions of the digestive system in humans and identify the different types of teeth and their functions.
- Construct and interpret food chains, identifying producers, predators, and prey.
- Compare and group materials based on their states (solid, liquid, gas) and observe how materials change state when heated or cooled.
- Understand the water cycle, including the processes of evaporation and condensation.
- Explore how sound is produced and how it travels through different materials, and investigate how pitch and volume can be changed.
- Understand how electrical circuits work, identify common appliances that run on electricity, and build simple circuits using switches, bulbs, and batteries.

Year 5

By the end of Year 5, using the Developing Experts scheme of work, pupils will be able to:

- Describe the movement of the Earth, Moon, and planets relative to the Sun, understanding how this relates to day and night, and the seasons.
- Explain the force of gravity and investigate the effects of air resistance, water resistance, and friction.
- Understand the changes in materials through processes such as dissolving, mixing, and reversible and irreversible changes.
- Explore the life cycles of mammals, amphibians, insects, and birds, including the process of reproduction in plants and animals.
- Investigate the properties of materials, focusing on their ability to conduct heat and electricity, and learn how some materials can act as thermal insulators.
- Explore how humans change as they develop from birth to old age, with an emphasis on growth, development, and aging.

Year 6

By the end of Year 6, using the Developing Experts scheme of work, pupils will be able to:

- Recognize how living things have changed over time and understand the process of evolution and adaptation.
- Identify how animals and plants are classified into broad groups based on their characteristics and use keys to identify species.
- Understand the circulatory system, including the function of the heart, blood vessels, and blood, and describe how nutrients and water are transported within the body.
- Explore the effects of diet, exercise, drugs, and lifestyle on the human body.
- Investigate how light travels in straight lines and how we see objects because light is reflected into our eyes.
- Build and understand more complex electrical circuits, explaining how variations in voltage affect the functioning of components like bulbs, buzzers, and motors.