

Curriculum overview for parents and carers

Science

Summary of key Science learning for EYFS to Year 5/6.



Autumn	Living things and their habitats Animal adventures Exploring habitats where animals big and small live—from spiders to sloths and farms to forests—pupils use their observations to sort animals based on their similarities and differences. They observe and compare the homes and behaviours of various animals, understanding how different environments meet their needs. Through outdoor activities, songs and creative tasks, pupils develop a deeper connection to the natural world.		
Spring	Materials I am a scientist Exploring processes and changes in the natural world, children build important foundations for working scientifically. Through hands-on activities, they compare and test materials, discovering similarities and differences between them. Pupils begin to guess what might happen and learn that observations help to answer questions. They discover that materials have different textures, can change shape and respond to pushes and pulls.		
Summer	Plants Our beautiful planet Exploring the outdoor environment, pupils describe what they see and feel as they observe a range of plants. They examine different plant parts and draw their observations. By planting their own seeds, pupils discover that water and light are essential for growth. They also learn the importance of caring for the planet and consider practical ways they can help protect it.	Across the year	Forces, Earth and space Changing seasons Observing how the natural world transforms through the year, children discover how these changes affect plants, animals and daily life. In autumn, they create a class weather chart and collect the treasures that the season brings. They learn how some animals prepare for winter. In spring, they explore new life and the life cycle of a butterfly through dance. During summer, they experiment with sand and water to find the perfect mixture for building sandcastles.

	Year 1/2 Cycle A		
Autumn 1	Plants	Autumn 2	Forces, Earth and space
	Introduction to plants Venturing outside, children identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. They use magnifying glasses to observe and name plant parts and draw and label diagrams of flowers. Children closely observe leaves and sort them into groups based on their appearance. They use non-standard units to measure leaf length and record their observations in a table. Pupils investigate if beans need water for growth and identify edible plant parts.		Seasonal changes Reflecting on their own experiences, children learn about the four seasons and the weather associated with each. They explore how seasonal changes affect trees, daylight hours and our choices about outfits. They plan and carry out their own weather reports, considering the knowledge required for this job.
Spring 1	Living things and their habitats	Spring 2	Animals, including humans
	Habitats Considering the life processes that all living things have in common, pupils classify objects into alive, was once alive or has never been alive. They explore global habitats, naming plants and animals that can be found there and learn how a range of different living things depend on each other for food or shelter. They then explore this further by creating food chains to show the sequence that living things eat each other for energy to grow and stay healthy.		Life cycles and health Studying the life cycles of various animals, children learn what animals need to survive and how they change over time. Pupils collect data that allows them to observe changes in their peers, while also developing their ability to take measurements and record data. They consider how scientific knowledge helps people to make healthy choices.
Summer 1	Plants	Summer 2	Making connections
	Plant growth Carrying out comparative tests, pupils identify the conditions required for seed germination and compare these to the survival needs of plants in later growth phases. Pupils use rulers to measure stem growth and record data in a table. They use their results to conclude that plants need water, light and a suitable temperature to grow and stay healthy. Children identify the stages in a plant's life cycle and discover how humans impact plants in the environment.		Ocean protectors Consolidating knowledge of life cycles, habitats and food chains, children explore the ocean and rock pools. They investigate what happens to litter when it is left in water to better understand the choices we make about materials available. Pupils role-play as marine biologists to collect data about population sizes to plot as pictograms and to better understand how we can protect the oceans.

Year 3/4 Cycle A

Autumn 1

Energy

Light and shadows

Identifying examples of light sources, children learn that light is needed to see and how its absence causes darkness. Children investigate reflection and shadow formation, including how different factors affect shadows. They explore how shadows can be used to entertain in the arts and create shadow puppets to recount how different people work or experiment with light.

Autumn 2

Animals, including humans

Movement and nutrition

Studying the human skeleton, children identify key bones and compare them to other animals explaining the role within the body. Pupils explore how changes in muscles result in movement and the implications these discoveries have in the scientific development of prosthetic limbs. They study how energy is used by the body, what constitutes a balanced diet in humans and how research contributes to nutritionist expertise.

Spring 1

Materials

Rocks and soil

Studying rocks and their properties, children learn how to classify rocks and identify how they were formed. They look at the work of paleontologists to learn about fossil formation and use models to explore how fossils tell us about the past. Pupils investigate the physical properties of rocks and link these to their particular uses and explore soil formation, separate soil using a sedimentation jar and test soil drainage.

Spring 2

Animals, including humans

Digestion and food

Using models, children describe the function of key organs in the digestive system. They identify the types of human teeth to create their own model and investigate factors that impact our dental health. They compare human teeth to other animals' and consider this in the light of prior knowledge about predators, prey and food chains. Children take on the role of a naturalist investigating animal faeces for clues about diet, digestion and dentition.

Summer 1

Energy

Electricity and circuits

Exploring appliances that use electricity, children learn how to work with electricity safely and build circuits. They investigate electrical conductors and insulators and explore the relationship between the number of bulbs and bulb brightness. Real scenarios and historical discoveries inform children about scientific progression and home safety.

Summer 2

Making connections

How does food affect muscle fatigue?

Using practical investigations, pupils develop their working scientifically skills by exploring how food influences muscle fatigue. Revisiting learning on digestion, nutrition and energy, they plan and carry out a comparative test, measuring muscle endurance before and after eating. Gathering and recording data carefully, pupils analyse their findings and evaluate the reliability of their test. They extend their understanding by investigating whether food can provide chemical energy to power an electrical circuit, before presenting their results clearly to others.

Year 5/6 Cycle A			
Autumn 1	Materials		
	Mixtures and separation Pupils explore different types of mixtures and the different methods that can be used to separate them. They dissolve a range of substances, identify different solutions and investigate how temperature affects the time taken to dissolve. They design and create a water filter, sieve soil and evaporate solutions.	Autumn 2	Properties and changes Broadening their experience of the properties of materials, children investigate hardness, transparency and conductivity and consider how these properties influence the uses of materials. They explore reversible changes, including dissolving and changes of state. Children compare these to irreversible changes, including rusting, burning and mixing vinegar and bicarbonate of soda.
Spring 1	Forces, Earth and space		
	Earth and space Exploring some of the key celestial bodies in our Solar System, children learn their names and compare their movements. Pupils discover the relationship between the Earth's rotation and daylight, making models to represent their knowledge. They make their own sundials and consider how and why humans' ideas about the universe have changed over time.	Spring 2	Circulation and health Studying the human circulatory system, children learn about the role of the heart, blood and blood vessels and use models to demonstrate their function. They explore how lifestyle choices affect our health and use secondary sources to help them play the role of healthcare professionals advising patients. Pupils devise their own investigation to look at the relationship between exercise and heart rate, applying their knowledge of variables and then analysing secondary data to understand fitness better.
Summer 1	Energy		
	Light and reflection Proving that light travels in a straight line, children use this information to explain observations of reflection and shadows. They explore how our eyes allow us to see and how mirrors can be used in a variety of ways. Pupils investigate factors affecting the size of shadows and the laws of reflection. Children apply what they have learned about light by exploring real-life uses of mirrors.	Summer 2	Making connections How reflective are space blankets? Exploring the reflectiveness of space blankets through experiments, children analyse data, draw conclusions and apply their understanding of reflection to make predictions, plan and carry out an enquiry. They consider how inventions can be used in new contexts, such as space technologies being used for marathon runners. Extending the enquiry, children explore further properties of space blankets, like reflection of light, transparency, conductivity and hardness. Developing persuasive speech, the class share their findings like a scientist by advertising the uses and properties of space blankets.