

Outdoor Learning in the National Curriculum

Why take learning outside?

Evidence shows that healthier pupils have higher educational attainment. There is substantial research that indicates that spending time outside increases levels of physical activity and mental health and wellbeing.

Teachers taking part in the Natural Connections project, funded by Defra, Natural England and Historic England and delivered by Plymouth University, reported that learning in natural environments had a positive impact on their pupils.

- Enjoyment of lessons (95%)
- Engagement with and understanding of nature (94%)
- Social skills (93%)
- Engagement with learning (92%)
- Health and wellbeing (92%)
- Behaviour (85%)
- Attainment (57%)

Taken from Transforming Outdoor Learning in Schools: Lessons from the Natural Connections Project (2012–2016)

The benefits of outdoor learning are clear, but it is not always commonplace in schools. There are a number of barriers quoted by teachers that prevent them taking learning outside, such as:

- unpredictable weather
- lack of suitable space
- difficulty in timetabling outside space
- limited adult support
- concerns about controlling behaviour
- additional organisation for resources
- how to record learning outside.

These barriers can prevent teachers from taking learning outside but, once aired, can usually be dealt with easily.

The above benefits of outdoor learning are being recognised by Ofsted, the UK Parliament Select Committee on Education and Skills, local education authorities and many others. Science curricula across the UK all refer to use of the outdoors for learning. The National Curriculum in England mentions “use of the local environment” ten times within the science programmes of study for Key Stages 1 and 2. However, it is not only in these areas where outdoor learning can enhance a school’s science provision. The following table indicates where outdoor learning fits within topics in the National Curriculum in England.

Year	Topics				
Year 1	Plants	Animals, including humans	Everyday materials	Seasonal change	
Year 2	Living things and their habitats	Plants	Animals, including humans	Uses of everyday materials	
Year 3	Plants	Animals, including humans	Rocks	Light	Forces and magnets
Year 4	Living things and their habitats	Animals, including humans	States of matter	Sound	Electricity
Year 5	Living things and their habitats	Animals, including humans	Properties and changes of materials	Earth and space	Forces
Year 6	Living things and their habitats	Animals, including humans	Evolution and inheritance	Light	Electricity

Key

Must cover outside
Should cover outside
Could cover outside
Would not cover outside

Further detail about which statements within these topics are enhanced by outdoor learning is specified for each year-group in the rest of this document. There are also suggestions of activities that may be included.

Year 1	
National Curriculum statements	Possible outdoor activities
Plants	
Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.	- Pupils use identification charts to name wild and garden plants, and deciduous and evergreen trees in the playground or local environment. - Pupils observe trees in the playground or local environment over the year to see how they change.
Identify and describe the basic structure of a variety of common flowering plants, including trees.	- Pupils identify the parts of a range of plants in the playground or local environment. - Pupils describe and make careful drawings of the parts of a range of plants in the playground or local environment. - Pupils take photographs or collect samples of parts of plants in the playground to sort and group.
Animals, including humans	
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.	Pupils use identification charts to name birds and mammals seen in the playground or local environment.
Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).	Pupils describe the features of birds and mammals seen in the playground or local environment.
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	Pupils use their senses to explore the outdoor environment. This may focus on using a particular sense to describe objects.
Everyday materials	
Distinguish between an object and the material from which it is made.	Pupils talk about objects in the playground or local environment and name the materials they are made from.
Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.	Pupils identify materials in the playground and local environment.
Describe the simple physical properties of a variety of everyday materials.	Pupils talk about the properties of materials in the playground and local environment.

Seasonal changes	
Observe changes across the four seasons.	• Pupils go out regularly and observe how the plants in the playground or local environment change throughout the year. • Pupils observe how the seasons affect animal behaviour.
Observe and describe weather associated with the seasons and how day length varies.	• Pupils go out regularly and make observations and measurements of the weather. • Pupils talk about how the weather and seasons affect their behaviour and clothing.

Year 2	
National Curriculum statements	Possible outdoor activities
Living things and their habitats	
Explore and compare the differences between things that are living, dead, and things that have never been alive.	- Pupils explore the playground or local environment to find things that are living, dead and never been alive. - Pupils make comparisons between the objects found.
Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other	- Pupils talk about how the living things in the playground or local environment are suited to the habitat in which they found them. - Pupils identify what the animals they found in the playground or local environment eat. - The pupils talk about how the habitat provides shelter for the animals they found. - The pupils talk about how the habitat provides the basic needs of the plants they found.
Identify and name a variety of plants and animals in their habitats, including micro-habitats.	- Pupils use identification charts to name plants and animals found in the playground or local environment. - Pupils name plants and animals found in micro-habitats such as in the pond, under a log, in a bush or in the soil.
Plants	
Observe and describe how seeds and bulbs grow into mature plants.	- Pupils plant a range of seeds and bulbs at the correct time of year. - Pupils observe and take measurements of the growth of the plants from the seeds and bulbs planted. - The pupils gather seeds for future pupils to plant.
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.	- Pupils follow the instructions to plant the seeds and bulbs correctly e.g. correct spacing, depth, suitable amount of light, inside or outside. - The pupils observe and water the plants to encourage them to grow and stay healthy.

Uses of everyday materials	
Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.	Pupils talk about objects in the playground or local environment and identify the materials they are made from and how this makes them appropriate for use outside.
Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Pupils explore whether they can change the shape of objects found in the playground or local environment.

Year 3	
National Curriculum statements	Possible outdoor activities
Living things and their habitats	
Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.	- Pupils identify the parts of a range of plants in the playground or local environment. - Pupils describe and make careful drawings of the parts of a range of plants in the playground or local environment. - Pupils take photographs or collect samples of parts of plants in the playground to sort and group.
Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	- Pupils observe how the plants in the playground or local environment change through the year, in particular, looking for buds, flowers, seeds and berries. - Pupils record the changes that take place through the year to plants in the playground or local environment.
Rocks	
Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.	Pupils talk about the properties of rocks in the playground or local environment.
Recognise that soils are made from rocks and organic matter.	Pupils dig in the soil in the playground to look for rocks and organic matter. Check CLEAPSS for health and safety guidance.
Light	
Notice that light is reflected from surfaces.	Pupils notice surfaces in the playground that reflect light.
Recognise that light from the Sun can be dangerous and that there are ways to protect their eyes.	When outside explain to the pupils that they must not look at the Sun and talk about precautions that can be taken to protect their eyes.
Recognise that shadows are formed when the light from a light source is blocked by an opaque object.	- Pupils look for shadows in the playground caused by the objects blocking the light from the Sun. - Pupils observe how dark shadow are caused by opaque objects and lighter shadows are created by translucent objects. - Pupils use the Sun as a light source to create shadows with their bodies.
Forces and magnets	
Compare how things move on different surfaces.	Pupils explore moving objects across different surfaces in the playground.

Year 4	
National Curriculum statements	Possible outdoor activities
Living things and their habitats	
Recognise that living things can be grouped in a variety of ways.	Pupils take photographs of plants and animals in the playground or local environment to sort and group.
Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.	Pupils use classification keys to name living things seen in the playground or local environment.
Recognise that environments can change and that this can sometimes pose dangers to living things.	Pupils carry out litter surveys in the playground or local area and consider the impact of this on the living things.
Animals, including humans	
Construct and interpret a variety of food chains, identifying producers, predators and prey.	Pupils identify the producers, predators and prey in the micro-habitats in the playground or local environment.
Sound	
Recognise that sounds get fainter as the distance from the sound source increases.	Pupils measure how the volume of a sound changes as they move away from the sound source.

Year 5	
National curriculum statements	Possible outdoor activities
Living things and their habitats	
Describe the life process of reproduction in some plants and animals.	Pupils take cuttings from plants in the playground to grow.
Earth and space	
Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.	The playground provides a larger space to create models showing the movement of the Sun, Earth and Moon and the impact of this on day and night and the apparent movement of the Sun.
Describe the movement of the Moon relative to the Earth.	
Describe the Sun, Earth and Moon as approximately spherical bodies.	
Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.	
Forces	
Identify the effects of air resistance, water resistance and friction that act between moving surfaces.	- It may be possible to drop parachutes, spinners etc. from a greater height safely outside e.g. from climbing apparatus. - It may be more convenient to explore water resistance in the playground to avoid water on the floor in the classroom.
Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Larger scale examples of levers, pulleys and gears can be explored outside.

Year 6	
National curriculum statements	Possible outdoor activities
Living things and their habitats	
Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.	Pupils classify plants and animals found in the playground or local environment.
Animals, including humans	
Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	The playground provides a larger space to create a model of the circulatory system.
Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	Pupils explore how their pulse rate changes during and after exercise.
Evolution and inheritance	
Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Pupils talk about how the living things in the playground or local environment are adapted to suit the habitat in which they found them.