Sustainability and climate change

Progression of knowledge and skills

Introduction

In 2022, the Department for Education (DfE) published Sustainability and climate change: a strategy for the education and children services systems. The policy paper set out a vision for the UK to become the world's leading education sector in sustainability and climate change by 2030.

> The challenge of climate change is formidable. For children and young people to meet it with determination and not with despair, we must offer them not just truth, but also hope. Learners need to know the truth about climate change – through knowledge-rich education. They must also be given the hope that they can be agents of change, through hands-on activity and, as they progress, through guidance and programmes allowing them to pursue a green career pathway in their chosen field.
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> **DfE Policy Paper: Sustainability and climate change: a strategy for the education and children's services systems**

Sustainability and climate action plans

As part of the DfE's strategy, a key initiative is the implementation of **sustainability leadership and climate action plans**.

By 2025, all educational settings are expected to have a nominated sustainability lead and a comprehensive climate action plan. The DfE's guidance on this initiative outlines that a climate action plan should typically address the following four key areas:

- Decarbonisation, i.e. calculating and taking actions to reduce carbon emissions, such as becoming more energy efficient.
- Adaptation and resilience, i.e. taking actions to reduce the risk of flooding and overheating.
- Biodiversity, e.g. engaging with the National Education Nature Park.
- Climate education and green careers, i.e. ensuring educational provision gives knowledge-rich and comprehensive teaching about climate change and that teaching staff feel supported to offer this.

Your school climate action plan will be unique to your setting and should address the key areas above. By using Kapow Primary for your foundation subject curriculums, you can be confident that we are actively integrating climate education across all subjects: Art, Computing, DT, Geography, History, Languages, Music, Religion and worldviews, RSE/PSHE and Science.

Climate education with Kapow Primary

At Kapow Primary, we have a longstanding commitment to climate education. We incorporated it into the citizenship lessons within our RSE/PSHE scheme of work in 2021, embedded it in our award-winning Geography scheme in 2022 and furthered our commitment by partnering with Eco-Schools in 2024.

Making climate education purposeful

Our vision is to ensure climate education is meaningfully integrated throughout the curriculum. This progression document ensures that knowledge and skills related to climate change develop cumulatively rather than an ad hoc or disconnected way. This structured approach enables our subject specialists to embed sustainability principles purposefully when designing new units. It ensures that our lesson plans and teacher videos effectively support staff in delivering these vital topics.

Integrating sustainability across the curriculum

Addressing climate change and sustainability cannot be confined to a single unit or subject and it should not be an add-on; for real impact, these issues must be embedded across the entire curriculum. Teaching sustainability only in Science or Geography limits pupils' understanding and fails to reflect the interconnected nature of environmental challenges. By weaving aspects of our sustainability progression into all foundation subjects — whether through material choices in Art and DT, ethical discussions in RE and PSHE or exploring how the arts can raise awareness of climate issues — we provide pupils with a deeper, more meaningful understanding of their role in shaping a sustainable future.

Standalone environmental courses run the risk of compartmentalising ecological literacy and side-lining its relevance.

NAEE: Engaging the Next Generation – The state of environmental, sustainability and climate education in UK schools and effective practice in the classroom

How to use this document

This document supports sustainability leads in demonstrating that the education provided is 'knowledge-rich and comprehensive in teaching about climate change', as recommended by the DfE in its Sustainability leadership and climate action plans in education guidance.

It outlines how pupils' understanding of climate change and sustainability progresses from EYFS to Year 6, structured across the following five key strands:

- Appreciation of nature.
- Interdependence.
- Resources and waste.
- Climate change.
- Individual and collective responsibility.

This learning can occur within the curriculum or through extra-curricular activities or days. Additionally, we have created a sustainability whole-school collection – a series of lessons to be taught across the year groups (available to Geography subscribers). Each progressive lesson focuses on an important aspect of sustainability at an age-appropriate level.

We are working on ensuring this progression is fully integrated across all the Kapow Primary schemes of work but subscribers to Geography, Science and RSE/PSHE will already have full coverage. We believe sustainability and climate change education should not be an additional burden but rather embedded within the foundation curriculum as part of everyday learning.

Exploring the strands

Appreciation of nature

Before pupils can understand the need to protect and sustain the environment, they must first develop a sense of wonder, curiosity and respect for the natural world—its biodiversity, environments and the processes that shape them.

Interdependence

Pupils must recognise that all living things, including humans, rely on the environment and one another to survive. Without this awareness, the importance of protecting ecosystems and biodiversity can feel abstract or disconnected from daily life.

Resources and waste

Pupils must recognise that natural resources are limited and how we use them today impacts the environment and future generations.

By exploring where materials come from, how they are used and what happens to waste, pupils learn that sustainability is not just about recycling but about making responsible choices to reduce waste and conserve resources.

Climate change

By learning about weather, climate patterns and the impact of human activity, pupils can develop a clear, age-appropriate understanding of what climate change is and why it matters.

Without this knowledge, the causes and effects of climate change can feel abstract or unrelated to their daily lives. By exploring both the challenges and solutions, pupils learn that while human actions contribute to climate change, they also have the power to help reduce its impact.

Individual and collective responsibility

Our **Individual and collective responsibility** strand ties together all other strands by giving pupils the tools, confidence and agency to take meaningful action. Without this, knowledge about climate change and other environmental issues can feel overwhelming. By working together on real-world projects, making sustainable choices and understanding the impact of change at different levels — personal, local, national and global — pupils learn that their actions matter.

This strand ensures that sustainability is not just something they learn about but something they actively engage with, developing the skills and mindset to contribute to a more sustainable future.

Appreciation of nature

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Biodiversity	Recognising and naming different types of living things and natural features in the local environment.	Identifying and naming common animals and plants from their own and other environments.	Comparing a wide variety of animals and plants. Beginning to group living things by their features.	Naming some of the features of different plants and animals. Grouping and classifying living things in a variety of ways. Researching endangered species.		Naming some micro-organisms. Exploring how living things are adapted to different environments.		Pupils should: • Have an appreciation for the variety of life on Earth. • Recognise the value of biodiversity.
	To know that plants and animals are living things. To know that plants and animals live in a range of different places (land, sea, air).	To know there are many different types of plants and animals around the world. To know that animals and plants in one place can be very different from those in another place.	To know that some animals and plants can only live in certain places. To know the features of some common animals and plants.	To know that some living things, like endangered species, are at risk of disappearing. To know that people can protect endangered species.		To know that biodiversity means the variety of all living things in an area, from the smallest microbe to the largest animal. To know that the plants and animals in an environment have specific features suited to that environment.		
Environments	Exploring and observing the natural world through play and outdoor activities.	Understanding that places around the world are very different from each other.	Comparing the features of environments from around the world.	Recognising that environments vary around the world and how this is linked to climate. Investigating natural features and phenomena and life in extreme environments.		Explaining how a variety of natural features form.		
	To know that different environments have different features.	To know the difference between natural (physical) and human-made (human) features.	To know that a 'habitat' is an environment where plants or animals live.	To know that the environment is always changing due to seasonal changes and natural processes which shape landscapes and affect living things. To know that the climate of a place determines what types of plants and animals live there.		To know that some changes to the environment happen quickly, while others happen over thousands or millions of years.		
Wonder*	Expressing curiosity and delight at the variety they see in nature.	Showing interest and wonder at how varied the natural world can be in different places.	Recognising and expressing wonder at some of the world's natural features and environments.	Appreciating how diverse and extraordinary the natural world is, both near and far.		Developing an appreciation for the richness and beauty of Earth's natural environments and life forms		Note: These endpoints are suggested by Kapow Primary.

*'Wonder' does not have knowledge statements as it fosters appreciation and curiosity rather than factual learning.

Interdependence

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Needs	Identifying living and non-living things.	Caring for plants by watering them regularly.	Classifying things into things that are living, dead, and things that have never been alive, using some of the life processes. Creating food chains to show the food different animals, including humans, eat.	Identifying how an environment provides for the needs of the animals or plants that live there.		Analysing adaptations of plants and animals that allow them to meet their needs in specific habitats. Recognising that having multiple sources for the things that living things need makes them less vulnerable.		Pupils should: • Understand that all living things, including humans, depend on the environment for survival. • Recognise that all living things are interconnected. • Recognise the value of biodiversity.
	To know that animals, including humans, need food. To know that plants need water to grow.	To know that pets and babies need caring for and providing with the things they need.	To know that all animals, including humans, need food, water and air to survive. To know that animals live in a place (habitat) that provides for their needs.	To know that plants need water, light, air, nutrients and a suitable temperature to grow and stay healthy. To know that animals need to eat a diet that provides nutrients, to grow, stay healthy and have energy.		To know that living things have adaptations that help them meet their needs in different environments.		
Relationships	Observing where animals live and the food that they eat.	Naming some common plants that humans grow and use for food.	Suggesting other ways that animals, including humans, use plants (e.g. shelter).	Explaining that habitat loss or loss of a food source can lead to the decline of a species. Explaining different ways animals can improve soil quality and support plant growth. Exploring further ways that humans use the natural environment (e.g. for medicine, transport, building materials).		Evaluating positive and negative impacts of human actions on relationships between plants and animals. Suggesting ways to protect or restore natural environments to support biodiversity and interdependence.		
	To know that animals often make their homes in trees and other plants.	To know that all land animals, including humans, eat plants and/or other animals for food.	To know that living things depend upon each other (e.g. for food and shelter).	To know that animals help plants to reproduce. To know that when one part of nature is harmed, it can affect many other living things. To know that human behaviour can affect the natural environment, including habitats. To know that animals can be both predator and prey.		To know that humans can impact the ability of plants and animals to meet their needs through activities like farming, deforestation and conservation. To know that having a wider variety of plants and animals (biodiversity) makes nature stronger and more able to deal with changes and challenges.		Note: These endpoints are suggested by Kapow Primary.

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Use of non-living natural resources.	Naming some of the objects and materials they use in school and saying what they use them for. Beginning to understand that looking after the objects and materials they use in school (e.g. toys and pencils) is important to continue to enjoy them.	Recognising that humans use many different objects and materials for different purposes.	Identifying how important foods, objects and materials are for human survival. Recognising that some objects or materials can be used to solve many different problems (e.g. wood can be used to create furniture, make paper or be burnt to create heat).	Understanding that some resources do not run out (e.g. sunlight and wind); some resources get used up but are quickly replaced (e.g. wood); and other resources get used up and take a very long time to replace (e.g. coal and oil).		Recognising that using some resources increases the amount of carbon in the atmosphere. (e.g. burning fossil fuels, deforestation). Classifying resources into renewable and non-renewable. Explaining how transporting resources (even renewable ones) increases the carbon footprint.		Pupils should: • Recognise that humans must use resources sustainably to avoid compromising the needs of future generations Note: These endpoints are suggested by Kapow Primary.
	To know the names of some visible objects and materials.	To know that some things humans use are natural and some are human-made. To know the difference between objects and materials.	To know that some things humans use are essential to their survival and others are not (i.e. needs vs wants).	To know that a resource is anything that can be used to solve a problem or achieve a goal. To know that water is an essential natural resource. To know that not all countries or regions have the same resources and this can affect the lives of the people who live there. To know that countries may rely on trade, including imports, to give them access to certain resources they do not have themselves, such as food, goods and metals.		To know that some natural resources are used to generate energy including electricity and heat. To know that many forms of transport use non-renewable resources. To know that renewable resources (e.g. sunlight, wind) are naturally replaced quickly, while non-renewable resources (e.g. coal, oil) take millions of years to form and cannot keep up with demand. To know a wider range of resources that are useful to humans and where they are distributed in the world.		

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Waste	Identifying what can be used again and what needs to be thrown away.	Identifying materials in everyday items (e.g. plastic bottles, glass jars) and suggesting which ones can be recycled.	Suggesting ways to reuse everyday items. Explaining why littering can be harmful to animals.	Explaining what happens to our household rubbish and recycling. Identifying materials that break down more easily in the environment. Explaining that reducing waste is better than reusing and reusing is better than recycling because it prevents waste from being created in the first place.		Exploring examples of how the waste hierarchy works in real-life scenarios. Evaluating how waste is dealt with in a setting and suggesting how to make it more sustainable.		Pupils should: • Recognise that humans must use resources sustainably in order to meet our needs in the present without compromising the needs of future generations Note: These endpoints are suggested by Kapow Primary.
	To know that some objects cannot be used again and others can.	To know that some materials are used only once and thrown away, while others can be reused or recycled.	To know that reusing items, like bags or containers, reduces waste. To know that waste which is not recyclable can remain on Earth for a very long time.	To know that many natural materials decompose over time and return to the earth. To know that many human-made materials do not decompose easily and cause long lasting pollution. To know the waste hierarchy: reduce, reuse, recycle.		To know that reducing, reusing and recycling waste conserves resources and energy. To know that manufacturing and transporting items use hidden resources (such as water, energy and fuel) and that when items are thrown away these resources are also wasted. To know that managing waste carefully helps protect nature now and in the future		

Climate change

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Understanding climate change	Observing and describing simple weather changes.	Describing seasonal weather patterns and recognising that sometimes they are different.	Identifying weather in different parts of the world.	Explaining how climate is different from daily weather.		Identifying simple ways which show evidence of climate change.		Pupils should: • Understand that climate change is a long-term change in the Earth's climate. • Recognise some of the human activities that contribute to climate change. • Understand some of the effects of climate change.
	To know that the weather changes daily and across seasons.	To know that the UK's weather can change over time.	To know that weather is different around the world.	To know that climate means the usual weather of a place over a long period of time.		To know that climate change is a long-term change in the Earth's climate, influenced by natural and human factors.		
Human impact on climate change	Taking part in familiar tasks that help the environment.	Suggesting ways to look after animals and plants.	Describing ways to keep the school clean.	Describing deforestation and how humans can help. Suggesting ways to help local wildlife adapt. Discussing imported and food grown at home.		Researching organisations that assist with climate change projects. Suggesting energy alternatives and sustainable products. Investigating how humans affect the environment both positively and negatively.		
	To know that people can take care of the environment by making good choices.	To know that people can take care of plants and animals.	To know that humans can help keep the air and land clean and create less waste.	To know that plants and animals can adapt to some environmental changes with human support. To know importing and exporting food has an impact on the environment.		To know that people can use renewable energy to reduce the impact of climate change. To know that people around the world are working together to protect the environment and reduce the effects of climate change. To know that innovative technologies help reduce climate change effects.		Note: These endpoints are suggested by Kapow Primary.

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Effects of climate change	Identifying how they feel when they are too hot or too cold.	Identifying how much water plants need to grow. Describing how to help animals if they are too hot or too cold (e.g. bringing rabbits inside in winter, not walking dogs at the hottest time of day).	Describing different habitats from around the world. Explaining which animals and plants belong in which habitats. Describing how different weather conditions allow different plants to grow. Describing how animals depend on plants for food and shelter.	Identifying examples of plants or animals that are now present in locations where they were not previously. Describing how climate change can affect the water cycle.		Describing positive effects linked to climate change. Describing some negative effects linked to climate change.		Pupils should: • Understand that climate change is a long-term change in the Earth's climate. • Recognise some of the human activities that contribute to climate change. • Understand some of the effects of climate change.
	To know that changes in weather can affect people.	To know that changes in weather can affect plants and animals.	To know that plants and animals need specific weather to grow and survive in different places around the world.	To know that some animals colonise new areas due to changes in climate. To know that crops can be grown in different regions as climate changes. To know that changes in the water cycle can lead to flooding or droughts.		To know that there are positive effects of climate change (e.g. new species colonisation, new crop opportunities, commitment to sustainable choices). To know that there are negative effects of climate change (e.g. habitat loss, changes in weather, sea level rise and coastal erosion)		Note: These endpoints are suggested by Kapow Primary.

Individual and collective responsibility

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Taking action	Participating in simple environmental tasks.	Joining in with small, teacher-led projects.	Following steps to complete a simple project with others.	Planning and carrying out a local project with guidance. Designing and implementing a small-scale sustainability project.		Organising and managing a project from start to finish, evaluating its impact. Developing and presenting solutions to real-world environmental issues in the school or community.		Pupils should: • Understand some lifestyle changes they can make to reduce their impact on the planet. • Understand that changes can be made at different scales; personal, local, national and global. • Understand that working together is essential for creating positive environmental change. Note: These endpoints are suggested by Kapow Primary.
	To know that small actions can help the environment.	To know that helping with a task can make a difference.	To know that projects involve planning and doing tasks.	To know that projects can help solve local environmental problems. To know that local environmental projects can inspire wider community involvement.		To know that successful projects require reflection and adaptation. To know that solving environmental challenges requires creative thinking and persistence.		
Working together	Taking turns and listening to others in group activities.	Sharing simple ideas and participating in group activities.	Working with people who have different ideas to achieve a goal.	Taking on a role in a group and contributing to a shared project. Taking responsibility for a specific role in a group to contribute to the success of a shared sustainability project.		Leading or facilitating a group to achieve a shared goal. Leading a team by assigning roles and supporting others to complete a sustainability project.		
	To know that working together can help solve problems.	To know that working in a group means sharing ideas and tasks.	To know that different people bring different ideas to a group.	To know that collaboration involves sharing tasks and responsibilities. To know that successful teamwork requires listening to others and valuing different ideas when solving environmental problems.		To know that effective collaboration requires compromise and respect for different views. To know that leadership involves motivating and guiding others to achieve a shared environmental goal.		

Individual and collective responsibility

	EYFS (Reception)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	By the end of primary school
Making a difference	Sharing simple ideas for helping the environment.	Choosing simple actions that help.	Identifying local problems and suggesting solutions.	Advocating for simple changes at school or in the community. Reflecting on how personal and group actions have helped improve the local environment.		Persuading others to join efforts for long-term local sustainability. Evaluating the success of sustainability projects and suggesting ways to improve or expand their impact. Explain how pressure groups could bring about change on a national or global scale.		Pupils should: • Understand some lifestyle changes they can make to reduce their impact on the planet. • Understand that changes can be made at different scales; personal, local, national and global. • Understand that working together is essential for creating positive environmental change. Note: These endpoints are suggested by Kapow Primary.
	To know that everyone can make a small difference.	To know that actions like recycling or caring for plants can improve the local environment.	To know that small actions can lead to visible changes.	To know that change happens through effort and teamwork. To know that making small, positive changes can encourage others to take action too.		To know that sustained change requires ongoing commitment and leadership. To know that pressure groups can be started by a person or group of people.		

Climate change and sustainability vocabulary.

There is a wide range of vocabulary related to climate change and sustainability and it can be challenging to determine the right time to introduce these terms without overwhelming pupils.

This progression of knowledge and skills has been designed to introduce key terminology at appropriate stages, ensuring it aligns with pupils' developing knowledge and conceptual understanding.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
animals human-made material natural nature plants recycle single-use waste weather	environment food chain fumes habitat human feature needs physical feature reuse survival transport wants	climate decompose deforestation endangered drought flood import natural resource pollution reduce resource		adaptation alternative biodiversity climate change conserve/conservation energy fossil fuel global warming greenhouse gases non-renewable organisms renewable sources sustainable	

Although terms like 'carbon', 'carbon footprint' and 'carbon dioxide' are commonly associated with climate change, they have been omitted from this KS2 vocabulary progression as they are formally introduced in the KS3 science curriculum. While these terms may be briefly referenced in lessons to support understanding, the focus at KS2 is on developing foundational knowledge about human impact on the environment and sustainability in an age-appropriate way.

Version history

This page shows recent updates to the document.

Date	Update
24.03.25	First created.
22.05.25	Amended wording on p. 5 to express that Geography, Science and RSE&PSHE subscribers have full sustainability progression coverage.
13.06.25	Removed biodegradable as a key word. Amended statements to reflect this.