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Department for Digital, Culture Media & Sport

COMMUNITY FUND

Ormiston Trust
Improving life chances

Learning About Climate Change as Part of Youth Social Action

Staff Guide and Lesson Plans for Key Stage 1

BOA Creative, Digital & Performing Arts Academy

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The #iwill Fund is made possible thanks to a £54 million joint investment from The National Lottery Community Fund and the Department for Digital, Culture, Media and Sport (DCMS) to support young people to access high-quality social action opportunities. Ormiston Trust acts as a match funder and awards grants on behalf of the #iwill Fund.

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An Overview of Our Youth Social Action Resources

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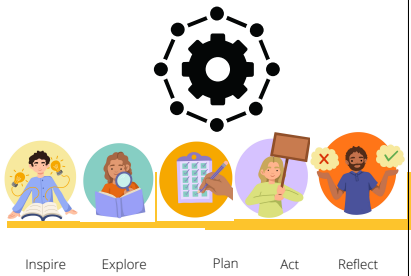
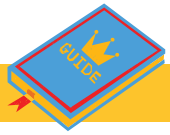


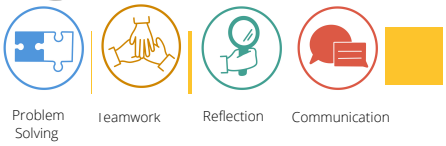
A comprehensive guide to support the leaders and teacher through the Youth Social Action Process.

2 Implementation Model Guide



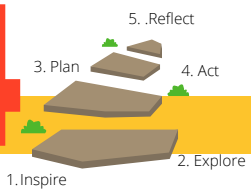
These guides will support the leaders in exploring different models which can be adopted to implement YSA into the school.

3 Skills Guides



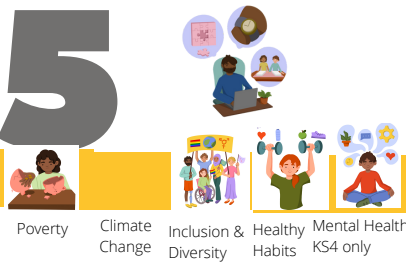
Skills guide focusing on our key skills such as Problem Solving, Teamwork, Reflection and Communication.

4 5- Step Process



The 5 step process consists of: 1. Ispaire, 2: Explore, 3: Plan, 4: Act and 5: Refect. This is a core part of the YSA process guiding the young people through the project.

5 Curriculum Guides



Comprehensive guides to support the teaching of YSA through Poverty, CLimate Change, Inclusion and Diversity, Healthy Habits and Mental Health

6 Passports

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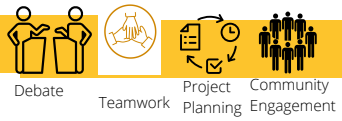


Detailed guides are available to support teaching additional skills such as Debate, Teamwork, Project planning and Community Engagement.

8 Additional Guides

Additional resources to be developed are:

9 Case Studies

The main aim of the case studies are to provide the users with an overview of YSA projects with lessons learnt to support. These are projects within our core and external schools.

10 Online Resources

All our resources are available on line free of charge.

11 Whole School Quality Assurance

The quality assurance document supports the leaders with the assessment of YSA practise within their educational setting. Allowing them to reflect and plan next steps.

Next Steps

Engaging young people in social action

Social action teaching in the primary classroom

Youth social action is when young people work together to tackle common challenges that directly impact their lives and/or the lives of other people in their community/city/world. However, the quality of the teaching is a determinant factor in the realisation and progress that young people will make through the process.

One aspect of quality social action teaching is developing a culture of asking ‘good’ "good" (open–ended, thought–provoking, and clear) questions related to the study topics in the classroom. A good way to start is to simplify the planning of activities by engaging children with simple resources that introduce them to the focus area and raise their awareness of how this affects their lives. As a rule of good practice, teachers should try to scaffold the activities that teach social action skills in a child-led manner by getting children to think about the problem they want them to think about rather than by telling them. This way, pupils take ownership of their learning and are more likely to develop the intended skills.

With very young people, this work and attitude to learning can become part of the learning culture by getting pupils used to observing the outside world: ‘What is special about my school?’; ‘Who are the people working in my school?’; What do they do for us?’; and look at what they are willing to investigate to inform my social action planning. This could start by taking notes of what problems they notice and allowing them to investigate further and act. Educating pupils promotes 21st-century knowledge and skills and builds their social-emotional competencies.

Using the 5 step Process to Support Thinking in Youth Social Action

Delivery of Youth Social Action

The social action project can be delivered through your school's curriculum design. It can link to a specific subject area or be undertaken during enrichment/pastoral time, combining this as an extra-curricular activity. In the second section of the guide, you will find a progression of activities that can be used to teach the skills that Young people need, either to get involved with an existing social action project linked to the focus area or to develop their own. Below are three tables outlining how the teaching of skills and the realisation of the social action project could be mapped out over an academic year.

This guide is based on the **#WeWill** process enabling young people to learn transferable skills through social action. This process follows three key steps. Each process can be repeated by making further progress on the chosen area or starting a new topic. Section one of the guide focuses on giving the teachers/adults involved the information needed to deliver the overall topic.

Key Stage 1 - Three step process

	Young people are engaged in a theme related to the focus area of the social action project.
 	Look at existing practices, and investigate deeper into the cause of the project
 	Young people plan a project showcasing the skills, which they have learnt.

The resources below are to support the teaching of the skills needed so young people can carry out their own social action projects. It should

- Introduce young people to the subject of Climate Change
- Go through the process of understanding social action by analysing an approach already taken.
- Inspire young people to interact within a school, community, or city
- Support the delivery of step 2 of the process explore and learn

Each lesson plan lightly integrates learning or practice of a specific life/employability skill such as oracy, teamwork, reflection and problem-solving. In addition, each lesson links learning to potential youth social projects that other young people have delivered to make a difference. The lessons are typically provided during step 1&2 of the Ormiston youth social action 3-stage process, which differs from Key Stages 1, 2, 3 and 4.

It is essential that the teacher (any adult supporting the learning) emphasises the key skills that are being covered at each stage. The skills are transferable and can be applied across a range of different subjects and contexts. Below are examples of possible delivery methods. The resources are adaptable and can be taught in line with your curriculum model.

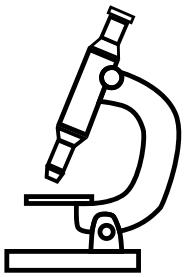
Explore and Learn

	Young people are engaged in a theme related to the focus area of the social action project.
 	Look at existing practices, and investigate deeper into the cause of the project
 	Young people plan a project showcasing the skills, which they have learnt.

Social Action Curriculum Integration Map

The following curriculum maps provide links to integrate work on the Environment and Sustainability within the National Curriculum at Key Stages 1 it can be read to obtain an overview of the links that can be made with the National Curriculum. It can also be used to inform the planning of activities that will teach social action skills or inform future social action planning.

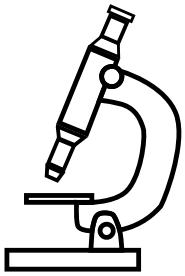
Key Stage 1 - Year 1

Reading 	Suggested text for protecting and valuing nature: **'One World'** Michael Forman **'10 things I can do to help my world'** Melanie Walsh **'Green'** Laura Vaccaro Seeger **'Follow the moon home'** Philippe Cousteau **'Me...Jane'** Patrick Mcdonnell **'Grandpa's garden'** Stella Fry **'Miss Maple's seeds'** Eliza Wheeler '**The falling leaf an adventure with nature'** Luis Alexander Burgado **'Du Iz Tak'** Carson Ellis **'We planted a tree'** Diane Muldrow
Science 	Possibility to explore further the role of common wildflowers and plants in relation to smaller insects constituting the local biodiversity. For example this can be done by exploring questions such as 'What do flowers do for bugs?' 'Why are bugs around flowers?' Equally, when learning about specific animals and their habitats, young children can start exploring questions promoting exploration of nature. e.g. 'What will we see and learn from a farm visit?' or 'What shapes are different seeds?'
Geography 	When carrying out fieldwork either on the school grounds, in a local park or on a school trip, pupils can begin to identify what grows where? Why are those trees or plants special? They could study a specific question such as 'What plant is a home to an animal?' and locate where particular plants or trees are around the studied area.

Key Stage 1 - Year 1

Geography 	When carrying out fieldwork either on the school grounds, in a local park or on a school trip, pupils can begin to identify what grows where? Why are those trees or plants special? They could study a specific question such as 'What plant is a home to an animal?' and locate where particular plants or trees are around the studied area.
Art 	Collect leaves and other natural materials to create a transient artwork. Paint a meadow or fruit artwork. Create a collage of a landscape. The book **'Bee: Nature's tiny miracle'** by Patricia Hegarty contains beautiful illustrations that can inspire artwork using geometrical shapes to represent nature. Young people can explore shapes that are found in nature: a cross-section of fruit, a snowflake, honeycomb, etc.
Design and Technology 	Possibility to link with the Forest School Association to complete building and making activities in nature that allow young children to connect to the natural world.

Key Stage 1 - Year 2

Reading 	The following texts can be used to inform planning and connecting to topics on environmental issues: **'It's Up to Us'** Christopher Lloyd **'The Watcher'** Jeanette Winter **'The Bee Book'** Charlotte Milner **'The Water Princess'** Susan Verde **'Bee and Me'** Alison Jay **'Don't let them disappear'** Chelsea Clinton **'Follow the moon home'** Philippe Cousteau
Science 	Young people can grow and look after a garden or grow in pots. This can include fruits and vegetables or flowers. They can create a booklet with tips to grow plants when learning about plant growth. They can learn about bees and other pollinators. This can inform a lot of creative science work around learning how a beehive works together, and what does it mean for how we work together as a group.

Key Stage 1 - Year 2

Geography 	Create a map of the world or booklet/ flap book with the different oceans and climate of the world.
Art 	Young children can use art as a medium to communicate what they have learnt on nature; why it is important; the changes they observed through the seasons; how does it make them feel good and what have they learnt that makes them want to know more about it. This could take the form of a display, exhibition or assembly.
Design and Technology 	If studying methods of transport in Geography such as trains, or planes, pupils can think about another mean of transport they could create with recycled materials. This could be the focus of a D&T project. Another project could be about building a bug hotel, or a bird house.

The Project Planning Process for Primary School Pupils

By this stage, pupils would have completed a series of activities at Key Stage 1 or 2 levels introducing them to social action around the focus area.

The skills developed through the progression of activities will help the child understand how to approach social action planning. Young people would naturally want to engage with the social action enterprise. So to plan for this effect, we have provided guidance below to help practitioners to guide children through the process of managing their projects step by step. The process steps below should support the teachers in facilitating the planning and monitoring of the progress of projects. If pupils need additional resources to reinforce skills, please refer to the skills guide at the skills guides. The skills guide has other resources which can be shared with pupils at the start or end of a lesson.

Process Steps for Key Stage 1

	**Engage:** The activities on the topic of Climate Change would have inspired pupils to carry out a social action project. The teaching should now centre the work on one area of social action that will inform the teacher's planning for the rest of the term/year, depending on how this is delivered. ***Skills developed:*** *developing empathy, social-emotional competence, thinking in groups and communicating ideas.*

 	**Assess formatively:** Based on the activities young people have completed, decide on an area that young people want to further investigate.	**Connect to others:** Help the young people to connect with people from the school/community or external partners to obtain more information or discuss ways the young people can help. ***Skills developed:*** *teamwork, communicating.*	**Explore and gather information:** Plan for opportunities for young people to explore ways they could solve the problem identified. This will involve preparing resources for them to explore and learn from.	**Review:** With the help of the teacher young people should review what other information they have found out, and how it will help them to create a change. ***Skills developed:*** *applying learning, problem-solving, communicating, sharing ideas.*

 	**Outline planning:** Teachers should generate 'steps to success' with the young people so they can understand and see how their project can be carried out to completion. Next, the young people should work in their groups to outline a plan of their social action project. Again, this could either be organised for different groups to propose a plan for one social action project, or different groups creating different plans that will be used to work on different tasks feeding into the social action project. ***Skills developed:*** *planning, listening to others, presenting ideas.*	**Doing and making:** The making should be spread over several sessions whether this includes writing, doing D&T, IT, Science work, etc. We recommend blocking a longer slot each of the days when pupils are working on this so that they have enough time to complete each part. ***Skills developed:*** *21st century skills, social-emotional development.*	**Delivering:** Young people should be given the opportunity to reflect on the previous series of sessions and before delivery some planning may need to be done to make sure the next part will produce the best outcomes. ***Skills developed:*** *21st century skills, social-emotional development.*	**Sharing and celebrating:** This part is to celebrate and reflect on their achievements. It could involve showcasing their work with the school and community as well. ***Skills developed:*** *social-emotional development, growth-mindset, presentation, oracy-skills development.*

Climate Change and Youth Social Action

In addition to valuing the diversity in our students, the choice of learning that we get students involved with can also reflect this diversity. Working on a social action project that provides students with new learning outcomes can be a starting point. Generally, the more we move away from a monoculture of learning to create learning opportunities producing a range of outcomes. This enables us to tap into students' interests and skills, giving them a sense of ownership in the work they get involved in.

If working on a social action project on Climate Change, giving Young people more freedom to choose and lead the work, and letting them see where it takes them, will provide the best outcomes. In terms of teaching and learning outcomes, it helps teachers develop ways of teaching subject-based skills and knowledge in a much more engaging way, ultimately motivating students even more to learn.

Below are steps to explain how to use a theme on Diversity to structure the social action project:

1 Start with a question that serves as a focal point for the learning that will take place. *e.g: 'Why is diversity essential to the functioning of nature?'*

2 Provide exploration routes for the students to shape their thinking around the question. This can take the form of a trip, an afternoon exploring resources or watching a documentary.

3 Get the students to gather up in groups linked to their area of interests around the topics and create opportunities for them to investigate further.

4 Their investigation may lead to the identification of problems that can open the premisses of a future social action project or the actual knowledge that they develop and will continue to grow.

Through further investigation can be used as educational training for them to build their own action projects in the school/community.

Background Reading

The following overview provides background knowledge for school staff to feel confident when approaching social action planning in primary schools addressing the problems of climate change and pollution.

In the National Curriculum, the core scientific knowledge that leads to an understanding of climate change is taught from key stage 1 (KS1) to key stage 2 (KS2):

- Learning about the Earth's movements around the Sun and the changes observed through the seasons and the water cycle
- Teaching on the composition of the atmosphere, the effects of carbon dioxide produced by human activities, and the interaction between pollution and the interdependence of biodiversity is covered in Science at key stage 3 building up from KS1-2
- The Geography curriculum teaches knowledge about climate and weather worldwide and gives opportunities to study the local area through fieldwork. Human geography, including types of settlement and land use; Economic activity, including trade links; and the distribution of natural resources, including energy, food, minerals and water
- The statutory requirements of the Science and Geography curriculums provide a framework of core knowledge leading to an understanding of climate change
- Food technology covers the understanding of seasonality and knowing where and how a variety of ingredients are grown, reared, caught and processed

Recent government publications on the Sustainability and Climate change strategy for the education sector set new directions for school systems. Leading excellent educational opportunities for a changing world impacted by climate change will require

- Giving early access to environments created for children that allow them to connect with nature and value its preservation
- Developing education that better understands the evolving facts related to the climate crisis and takes action within schools to reduce direct and indirect emissions on site
- Getting young people to participate in implementing climate adaptation measures (net zero) within schools to develop resilience whilst experiencing the changes in the climate
- Participation in program activities that enhance biodiversity and air quality and empower children to take positive steps to improve their local community, country and planet

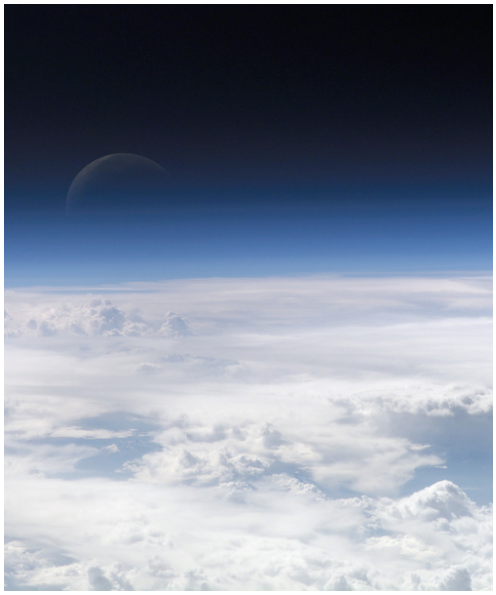
Consequently, any planned social action work on environmental issues and sustainability can be a starting point for schools to develop their curriculum and practice. We also recommend staffing interested in sustainability education to access regular publications by the **Common Worlds Research Collective** and the **UNESCO Futures for Education,** which provide updates on environmental research and directions for global education, as well as **The Harmony Project** in the UK, which is a charity organisation providing the means for schools to adopt a whole-school transition into sustainable education, fully in line with Ofsted requirements. For more information, go to: **https://www.theharmonyproject.org.uk/**

Understanding Environmental Issues

The natural environment is the totality of the natural world that humans have inherited. The atmosphere is threatened when external physical conditions affect and influence organisms' growth, development, behaviour, and survival.

A. Earth, Atmosphere and Water

Planet Earth is the only planet in our solar system able to support life. This life is made possible through the presence of **water, breathable air, a climate conducive to life, and solar energy.**



The **Earth's atmosphere** is made of layers of different gases that protect life on Earth by shielding ultraviolet radiation from the Sun. This layer insulates the planet to maintain the climate and prevents extreme differences between daytime and night-time temperatures when Earth does not face the Sun. Between the Earth's surface and the atmosphere occurs a greenhouse phenomenon.

The Greenhouse effect (named after the role of glass in maintaining temperature in a greenhouse) is a natural process thanks to which the temperature brought by the warmth of the sunlight remains at an average around the Earth's surface; maintaining this way a temperature that is compatible with the presence of water and life as we know it.

This occurs when sun radiations enter the atmosphere, reach and warm up the Earth's surface and are reflected into the sky. Some of this heat will return into space while some remains trapped in the atmosphere.

The natural process of trapping some of the heat occurs through heat absorption by water vapour (H_2O) and cloud formation, whilst some happen through other heat-trapping gases, also called greenhouse gases.

To be a greenhouse gas, the gas must be able to absorb and emit longwave radiation in a planetary atmosphere. So the action of these gases in high concentration is that they prevent radiations from going back into space and contribute to the natural greenhouse effect responsible for maintaining the climate. One of these heat-trapping gases is carbon dioxide (CO_2), which is essential for plant life to be sustained in small quantities. This carbon dioxide is naturally emitted through decomposition, ocean release and respiration.

Nature and Biodiversity

Nature is a complex network of elements and living organisms that interact. The diversity of species of plants and organisms found in nature is essential to support life on Earth, including human life.

Each species possess a genetic heritage providing for the defence of biodiversity and going beyond to preserve the genetic origin of the planet. If one species disappear, it is a genetic library that disappears. If the wide diversity of animals, plants, and microorganisms disappeared, we would not have healthy ecosystems providing us with the air we breathe and our food. Each element has a specific role to play in sustaining the natural system.

The Impact of Human Activities on The Environment

A. Climate Crisis

Over time the increase of heat-trapping gases in the atmosphere due to human activities increase the greenhouse effect. These gases include an expansion of Carbon dioxide emissions (CO_2) due to burning fossil fuels, deforestation, and industrial processes. Methane (CH_4) comes from the energy, agriculture and waste sector. Nitrous oxide (N_2O) and Fluorinated gases are emitted through refrigerators, air-conditioners, foams and aerosol cans.

These rising temperatures produce changes in precipitation patterns and severity of storms and cause glacier melting, leading to sea level augmentation. The glaciers spread around the globe are responsible for climate regulation because they reflect 95% of the sunlight into the sky through their white appearance. This allows them to maintain low temperatures in their surrounding environment and viable temperatures around the planet. The climate of our world has always functioned in this way..

The rising sea level directly affects the total mass of Earth we have access to. We can only live on 30% of the mass of the Earth, and we need this land to thrive. The rising sea level causes erosion, damage to coastal areas, loss of land, and floods. The increasing sea level pushes hurricanes and tropical cyclones to move farther inland. Combined with the higher temperatures, it increases the severity of these storms and their frequency. Warmer temperatures intensify evaporation in regions with drier seasons, reducing surface water and drying soil and vegetation. Periods of precipitations are low, which engenders droughts. Climate change is also altering the timing of water availability: warmer winter temperatures are causing fewer precipitations to fall as snow in regions like the Northern Hemisphere. It changes the variations of rainfalls, which increases the alternation between periods of extreme rain and droughts.

Warming of the climate and oceans also impacts the lives of living organisms and animals. The new field of studies on the effects of a warming environment on animals found an impact on the migration and movements of groups of animals. Warming waters affect the spawning of certain fish species and disorientate underwater displacement. Both underwater and on land, the warming climate increases the population of certain parasites that can be harmful to certain species. The warming of the climate affects the landscape, which for species that need camouflage for their survival will cause a decline in their population. The warming environment also affects access to food sources for animals and, in some cases, already a complete loss of habitat like polar bears in the Arctic.

Pollution

As well as the effects of heat-trapping gases, pollution has a devastating impact on the quality of air, water and soil, of which preservation is necessary for our health and that of the ecosystems. As for greenhouse gas emissions, pollution is linked to human activities. Air pollution happens when solid and liquid particles, called aerosols, get stuck in the air. This is often related to human activities by releasing particles from factories and truck exhausts. Gases can also cause air pollution. For example, Ozone (O3) is a gas essential to shield sun radiation in the outer part of the atmosphere.

In contrast, when Ozone is created above the Earth’s surface through the sunlight reaction to certain chemicals coming from sources of fossil fuels, it makes a type of air pollution called 'smog’. Long exposure to air pollution is associated with heart and lung diseases and some cancers. The increase in wildfires linked to climate change also adds to air pollution. Industrial waste in the form of toxic chemical pollutants from agricultural sites contributes to water pollution.

This is because, in some cases, waste needs to be treated properly. This type of pollution can also occur from sewage and wastewater. When chemical waste joins natural water currents, it pollutes one body of water to another until it reaches the sea, endangering human health and living organisms. In parallel, due to the increase of carbon dioxide in the air, ocean acidification occurs in the top layer of the ocean, where algae and zooplankton absorb carbon dioxide. This acidity causes some animals to have difficulties making and keeping their shells.

Soil pollution largely occurs through food and farming activities and the introduction of pesticides and herbicides into the ground. Whatever their use, they cannot be broken down in nature as they are artificially made. Consequently, they seep into the ground, stripping away soil fertility and harming the ecosystems. Industrial activity also damages soil when waste is not properly disposed off.

Intensive farming activities such as intensive agriculture and livestock farming for meat have the largest role in biodiversity loss. Intensive farming pollutes air, water, and land altogether. It is responsible for countless other damages to carry these production activities: deforestation, use of chemicals in agriculture, development of zoonotic diseases, the release of CO2 emissions, and the disposal of slurry. The treatment of waste, not only gases but other human waste, is also a major contributor to the degradation of ecosystems.

Plastic pollution, for example, devastates the ocean's ecosystems and the life of marine animals. Many marine animals, like turtles, seabirds, fish, and mammals, have been reported ingesting or entangling in plastic debris, leading to impaired movement, reduced reproduction, acerations, ulcers, and death. This is a common problem in certain species since plastic often looks like food to these animals.

For instance, 95% of fulmar seabirds that wash ashore dead in the North Sea have plastic in their guts. One area of concern is microplastics, which are tiny fragments of plastic. They can be especially dangerous for animals since they absorb toxins and look like food, causing many marine animals to eat them. Unfortunately, microplastics are extremely hard to remove and can be present in everyday items like toothpaste.

Solutions and Sustainability

The interlinks between human activities and the problems of climate change and pollution show that solving these problems cannot be solved by isolating them and dealing with them.

Solution 1: Preserving and Restoring Nature's Ecosystems

One of the first threats to biodiversity and the destruction of habitats is soil and water pollution. The Zoological Society of London (ZSL) estimated in 2008 that 40% of species could disappear within the next fifty years. In 2019, the European Commission estimated that 59% of freshwater molluscs, 58% of endemic trees, 40 % of freshwater fish, 23% of amphibians, 20% of reptiles and 17% of mammals were threatened with becoming extinct.

Preserving natural habitats is an indispensable condition for developing animals and plant species. Firstly, around agricultural lands, the preservation of plants is vital to the survival of animals. Trees, hedges, copses and water streams that separate fields are pools to maintain biodiversity. These landscape elements also compete for better storage of underground water that protects reliefs against erosion and limits leakage of phytosanitary products in water streams. They assist the soil culture by providing shelter to predators that feed on pests without chemical interventions and allowing pollinating species to fertilise cultivated plants. Secondly, woodlands must be protected as they preserve plant species, trees and wildlife. New tree planting projects and undertaken initiatives compensate for carbon emissions but are not the sole solution.

Reinforced protection of oceans has to become a priority. Beyond 250 000 animal species and millions of plants are greatly threatened. Beyond the uncountable species we have to protect, the oceans' resources allow us to feed at least 3 billion people, absorb 25% of CO2 and generate 50% of the planet's oxygen. We can not underestimate their role.

Since non-recycled and incinerated waste ends up in the ocean, all of the pollutants that are threatening it are not counted anymore: plastic waste creating continents, algae and other i

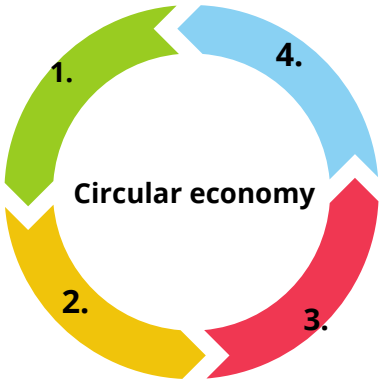
invasive species proliferation, chemical and oil pollution, acidification of water, dust clouds created by underwater mining, mangrove and coral reefs destructions (20% have already disappeared and 70 to 90% are threatened to disappear before 20 years.) Massive action to reduce plastic waste must be undertaken (150 million tonnes of plastic pollute the oceans today, and 9.5 million are added annually).

Developing and Sustaining a Cyclical Economy

According to the UN, the consumption of primary resources will have tripled by 2050 to reach a level unbearable for the planet. A circular **or cyclical economy** is defined as an economic system of exchange and production that, at all levels of the cycle of life of the products (goods and services), aims at increasing the efficiency and use of resources, reducing then its impact on the environment whilst developing the well being of individuals. The aim is to disconnect the production and service of natural resources through reuse and recycling. This loop can be summarised by the following cycle:

1. The conception of an environmentally responsible product*
2. Production from recycled materials
3. Consumption
4. Recycling and production of a new product made from recycled materials.

*a good or a service



Develop an Energetic Model That Reduces CO2 Emissions.

Industrialised countries agreeing to reduce their CO2 emissions have adopted a **mixed energy strategy** by reducing energy production that releases CO2 emissions by allocating a part of the energy production to clean energy sources. Whilst this has allowed some countries to reduce their emissions, it is not meeting the need for a drastic reduction of CO2.

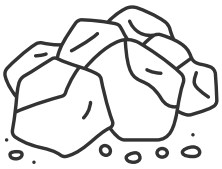
Regarding climate change, net zero is a term established to restore the balance of greenhouse gases in the atmosphere. Regarding the responsibility of human activities for heat-trapping emissions, it does not account for differences in the origins of gases responsible for increasing the greenhouse effect or pollution.

It is approached as a response to counterbalance emissions by activities that have a negating effect. For example, some industries operate with higher fuel consumption as long as other activities and initiatives negate these. On the next page is a list of the different energies used today.

Types of Sources of Energy

Fossil Fuel Energies

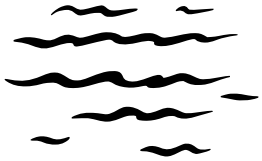
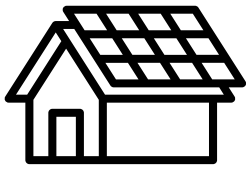
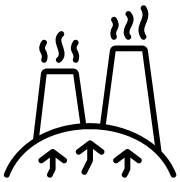
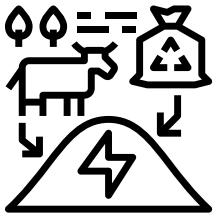
Fossil fuels were formed from animals and plants that have been buried and fossilised over the space of millions of years. They have an extremely high carbon content, perfect for creating energy. People started to use fossil fuels to generate power in the 1880s when coal was first used to give electricity to homes and factories. They were essential in the Industrial Revolution. Below is a list of the different fossil fuel energies:

Natural gas 	Natural Gas is a non-toxic hydrocarbon that is highly flammable, odourless, and colourless. It can be a gas or liquid.
Oil (or petroleum) 	***Oil (or petroleum)*** – a liquid once extracted from reservoirs below land or ocean floor can then be converted into car and aeroplane fuel, among other things.
	***Coal*** – is possibly the most harmful to the environment. Coal is a combustible carbon-based black rock that we burn to gain energy.

Renewable Energies

Renewable energies are also known as flow resources, natural resources that can renew despite consumption. This can be achieved through biological reproduction or other repeating processes. This allows us to use energy without worrying about finite resources because they regenerate.

Wind 	*Wind* – the motion is used to generate electricity. Simply put, the wind is created by the sun's heat and the Earth's rotation, something called the Coriolis Force. A wind turbine is used to draw energy from air currents.

Ocean 	*Ocean* - The rising and fall of the tide can be harnessed to generate electricity. A tidal current turbine (like a wind turbine) or tidal stream generator collects the energy from the water currents.
Hydro Power 	*Hydropower* - similar to the ocean, uses water's motion to produce electricity. Still, the key difference is that any wetness can be used, so a tidal current turbine does not need to be used.
Solar 	Solar – energy can be collected from the sun's heat through solar panels to generate electricity, heating, and lighting.
Geothermal 	Geothermal – generates electricity by using heat from underground trapped in the Earth.
Biomass Energy 	Biomass – this is the most versatile and reliable renewable energy source. Biomass refers to animal and plant materials such as wood chips, food waste, or other organic matter. Once energy is extracted from biomass, it can be used for chemicals, fuel to power vehicles, heating, and electricity

Teaching Activities

The resources below support the teaching of the skills needed so pupils can carry out their own social action projects. It should:

- Introduce the young person to the subject of **environment and sustainability.**
- Go through the process of understanding what social action is by analysing an approach already taken.
- Inspire young people to act within a school, community, or city.

It is essential that the teacher (any adult supporting the learning) emphasises the key skills that are being covered at each stage. The skills are transferable and can be applied across a range of different subjects and contexts. Below are examples of possible delivery methods. The resources are adaptable and can be taught in line with your curriculum model.

Over View of KS1 Teaching Activities

Lesson 1: What Things Do I like In Nature?	
Learning Objective To explain the different elements of nature	**Skills Objective**  Problem-Solving - I can recognise what i am good at  Problem-Solving - I can start to identify the questions to resolve the issue

Lesson 2: How Does The Wind Help to Grow Plants?	
Learning objective To be able to explain how each element has a role in nature through a story-acting session.	**Skills Objective**  Communication - I can plan what needs to be shared

Lesson 3: How Can I Grow a Garden?	
Learning Objective To discuss how to plant a garden.	**Skills Objectives**  Teamwork - I can work with others

Lesson 4: How Can I Write Instructions to Grow and Look After Plants?	
Learning Objective To be able to illustrate how to grow and look after plants.	**Skills Objective**  Teamwork - I can support others in my team

Lesson 1: What Things Do I Like in Nature?

Learning Objective	**Skills Objective**
To explain the different elements of nature	Problem-Solving - I can recognise what they are good at Problem-Solving - I can start to identify the questions to resolve the issue
Outcome: Young people learn or know how to explore nature in a local area familiar to them. They can name some elements of it and explain why they like it. They have or are beginning to draw a sense of connection to the natural world.	

National Curriculum: Science identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
Identify and name a variety of common animals, including fish, amphibians, reptiles, birds and mammals

Time	**Teaching content**	**Support**
60 min.	This session should ideally take place in nature. If this is not possible on the school site, plan to go to a local park or another natural area. The session aims to help children to connect with a local natural area and be able to describe the nature and biodiversity found in it. The teacher would ideally know in advance what age-appropriate biodiversity (plants, insects, small animals) can be identified by the children involved. Extra resources can be prepared to help pupils identify these (look at the resources section).	Ensure that risks assessments are made if planning for the session to take place outside the school ground.

Lesson 1: What Things Do I Like in Nature?

Time	Teaching Content	Support
	By the end of the session, pupils should be able to: • Name some elements of nature that they explored. • Describe one element they either liked or felt familiar with and explain why • Describe things they feel curious about. Show a sense of connection to nature and value time spent outside. The teacher can finish the session by letting the children play in nature.	

Resources

1		Printable tree guides to be found on the Woodland Trust
2		Wildflower recognition sheet can be found

Lesson 1: What Things Do I Like in Nature?

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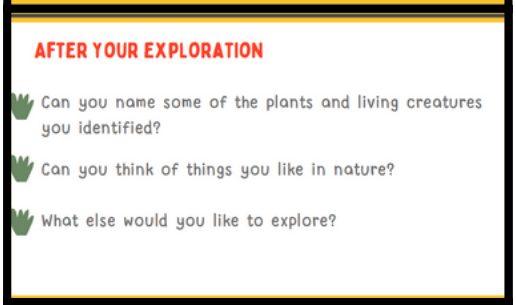

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Lesson 2: How Does The Wind Help to Grow Plants?

Learning Objective	**Skills Objective**
To be able to explain how each element has a role in nature through a story-acting session.	Communication - I can plan what needs to be shared

Outcomes: Young people can talk about the interrelationship between a flower, the wind and the soil. Through this session, they understand that each element has a role to play in the environment.

National Curriculum: Science - identify and describe the basic structure of a variety of common flowering plants, including trees

Time	Teaching content
40 min.	This session aims for pupils to learn that each element has a role in nature - this lays the foundations to understand at an older age the interrelationships sustaining life. To keep things simple and engaging for the children, we recommend looking at a story of seed dispersal between a wildflower such as dandelion, the wind and the soil. Please look at our presentation slides for resources to lead the story. Bringing a real dandelion that can be passed around to children can be helpful to visualise the seeds on the flower. We encourage teachers to lead the lesson as a play-role session. For example, the lesson could begin with the teacher using the slide to interact with the children and presenting the different elements to the children by acting the wind, the seeds flying out, etc. Then, the class could gather in a circle and follow the teacher's instructions to act out the different elements of the story.

Lesson 2: How Does The Wind Help to Grow Plants?

Time	Teaching content
40 min.	At the end of the session, children can draw a story-map retelling how the wind, the dandelion and the soil work together. This can open more investigations. For example, pupils may want to look at what other things work together and look at how a tree provides shelter for birds and squirrels and shade for plants. The teacher can decide what best investigation can be carried out based on the biodiversity found in the area.

Resources

1		A dandelion and its fluffy ball.

Lesson 2: How Does The Wind Help to Grow Plants?

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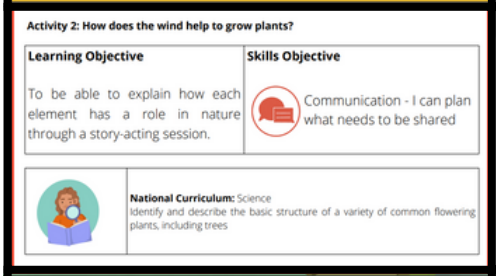

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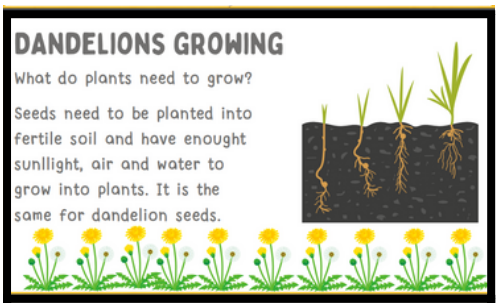

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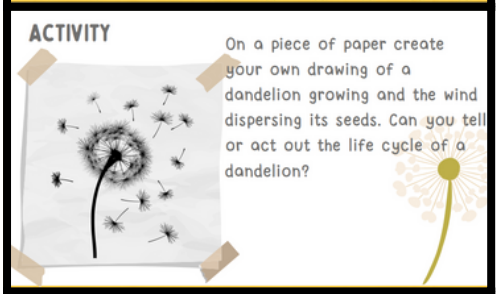

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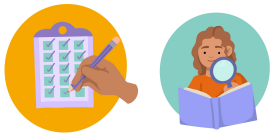
Lesson 3: How Can I Plant a Garden?

Learning Objective	**Skills Objectives**
To discuss how to plant a garden.	Teamwork - I can work with others.

Outcome Young people are beginning to learn how to enhance nature in a local area. They can explain what they need to do to plant a garden.



National Curriculum: Science - Young people should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted.

Time	Teaching Content
40 min.	Again, this session should ideally take place in nature, on the school ground. If this is not possible, then planting in flower pots or on a path around the classroom/school ground can do. The aim of the session is for pupils to look at the nature found in school/ near the school and identify ways this nature could be enhanced by growing a garden. School teachers should decide with the school community/leaders what is best to grow before leading this session. The following planting projects could be carried out: • planting a vegetable patch • planting a fruit orchard with small fruit trees • planting a wildflower path to attract pollinators • learning how to grow flowers and vegetables in pots • plant in a greenhouse The teacher will need to teach the skills to plant a garden. This may include looking at:

Lesson 3: How Can I Plant a Garden?

	• the tools needed • the seeds • how to choose a suitable area • how to plant We recommend focusing only on where and how to plant in this session, as this will be enough learning to engage with.

Lesson 3: How Can I Plant a Garden?

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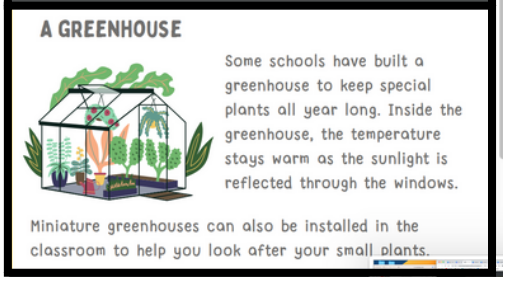

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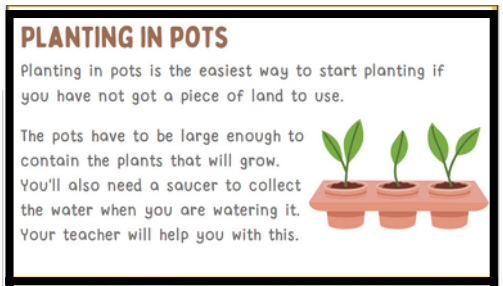

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Lesson 4: How Can I Write Instructions to Grow and Look After Plants?

Learning Objective	**Skills Objective**
To be able to illustrate how to grow and look after plants.	Teamwork - I can support others in my team

Outcome: Young people can explain how to look after their growing garden. They can write instructions to explain how to grow plants.

National Curriculum: English - Writing sentences, re-reading and checking for meaning. Learning how to use commands (Year 2)

Time	Teaching Content
40 min.	In this final session, children will write instructions to grow and look after a garden. This can be an opportunity to learn or review the use of commands in English The session will teach the children step-by-step how to plant a garden. Refer to the slides for this. At the end of the session, pupils could publish their writing and showcase their work to the school or explore other projects they could get involved with to enhance nature in school. This could include • Carrying out a vegetable tasting session to improve the choice of vegetables at lunchtime • Looking at ways to save water • Tell other children to stop throwing rubbish or bringing plastic to school. • Explore the biodiversity found in school and why bees and other pollinators are important. Whichever social action project they decide to carry out, this can be a mediator to pursue further work on sustainability in Key Stage 1 or later at the Key Stage 2 level.

Lesson 4: How Can I Write Instructions to Grow and Look After Plants?

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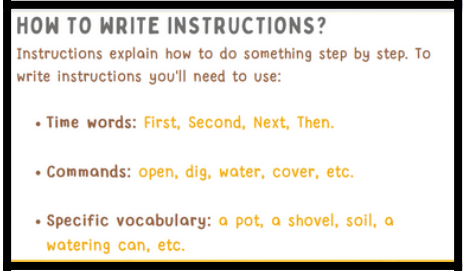

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