

Environmentalism in School Age Childcare





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Written by Jean Currid and Linda Lafferty

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Glossary

Atmosphere: A mixture of gases that surrounds a planet held in place by the gravitational pull of that planet.

Biodegradable: If a substance is 'biodegradable', it means that, given the right conditions and presence of microorganisms, fungi or bacteria, it will eventually break down to its basic components and blend back in with the earth.

Biodiversity: The term used to describe all the various kinds of living organisms (animals, insects, plants, fungi, and microorganisms like bacteria) found in one area.

Carbon footprint: A calculation of a person's impact on the climate based on how much carbon dioxide they produce through travel, home energy usage, etc.

Carbon neutral: Being carbon neutral means removing as much carbon dioxide from the atmosphere as you put in. A person can become more carbon neutral by cutting back on the carbon they produce, and by taking action to remove carbon from the atmosphere, for example, by planting trees.

Climate change: Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may result from natural factors, such as changes in the Sun's intensity, or from human activities that change the atmosphere's composition (e.g. through burning fossil fuels) and the land surface (e.g. deforestation and urbanisation).

Compost: Compost is the term used to describe when a person controls the breakdown (decomposition) of natural waste, such as leaves, vegetables and old fruit, to create a mixture (also called compost) that is used to fertilise and improve the soil.

Conservation: Conservation involves protecting species from extinction, maintaining and restoring habitats, enhancing ecosystems and protecting biodiversity, so that they can persist for future generations.

Deforestation: The removal of a forest or stand of trees from land that is then converted to non-forest use.

Ecosystem: A geographic area where plants, animals and other organisms, as well as weather and landscape, interact and interconnect to form a community of life.

Environmentalism: A belief or movement that aims to reduce the impact of human activities on the Earth and to protect nature.

Fast fashion: The mass production of cheap, poor quality, disposable clothing.

Food chain: A series of organisms that eat one another so that energy and nutrients flow from one to the next.

Fossil fuels: A fossil fuel is any class of hydrocarbon-containing material of biological origin occurring within Earth's crust, such as coal, petroleum, natural gas and oil, that can be used as a source of energy.

Global warming: Global warming is an increase in the temperature of the atmosphere near the Earth's surface, which can contribute to changes in global climate patterns. Global warming can occur from a variety of causes, both natural and human induced.

Greenhouse gases: Gases in the Earth's atmosphere that trap the Sun's heat and warm the planet in what is known as the greenhouse effect. The main gases responsible for the greenhouse effect include carbon dioxide, methane, nitrous oxide and water vapor (which all occur naturally), and fluorinated gases (which are synthetic).

Pollination: An essential part of plant reproduction, pollination is the act of transferring pollen grains, most often by an animal/insect or by wind, from the male anther of a flower to the female stigma.

Recreate: Often used in conjunction with Arts activities, this is about reusing unwanted, end-of-line surplus materials to create a rich selection of affordable and varied materials.

Recycle: Turning old, useless or waste materials into something new and useful.

Reduce: Cutting back on the amount of waste we generate.

Regift: Giving an unwanted gift to someone else as a gift.

Renewable energy: Renewable energy sources, such as wind and solar energy, are environmentally friendly and are naturally renewing and replenishable.

Repair: Fixing or mending something so it can be used again.

Repurpose: Adapting or using something for a new purpose.

Rethink: Carefully considering the environmental impact of our actions, e.g. considering what we buy to make sure it is durable and generates minimal waste.

Reuse: Extending the useful lives of objects and materials by giving them a second chance and finding new ways to use things that you would otherwise throw out.

Sustainability: The conservation of natural resources and the protection of global ecosystems to support health and well-being, now and in the future.



Introduction



As a society, we are more aware now than ever before of the impact that environmental concerns are having on our lives and will continue to have in our future. Environmentalism, sustainability and climate change have moved to the centre of the political and public agenda, with the 2021 United Nations Climate Change Conference, more commonly referred to as COP26, bringing parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. While not always going as far as some think necessary, leaders around the world are coming together to agree strategies to tackle environmental issues globally, companies are looking at how to mitigate the harmful impact of manufacturing and industry, and individuals are making more efforts in their homes to reduce, reuse and recycle materials.

In School Age Childcare (SAC) services, we have both an opportunity and an obligation to take an active role in caring for the environment and doing our part to contribute to a more sustainable future. There is no better time to engage children in environmentally-friendly activities and learning, and to encourage them in their role as responsible global citizens. We can do this by supporting the children in SAC services to recognise the importance of environmentalism in their lives and to find their voice in promoting environmental issues within their communities. Children and young people can play a key role 'in addressing climate-related risks by exercising their views, opinions and concerns, identifying and working on solutions, and promoting environmentally sustainable lifestyles – setting an example for their communities' (UNICEF, 2021, p.17).

In many cases, children and young people are increasingly the loudest voices questioning adult decisions in relation to climate change and environmental and sustainability issues. However, we can all benefit from more education on matters that impact our environment. When children, young people and adults develop knowledge, skills and values on environmental issues and sustainability practices, we all become better equipped and more motivated to create 'greener' communities. This can only have a positive impact on the outcomes for everyone and everything on our planet.



In SAC, we should strive for environmentalism to become part of the 'fabric' of how we do things every day, rather than being a tokenistic add-on to whatever else we are currently doing, acting as good role models for children in promoting and protecting the environment. Children need to see environmentalism in action and be part of any planning to truly embrace the principles of a sustainable future.

This resource aims to support us in our role in SAC to develop children's understanding and awareness of issues relating to environmentalism and sustainability, and what they mean in our day-to-day lives, and to help children to become more responsible, respectful and actively engaged. It offers some background context for environmentalism in SAC services and considers how we might integrate environmentalism into the service and how this might look in practice. It also provides guidance on how to introduce a programme of environmental activities, opportunities and experiences that cater for children/young people of all ages and abilities, including everyday opportunities, experiential or project-based learning opportunities, and projects based within the community in line with the *National Quality Guidelines for School Age Childcare Services* (DCYA, 2020).



I have learned
you are never too
small to make a
difference.

Greta Thunberg

SECTION 1

Environmentalism in School Age Childcare – An Overview



What Do We Mean by Environmentalism and Sustainability?

The Oxford English dictionary defines environmentalism as ‘a belief in and concern for the importance and influence of environment within a society’ and a belief in ‘the value and fragility of the environment’. In simple terms, the term environmentalism is often used to describe an aim to reduce the negative impact of human activities on the Earth and to protect nature. Environmentalists advocate helping to preserve and protect the natural environment from damage, and restore what has been lost.

Sustainability means meeting our own needs without compromising the ability of future generations to meet their needs. According to the United Nations (UN) World Commission on Environment and Development (2021), environmental sustainability is about acting in a way that ensures future generations have the natural resources available to live an equal, if not better, way of life as current generations. The term sustainability is therefore also sometimes used to describe the conservation of natural resources and the protection of global ecosystems to support health and well-being, now and in the future. Because so many decisions that impact the environment are not felt immediately, a key element of environmental sustainability is its forward-looking nature.



There are a number of strands to environmentalism and sustainability, including global agreements and protocols, international and national policies, the actions of corporations and companies, and more localised endeavours. Later in this resource, we will look at some of the environmentalism and sustainability actions that we can take in our School Age Childcare (SAC) services and in the local community.

The History of Environmentalism

The concept of environmentalism has existed for hundreds of years. Many of the earliest human stories contain lessons about the sacredness of the wilderness and our duty to care for the natural world. Before scientific and technological advances, medicines were created using plants such as herbs, and weather predictions were based on the activities and reactions of animals and plants. Our early ancestors needed to nurture and be acutely aware of their natural environment in order to survive.

In the early 19th Century, Alexander von Humboldt, a German naturalist and explorer, wrote a warning that humans had the power to upset the delicate balance of nature. While we are familiar with this concept today, the idea was completely radical at the time. We now know how prophetic Humboldt was because today we are much more aware of how the destruction of the rainforests and the erosion of coral reefs, for example, have been shown to have consequences, not just for local environments but for the planet as a whole.



The goal of life is living in agreement with nature.

Zeno ~ 450 BC (from Diogenes Laertius, Lives of Eminent Philosophers)

Did you know...?

Rainforests, the Earth's oldest living ecosystems, with some surviving in their present form for at least 70 million years, are home to more than half of the world's plant and animal species, even though they cover just 6% of Earth's surface (National Geographic, 2015). Their rich biodiversity is incredibly important to our well-being and the well-being of our planet, helping to maintain the moist climate that supports a variety of human, animal and plant lifeforms, and is vital to the regulation of the Earth's climate. Unsustainable industrial and agricultural development, however, has severely degraded the health of the world's rainforests and they are disappearing at an alarmingly fast pace. Once covering 14% of the land on Earth, rainforests now make up only 6%.

In a similar vein, coral reefs, which have the highest biodiversity of any ecosystem and are home to more than 25% of all marine species, protect coastlines from erosion and provide half the Earth's oxygen supply. Coral reefs have declined by 50% since 1950.



Many individuals and organisations both in Ireland and around the world have been campaigning and highlighting the need for governments to act upon concerns raised by the scientific communities in relation to the human impact on the climate. The recent report by the Intergovernmental Panel on Climate Change (IPCC, 2021) brought a stark message to us all that immediate change needs to happen. The report offers policymakers a clear view of the current state of global climate change and lays out the transformational action that governments must take to avoid a calamitous future.

Current National and International Policy

Implementing environmental and sustainable practices in School Age Childcare (SAC) is not only in the best interest of the children in our care and a way of addressing our moral obligations to climate change issues, it is also a legal obligation. There are laws written into legislation for the government, private industries and the general population to adhere to.

Global and national environmental policies and legislation include a pledge to continually measure and improve environmental performance, and many include a promise to seek ways to reduce energy, limit fuel consumption, lessen emissions, prevent pollution, reduce greenhouse gases, and reduce water consumption, that, when measured, can show improvement in environmental sustainability. Many governments have signed up to international agreements that make a commitment to the above and impose financial penalties if these actions are not adhered to.

Some of the key policies and guidelines relating to both environmental issues and to children that will be relevant to SAC services in Ireland are outlined below.

Environmental Legislation

Ireland has enacted a suite of environmental legislation over the past 30 years, much of which incorporates European Union (EU) directives. Notably these include:

- **Environmental Protection Agency Act (1992)** An Act to make further and better provision for the protection of the environment and the control of pollution, and to establish an environmental protection agency.
- **Waste Management Act (1996-2011)** The Waste Management Acts provide for a general duty on everyone not to hold, transport, recover or dispose of waste in a manner that causes or is likely to cause environmental pollution.
- **Climate Action and Low Carbon Development Act (Amendment 2021)** An Act to provide for the approval of plans by the Government in relation to climate change for the purpose of pursuing the transition to a climate resilient, biodiversity rich and climate neutral economy by no later than the end of the year 2050.
- **Wildlife Act (1976-2021)** An Act that underpins the protection of biodiversity and nature conservation.

Children's Rights

Article 12 of the United Nations Convention on the Rights of the Child (UNCRC) states that children have a right to participate and have their voices heard in issues that affect them. The current generation of children will be living with the impact of the environmental decisions made by our generation, so their input on environmental issues is important.

Our role as adults in SAC is to support children's understanding and awareness of environmental issues, encourage them to verbalise their own opinions and ideas, and help them put these ideas into action in the service and beyond. The voices and opinions of the children in the SAC service matter and should never be dismissed.

Guidelines for School Age Childcare Services

In 2020, The Department of Children and Youth Affairs published *National Quality Guidelines for School Age Childcare Services*. The purpose of these Guidelines is to assist and guide School Age Childcare service providers and staff to reach beyond and aspire to achieving more than the minimum standards set out in regulations. The key components and elements of the guidelines relevant to environmentalism are given below.



3.4 Environmentalism

The service takes an active role in caring for both indoor and outdoor environments and contributes to a sustainable future.

- **3.4.1** The principles of conservation (reduce, reuse, recycle) are observed and evident throughout the service.
- **3.4.2** The service promotes environmental awareness through activities with children/young people.
- **3.4.3** Staff act as good role models in promoting and protecting the environment.

6.5.8 Programme of Activities

Suitable waste materials are gathered to inspire creativity through recycling/upcycling.

7.1.2 Parental Involvement

Parental involvement is central to the success of the service. Parental involvement is actively encouraged, and staff develop and maintain positive and responsive relationships with parents/guardians and families.

7.3.5 Collaborative Partnership with Parents, Families and Communities

The staff implement activities that promote and benefit the local community and make children/young people visible as active citizens in the community.

As outlined in these Guidelines, it is the role of adults in a SAC service to not only raise children’s awareness of environmental issues, and encourage them in activities that promote sustainability and conservation, but also to ensure that our own actions and behaviour guide and inspire children to care for and protect the planet we inhabit. We should also strive to engage children with environmentalism and conservation within their local community, and ensure that parents and families are informed and involved in all actions taken by the SAC service to protect the environment. Information as to how to implement these are given later in this resource.

Aistear, the Early Childhood Curriculum Framework

Aistear, the Early Childhood Curriculum Framework (NCCA, 2009), supports the Early Learning and Care sector in their work with children from 0-6 years. It is likely that there will be children in the service from the age of five and many of the themes of Aistear sit well within the School Age Childcare programme and are easily transferable to accommodate older children. Of the 12 Principles of early learning and development within Aistear, two are significant to SAC. One principle highlights children as citizens with rights and responsibilities, and emphasises that their opinions are worth listening to and that they need to be involved in making decisions about matters which affect them. Another principle highlights the important role that parents, families and community play in the lives of children. Furthermore, Aim 1 of Learning Goal 4 of the Aistear theme Exploring and Thinking states the need for children to ‘Learn about the natural environment and its features, materials, animals, and plants, and their own responsibility as carers’.



Environmentalism in Practice

A lot of change is needed, and quickly, to reduce the damage we are doing to the environment globally and sometimes this can feel overwhelming. As well as supporting and even lobbying governments to make larger changes, we all have an obligation to do what we can as individuals to lessen our own damaging effects on the world we live in.



According to UNESCO (2020), there are four reasons to provide children with environmental education:

- To make them more aware and conscious of environmental problems.
- To boost their interest in caring for and improving the environment.
- To enhance their ability to learn about their surroundings.
- To broaden their ecological knowledge in subjects such as energy, landscapes, air, water, natural resources and wildlife.



*Tell me and I will forget.
Show me and I will remember.
Involve me and I will understand.
Step back and I will act.*

Chinese proverb

The opportunity we have in a SAC service to impact on a child's approach to environmentalism and sustainability is significant, but we don't need to know all the ins and outs of climate change to teach children how to respect the planet. While it is important to be ambitious about our plans around environmentalism and what we would like to achieve in terms of sustainability in our SAC service, we shouldn't be afraid to start small and low-key. We don't need to install a wind farm or a self-sufficient organic farm to promote sustainable thinking, for example. The most important things we can do are build on children's understanding of environmentalism and sustainability by encouraging them to ask questions and find out more about environmental issues, and provide a learning culture where children develop skills to take care of nature through play and creativity.

We can also set a good example through our own actions by modelling our respect for the environment, introducing practical ideas as to what we can do to play our part in minimising the negative effects on the world around us, and involving children in as much sustainable practice as we can as they take part in both planned and spontaneous activities. The activities and discussion we provide will stimulate their thinking and encourage children to take some action, however big or small.

It is important to remember that environmentalism and sustainability are not subjects we bring out for isolated activities, they are central to the learning experience and should be integrated into every aspect of the SAC service.

Spending Time in Nature

One of the best ways for children to learn about the environment is to experience it.

Contact with nature is a crucial part of sustainability education in SAC as it helps children to develop an appreciation for the Earth and all its inhabitants. Forming an attachment to the natural environment is a great way to keep children motivated and hopeful. Research has shown that spending time in the outdoors has a greater impact on children's views about environmentalism than just having knowledge about it (Broom, 2017). Being outside in nature will also impact directly on children's emotional well-being.

Modelling Environmentally Conscious Actions

We all know that children learn by example. The care we show and our attitude towards the service, the community and the wider environment will help to shape how children react to the world they live in. Our environmental behaviour can act as a model on which children can base their own actions.

We need to be conscious of how we ourselves are treating the environment around us. Do we turn the lights off when we leave the staff room? Do we always recycle waste into the correct containers? Adults are strong role models for the way children understand the importance of the world around them. If we act in a respectful way towards biodiversity, for example, even insects that we might consider a nuisance such as flies and spiders, children will receive the message that all plant life and creatures are entitled to care and protection.



Teaching the Principles of Conservation

One of the most effective ways to introduce children to environmental issues is to give them an understanding of the principles of conservation to ensure that these are observed and evident throughout the service.

Conservation is focused on protecting species from extinction, maintaining and restoring habitats, enhancing ecosystems, and protecting biodiversity. The care and protection of these natural resources are important for future generations, so our generation needs to use them in a more sustainable way.

While natural disturbances such as storms, droughts and earthquakes impact on habitats and ecosystems, human behaviour, which includes deforestation and an over reliance on fossil fuels, has impacted significantly on our natural world. These behaviours increase levels of carbon dioxide in our atmosphere, which has a direct link to global temperatures, impacting significantly on the severity and frequency of natural disturbances.

The conservation and protection of the natural world is hugely important, and, as stated earlier, governments are responding to this by introducing legislation to preserve land, and ensure wildlife and plant protection. There is, however, a lot more to be done. The waste we are accumulating and the growth in global populations is impacting on the natural habitats and resources that we and our planet depend on. As an individual it can feel like the issue is bigger than us and we might question what we can do to make a difference, but we can all take action on a local level.

There are three main principles of conservation, Reduce, Reuse and Recycle, and these are an effective way of lessening the harmful impacts that we, as individuals, have on the environment. Another principle is sometimes added as a starting point, Rethink.



*UNLESS someone like you cares a whole awful lot,
nothing is going to get better. It's not.*

The Lorax

Recycling is one of the most visible environmental actions and one that, as a society, we have grown accustomed to doing for a number of years. If we want to live on a sustainable planet, however, we need to go one step further and reduce our need to recycle, minimising the amount of waste we are generating in the first place. We can do this by becoming conscious consumers, rethinking our actions, reducing what we buy and reusing products as much as possible.

- **Rethink:** We can carefully consider any purchases we make, including food, to ensure that less waste is generated. Any equipment and materials we buy should be eco-friendly and durable to ensure longevity. We can also question the carbon footprint of the products we buy.
- **Reduce:** To minimise the impact we have as a society on the environment, we need to produce less waste (plastic, nuclear waste, CO₂ emissions, etc.). We can help with this by cutting back on the amount of waste we generate as individuals, for example, by choosing products with less packaging.

- **Reuse:** We can extend the useful lives of objects and materials by giving them a second chance and finding new ways to use things that we would otherwise throw out.
- **Recycle:** When we can't reduce our amount of waste or reuse it for another purpose, we can recycle it, which allows something old and useless to be turned into something new and useful.

We can also refuse to use resources unnecessarily, repair things that are broken, regift by giving things we do not want/need to someone else, and recreate and repurpose by adapting or using something for a new purpose.

Managing Children's Concerns



In Section 2, we will look at ways to engage and involve children in specific environmental issues. As adults we need to be mindful of how best to support children in this, however, and consider the need to manage any potential anxiety they might have in relation to climate issues. It is important to listen to the concerns children have, and not to jump to telling them it will be all ok. Being proactive in our service and demonstrating to children what they can do to reduce their own negative impact on the environment, such as reducing their carbon footprint, will help them to manage these feelings.

- **Talk about the positive things that are happening.** Discuss the positive things that people are doing around the world to address climate change. Highlight the many people and organisations working to tackle the issue, and find out and talk about the good news stories to show that positive change can happen when people truly care.
- **Show children it's not all on them.** It is important to let children know that while we can all do things individually to protect and preserve the environment, the fate of the world does not rest on their shoulders. Talk about what they are doing and how this can influence others to change.

- **Organise activities.** Children are likely already taking small, individual actions to reduce their environmental footprint such as turning out the lights, eating less meat and reducing plastic waste. Discuss ways that individuals can do their part and how we can carry these out in our homes. Think about how to make these into community/service activities, so that several families get involved to increase the impact of their actions. Taking an active approach can contribute to reducing anxiety.
- **Let children know we are prepared.** If children are especially fearful of physical danger from climate-induced storms, floods or wildfires, have conversations about the likelihood of some of these events and the direct impact of these on our communities. Highlight any plans in place for storms or floods, for example, as children need to feel assured that we are prepared.
- **Practice mindfulness in nature.** Introduce some mindfulness exercises connected to nature to support children in managing feelings of anxiety. Examples would be walking around slowly on grass in bare feet, feeling the connection with the earth between your toes, or sitting outdoors, away from traffic, with your eyes closed and concentrating on the sounds you can hear in nature, perhaps of birds tweeting, bees buzzing or a running stream.

Working in Partnership with Parents, Schools and the Local Community

Involving Parents

The more families see how the SAC service is adapting to being sustainable, the more aware they will become about environmental concerns. It is important that we keep parents up to date on what the children are doing in the service. This can be achieved by displaying posters about 'going green' and photographs of the activities that the children have been engaged in, creating a 'going green newsletter' or incorporating environmental issues and actions into an existing newsletter.

As the children bring home the knowledge they have gained, it is likely that parents' sustainability practices will improve. Research has shown that children can directly influence their parents' attitudes to environmental issues and change their parents' behaviour (Damerell, Howe & Milner-Gulland, 2013).

Consider organising a second-hand book and/or a toy swap for the families in the service or as a community event. Provide families with information on the sustainable practices you are implementing and why – encouraging them to try these ideas at home. Parental involvement should be actively encouraged in the SAC service, and many parents will have some great ideas to contribute so invite them to share their suggestions.



Linking with Schools

Environmental issues have been adopted by many schools in Ireland and sustainability has become part of the Primary School curriculum in areas across the country through the Green Schools initiative, so many children in the service will already have some knowledge of environmentalism. The subject of Social, Environmental and Scientific Education (SESE) within the school curriculum also enables children to explore, investigate and develop an understanding of local and wider environments, and includes:

- Human environments
- Natural environments
- Environmental awareness and care

The Department of Education has been working on the development and co-ordinating implementation of a follow-on *National Strategy on Education for Sustainable Development (ESD)* to 2030 and is committed to contributing to the national effort to implement the United Nations' 17 Sustainable Development Goals from *Transforming our world: the 2030 Agenda for Sustainable Development* (United Nations, 2015), so it is likely that this is an issue that will gain increasing prominence in schools over the next few years.

It is important that the information provided and actions taken in the SAC service mirror elements of what is taking place in schools in order to embed and consolidate children's awareness and understanding of environmental issues. To ensure this continuity, we can make contact with the local schools to find out what they are covering in their curriculum in relation to the environment. This will assist us in planning for our own programme of activities and help us to reinforce the learning for the children.

Engaging With the Local Community

To allay any anxieties that children may be experiencing in relation to climate issues it is important for them to see that their actions can make a real difference. Getting involved in their communities and seeing that small acts can have a large impact will reinforce this message. Community engagement will also raise the profile of the SAC service.

Find out if there are any local groups that are working to improve the community, such as the Tidy Towns initiative, bird watching groups or garden allotment groups, and ask them how the service can link with them and support their work. Supporting local clean-up days, for example, can highlight the issue of litter and encourage children to take pride in a clean, litter-free community. Look around the local area. Is there any unused public land where the children could sow a wildflower garden or paint a mural? Remember though, before initiating either of these activities, the service would need to seek permission from the relevant authority.

In Section 2, we will look at a range of activities that will engage children with environmentalism and conservation within their local community.

Carrying Out a Green Audit

Conducting a comprehensive sustainability audit or self-assessment to document baseline practice across all areas of the service is a great starting point in our efforts to 'green up' everyday practices. All staff and children should be involved in determining where improvements could be made. It will be useful to have some ideas in mind as to areas that need to be considered to use as a prompt for the discussion but it is important to listen to the children's opinions. Children have a right to input on matters that affect them, so should be consulted with thoroughly and all of their ideas taken into account.

You can find a useful template for a green audit at www.eco-schools.org.uk

Developing a Green Code

We should also develop a code of practice in relation to environmental issues and sustainability, ensuring again that we consult with children in the service. This 'Green Code' can list the commitments that everyone in the service will adhere to in creating and maintaining sustainable practices. Ideally, this Green Code should be developed after the audit has been completed and steps in making improvements have begun, when it will be clearer what is achievable and practical for the service. There is no point in committing to far-reaching goals that are completely unattainable.

When it has been agreed, the Green Code can be displayed in a public space within the service and shared with parents. The more visible the code is, the more likely it is that everyone will commit to it.

Planning Your Programme

When the audit and code outlined above have been completed, it will be easier to consider the next steps. The discussions we have with the children as the Green Code is being developed will give us a sense of the areas that spark the children's interest.

Planning is crucial for any activity or change of practice. As a team, spend time thinking and discussing why, how and when certain actions will be implemented. Formulate a plan and maybe nominate a lead person to oversee its implementation.

Some activities might be short and others may take a number of days or weeks to complete or we might re-visit them a few times throughout the year. Some might be small group activities while others will be large group. We should aim to include as many actions as possible that can be embedded into everyday practice.

The activities that are included in this resource are just a sample of what can be done. Hopefully they will act as an inspiration to source many more fun experiences for the children in the service.



Landscapes of great wonder and beauty lie under our feet and all around us. They are discovered in tunnels in the ground, the heart of flowers, the hollows of trees, fresh water ponds, seaweed jungles between tides and even drops of water. Life in these hidden worlds is more startling in reality than anything we can imagine. How could this earth of ours, which is only a speck in the heavens, have so much variety of life, so many curious and exciting creatures?

Walt Disney

Environmental Themes

School Age Childcare services are an ideal setting to promote and support children's knowledge about environmental issues through interesting and fun activities, followed up by discussion with children about what they have done and why.

The concept of environmentalism can sometimes be a little overwhelming though and it can be difficult to know where to start. It can be helpful to break it down into a number of themes as below.

1. Global Perspective
2. Energy
3. Litter
4. Waste
5. Transport
6. Outdoor Space
7. Healthy living
8. Biodiversity

In Section 2, we consider activities and practices that can be introduced on each of these eight themes, looking at what each theme means and giving some suggestions and inspiration for related activities and experiences that we might provide to help promote environmentalism and sustainability. Choose activities based on the interests and stage of development of the children in the service.



Types of Experiences

Guideline 6.3.7 of *National Quality Guidelines for School Age Childcare Services* (DCYA, 2020) suggests that a SAC service offers a programme of activities, opportunities and experiences that caters for children/young people of all ages and abilities. This will involve different types of activities as outlined below.

	Everyday opportunities to cover a wide range of activities that are always available for children/young people to explore, experiment or simply relax.
	Experiential or project-based learning opportunities to give children/young people a chance to develop hobbies, skills and interests and be excited/enthusiastic about learning.
	Community service learning experiences to provide various opportunities to prepare and engage children/young people in a range of projects within their community.

Striving for a combination of experiences will help to ensure that we are incorporating environmentalism into as many aspects of our service as possible. This could include the **everyday opportunities** of gathering waste products and sorting them into items that can be used for recycling/upcycling at a later date, or **ongoing projects** that children can research, keep going back to, adding to and developing. Organising **community projects** can be fun and there is so much that can be gained from them. As well as the children contributing to community efforts and gaining the experience and self-satisfaction of taking part, we are helping to inform and spread the message of the importance of environmentalism in the wider community.

When planning, it is useful to divide activities and experiences into these three categories. Try brainstorming with staff, children and parents to find out the needs of the community. Perhaps there is something specific the service can contribute to. Remember too, that children are much more environmentally aware than previous generations, so will have lots of suggestions of their own. We must be open and take their ideas and opinions on board, encouraging discussion wherever possible.

For each of the themes given in Section 2, it is helpful to read all of the information before introducing any of the activities into the service. This helps us to build our own awareness and understanding of the topic. It will also ensure we are familiar with the activity and know what we need to do to prepare in advance and the materials we will need.



A Note About Health and Safety

While risky play, experimentation and exploration are all essential elements of children's development, health and safety are also very important!

- All staff in the service must be aware of any health and safety measures, policy and procedures in place.
- Always consider the age and stage of development of the group of children when planning for an activity.
- Carry out an appropriate risk assessment when planning any activity to ensure that it can be carried out in a safe manner.
- Ensure in advance that you have any health and safety equipment you need for an activity, such as gloves and high-vis vests.
- Always have appropriate first-aid equipment in an accessible location.
- Check that all materials and tools to be used are clean, in good condition and safe to use.
- Be aware of any allergies among the children in the service and ensure that all materials, plants etc. to be used in an activity are suitable.
- When carrying out an activity outdoors, especially if it is somewhere other than the grounds of your service, always assess the area in advance to make sure it is free from any hazards such as dangerous plants or debris. Remember also, if you are carrying out an activity somewhere other than on the grounds of your service, you may need to get permission from whoever owns the land.
- Ensure you have an appropriate adult:child ratio for any activity you are doing.



SECTION 2

Environmental Themes



THEME 1

Global Perspective



There is no doubt that human activity is hugely responsible for damaging the environment and no matter how big or small our contribution to this, we all have a moral obligation to protect the environment and promote the sustainable development of the planet for future generations. Before we can protect and promote sustainability, however, we need to understand a little bit about the natural environment around us. In School Age Childcare, we can support children's awareness and understanding of the natural environment by promoting their knowledge of the air, water and land on the planet we live on, and the impact of the destruction of these natural resources.

AIR

Getting to Know the Clouds

Clouds are an important part of the Earth's atmosphere and therefore play a significant role in what happens here on Earth. They help contain heat, and are an essential part of the water cycle.

Did you know...?

The Earth's ecosystems are heavily influenced by clouds. For example, the rainforests that absorb carbon dioxide from the atmosphere to stabilise the Earth's climate and release the oxygen that we depend on are almost always covered with cloud. Recent climate models project that the increase of carbon dioxide in the atmosphere as a result of man-made activities will cause temperatures to soar. This warming of the Earth will lead to a loss of clouds, allowing more solar energy to strike the planet (Pearce, 2020).

In Ireland, there are usually some kind of clouds in the sky! Mostly we just call them clouds, whatever they look like. However, there are lots of different types of clouds. As we experience climate change, identifying the types of clouds will become more and more important to us. The information and activities given on the following pages will help children to identify and understand clouds, and their part in the weather system.

Cloud Facts

Clouds are created when water vapour, an invisible gas, turns into liquid water droplets. These water droplets form on tiny particles, like dust, that are floating in the air.

Clouds form at different levels:

High clouds

- **Cirrus** – High level clouds that are thin and wispy. They appear during good weather.
- **Cirrocumulus** – High clouds that look like tiny cotton balls bunched together.
- **Cirrostratus** – High, flat clouds that might cover the sky making it appear overcast. These clouds signal that it may rain in the next day or so.

Middle clouds

- **Alto cumulus** – Middle level clouds that are small, white, and puffy.
- **Altostratus** – Medium level clouds that form a dark grey covering. Usually they are a sign of rain.

Low clouds

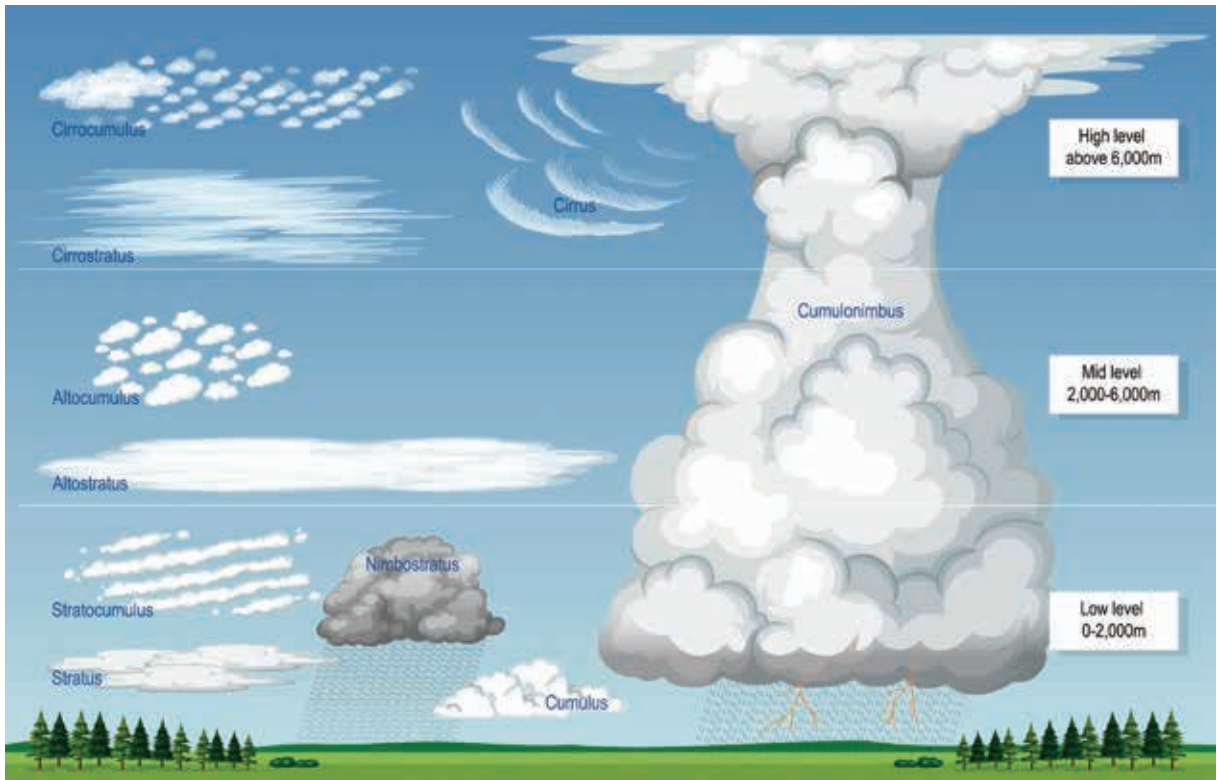
- **Stratocumulus** – Low, puffy, and grey clouds. They may produce a little rain and can turn into nimbostratus clouds.
- **Nimbostratus** – Thick, dark grey middle level to low level clouds. They usually bring rain or snow.
- **Stratus** – Low level clouds that are flat and tend to cover much of the sky. They are grey in colour and may produce light rain or drizzle.

Vertical clouds

- **Cumulus** – Low to mid-level clouds. They are big, white, puffy and beautiful clouds. They usually mean good weather unless they grow really tall and turn into cumulonimbus clouds.
- **Cumulonimbus** – Very tall clouds that span all the way from low level to high level. They can cause violent thunderstorms with heavy rain, hail and even tornadoes.

Other types of cloud

- **Fog** – A cloud that forms on the ground.
- **Contrails** – Clouds you might see in the sky from aircraft.





Word Cloud of Cloud Words

Go outside and lie on the ground and watch the clouds. Ask children to identify and describe the different shapes in the clouds. The descriptive words below might help. You can expand on this activity later by encouraging children to create a word cloud with cloud words (see www.wordclouds.com).

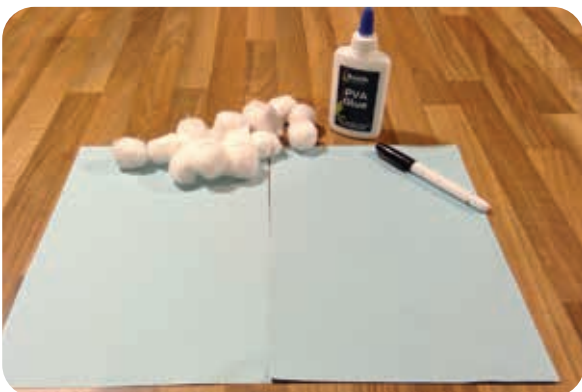


Cloud Crafts

Clouds may have long awkward names but with frequent use children will become accustomed to using them without any problem.

When they come indoors, ask children to draw the clouds that they saw or cut them out of a selection of pictures of clouds and place them on a board, labelling each type. A fun alternative is to use cotton wool to recreate the clouds.

You could make cloud watching a daily activity. At a similar time each day, ask the children to go outside and look up! What type of clouds do you see? Are they low, middle, or high clouds? Will there be rain coming? Make a chart to record the different types of clouds you see.





Make Your Own Clouds

You will need

- Water
- A clear jar or tall glass
- Squirty or whipped cream
- Small container of food colouring mixed with water
- Plastic pipettes or eye droppers

Method

1. Fill the glass jar $\frac{3}{4}$ of the way full with cool water.
2. Make a fluffy 'cloud' on top of the water with the cream.
3. Suck up some of the coloured water into the pipette and then gently squirt it on top of the cream cloud. As more and more coloured water is squirted onto the cream, the cloud will become heavier and heavier.
4. Within a few minutes, the first drops of coloured rain will make their way through the cloud and drop into the water underneath.



Air Pollution

Air is all around us, we breathe it in and out every second of every day. We can't see the air and so we don't think about it very often. We only really notice it when something goes wrong, when it smells, when it is smoky or when we can't get enough of it.

Air pollution happens when gases, smoke, dust or odour get into the air and contaminate it, which can be very harmful for humans, animals and plants. Currently, pollutants are being added to the air (as well as water and land masses) faster than the Earth's natural mechanisms can remove them.

There are a number of things that can cause air pollution:

- **Natural causes:** Animals (namely cows) can cause damage to air quality by releasing methane gas into the atmosphere. Events such as forest fires or volcano eruptions can also cause natural air pollution.
- **Human causes:** Most air pollution is a result of human activity through the chemicals we use, the cars we drive, the factories that manufacture things we buy and the fossil fuels we burn to generate energy such as electricity. Therefore, we should be the ones to try to fix it.

Did you know....?

A fossil fuel is any class of hydrocarbon-containing materials of biological origin occurring within Earth's crust that can be used as a source of energy. Commonly used fossil fuels include coal, petroleum, natural gas and oil.



Air Pollution Posters

Method

1. With the children, create a list of the various ways humans contribute to air pollution.
2. Have the children choose one and design their own poster. The poster could show some of the things in their local area that cause air pollution. It could contain serious facts or demonstrate a point through humour.

You will need

- Large sheet of paper / card
- Pens / crayons
- Paints
- Magazine picture cut outs



Air Pollution Sampling

Talk with the children about air quality. Do they notice any difference between city air and country air? Have they breathed in the air at an airport or near a factory? What other ways can they tell if the air is clean? This activity shows how air pollution can vary depending on human activity in an area.

Method

1. Go for a walk in a rural area. Use cotton wool balls to take samples from the surface of the leaves on trees. Instead of leaves you could take samples from windows or signposts in various places. Put these in the sample jars or bags and write on them where the sample came from.
2. Do the same in other areas, in the city or town, near a factory, carpark or airport.
3. Back at your service, examine the cotton wool balls and discuss why some have more pollutants on them than others. Create a large poster or collage displaying your samples with drawings and captions of where they came from.

You will need

- Cotton wool balls
- Sample jars or bags
- Pens for marking jars or bags





Fire and Smoke

When anything burns it releases chemicals into the air, usually carbon dioxide and water vapour. We usually see or smell smoke and it will be obvious that the air is being polluted. Sometimes, however, we cannot tell the air is being polluted, but this doesn't mean it isn't happening.

This activity shows air pollution in action. Remember to follow all fire safety measures in place when carrying out this activity.

Method

1. Safely light a candle and then put a white plate at the top of the flame for a few seconds.
2. Discuss what has happened to the plate? What is the residue on the plate? Where has it come from?

You will need

- Candle
- Matches
- White plate



WATER

The Water Cycle

The water cycle describes how water evaporates from the surface of the Earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation. To help children to understand water evaporation, ask them to think about what happens if they spill water onto their t-shirt? Do they need to throw it away? What happens to the water as it dries? Where does it go?

The cycling of water in and out of the atmosphere is a significant aspect of the weather patterns on Earth.



Understanding the Water Cycle

Method

1. Draw a scene similar to the one below on a large sheet of paper.

You will need

- Large sheet of paper
- Pens
- Crayons



2. Talk about the image with the children using words like evaporation, gas, condensation, precipitation, atmosphere, gravity and collection, and let the children colour the picture in while you discuss it.
3. Call out the following words: water, sun, evaporation, condensation, cloud, rain, precipitation, water, collection, condensation, rain, cloud and ask children to point to the part of the picture that matches the words you call out. Repeat these words until you are confident that the children know them.
4. Older children could draw their own diagram of the water cycle and label it appropriately.
5. Ask children to explain the water cycle to you and to other children.

There are a number of catchy songs about the water cycle available on YouTube.

Suitable for younger children

Water Cycle Song - <https://www.youtube.com/watch?app=desktop&v=TWb4KIM2vts>

The Water Cycle - How Rain is Formed <https://www.youtube.com/watch?v=s0bS-SBAgJI>

Suitable for older children

The Water Cycle <https://www.youtube.com/watch?v=jFjI6y46QRk>

Sea Ice and Glaciers

Since the beginning of the Industrial Revolution in the 18th Century, humans have been burning more and more fossil fuels during manufacture. The carbon dioxide and other emissions from this and other human activities such as transport have raised temperatures on Earth. As a result, both sea ice and glaciers have been rapidly melting.

Sea ice forms and melts in the ocean, and is often compared to ice cubes in a glass of water in that, when it melts, it does not directly change the level of water in the glass. Instead, melting Arctic sea ice as a result of global warming triggers a host of other devastating consequences from reducing the available ice on which walrus and polar bears can live and hunt to changing weather systems around the world by altering the pattern of Jet streams. The Jet streams are fast flowing, narrow air currents found in the atmosphere above the surface of the Earth. They form at the edges of air masses with significant differences in temperature, such as the polar region and the warmer air to the south.

Glaciers are formed on land. Icebergs are chunks of glacial ice that break off glaciers and fall into the ocean. When glaciers melt, the resultant meltwater and icebergs that had previously been stored on land significantly increase the amount of water in the ocean, contributing to the rise in global sea levels.

Did you know...?

Today, about 10% of land area on Earth is covered with glacial ice. Almost 90% of this is in Antarctica, while the remaining 10% is in the Greenland ice cap. Scientists project that if emissions continue to rise unchecked, the Arctic could be ice free in the summer as soon as the year 2040 as ocean and air temperatures continue to rise rapidly.





What Happens When the Glaciers Melt?

The Greenland ice sheet, a vast body of ice covering approximately 1.7 million km², is disappearing rapidly and has already contributed 20% of current sea level rise. If emissions continue to rise, the current rate of melting on the Greenland ice sheet is expected to double by the end of the century. If all the ice on Greenland melted, it would raise global sea levels by over seven metres (Griggs & Noguera, 2002).

The activity below will help children to understand the impact of increasing temperatures on Earth.

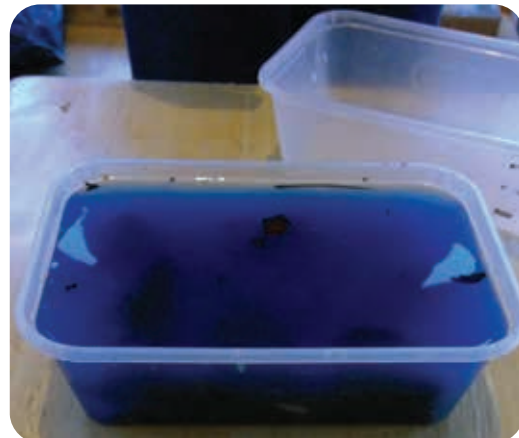


You will need

- World map
- Two containers (lunch box size)
- Water
- Blue food colouring
- Small stones

Method

1. Show the children where Greenland is on a map.
2. Quarter fill one of the containers with water and freeze – this is the Greenland ice sheet.
3. Put a few stones into the other container then half fill with water, ensuring that some of the stones remain above the water level, and add the blue colouring – this represents the Earth.
4. Allow the Greenland ice sheet to thaw then pour the water over the Earth. Discuss with the children what has happened to the water level. What has happened to the stones that were initially above the water level?



Water Pollution



When discussing water pollution, ask the children what they have heard about dirty rivers, lakes and seas. What causes them? How do we prevent water pollution happening? Show children pictures of polluted water bodies and talk about whether they would swim or paddle in these waters. If not, why not? Discuss what might happen to them if they did swim in the water and think about the people who rely on the water for drinking and food.

What causes water pollution?

Pollutants that affect our seas and oceans come from many different places. One cause of pollution is from the water that flows down the drains in our houses after human activities such as washing our clothes and dishes, and cleaning the car. This water, which now contains contaminants, is carried to streams, rivers and eventually to the ocean.

Some companies can also cause water pollution by mismanagement of their waste products.

Contaminants can include:

- Dirt
- Leaves and grass clippings
- Litter such as cigarette butts, tin cans, plastic bags, bottles and paper etc. on the streets or blown from rubbish bins
- Soaps and detergents used for cleaning cars, windows and buildings
- Oil and air pollutants
- Chemicals such as weed and bug killers in gardens, chlorine for swimming pools, cleaning agents for windows, paint from paintbrushes and pots etc.
- Pesticides and fertilisers from farms can seep through into the water tables under the ground
- Animal and human waste contains bacteria and viruses that can cause harmful diseases
- Chemicals, detergents, food waste products, toxic sludge and certain metals like lead from companies and corporations that don't dispose of waste products properly

Water pollution affects our quality of life, our habitats, and our drinking water.



Water Pollution Experiment

Method

Fill in the recording sheet for each stage of the experiment.

1. Pour some water into three separate clean, clear glasses or bottles. Observe what the water looks like.
2. Add the oil to one glass to create 'polluted water', the washing up liquid to the next and the soil to the last glass.
3. Stir the glasses of water with a spoon to create movement in the polluted water. Observe what happens to the water.
4. Continue to observe the water and see what happens after five minutes. You could also try leaving for several days to see what happens.
5. Filter the polluted water from one glass through a coffee filter into a clean glass and observe the water again. Repeat for the other two polluted waters. You could also try filtering through small, clean stones or sand.

Recording Sheet

Pollutant Used:	
	Observations for each stage: <ul style="list-style-type: none"> • What does it look like? • What colour is it? • What does it smell like? • Are there any particles in the water?
1. Tap water	
2. Polluted water	
3. Polluted water after movement	
4. Polluted water after standing for five minutes	
5. Filtered water	



Water Pollution – Oil Spill

Oil spills occur when oil leaks or spills into a body of water such as an ocean, sea, river or lake. While more often seen in these marine ecosystems, oil spills can happen on land too. They are often caused by accidents or human error, mainly from tankers, barges, oil drill rigs, and other places or methods of transportation that store or hold large amounts of oil.

Discuss oil spills with the children, considering what they are, how they happen, their impact and the best way to clean them up. The activity below helps to illustrate the difficulties of cleaning up oil spills.

Did you know...?

Oil spills are harmful to marine birds and mammals as well as fish and shellfish. The oil coats the feathers and fur of marine life such birds and seals, which means their fur or feathers cannot protect them from the weather and may cause hypothermia (being too cold). Wings can become stuck with the oil so the birds cannot fly. An oil spill can also contaminate the food supply or the food chain. Marine mammals that eat fish or other food exposed to an oil spill may be poisoned by oil.

Method

1. Half fill the container with water. Pour the oil onto the water, then add some feathers (optional).
2. Now try various ways to clean up the oil:
 - Try scooping with the spoon or eye dropper
 - Blot with the paper towels or cotton wool balls
 - Try the washing up liquid – this breaks up the oil into smaller droplets that can mix with the water and rinse away.

You will need

- Shallow container
- Water
- Vegetable oil
- Feathers
- Eye dropper
- Spoon
- Paper towels
- Cotton wool balls
- Washing up liquid



Did you know...?

Fast fashion is the mass production of cheap, poor quality, disposable clothing. To keep costs low, this often means low pay and poor conditions for workers and might even involve child labour. Fast fashion has hugely negative impacts on the environment due to both the energy used and the byproducts produced in the manufacture, packaging and transport of the millions of garments produced each year, many of which are only worn a handful of times, and end up incinerated or in landfills. Fast fashion is very harmful in terms of water for a number of reasons:

- Textile factories producing fast fashion often dump untreated toxic wastewaters directly into waterways.
- Fast fashion is often made from cheap synthetic materials such as polyester. When washed, polyester clothing releases hundreds of thousands of tiny plastic fibres, which make their way into the environment through wastewater.
- Clothing production uses up a tremendous amount of water. It can take up to 200 tonnes of fresh water to dye and finish just one tonne of fabric.

Water Conservation

Water conservation is the practice of using water efficiently to reduce unnecessary water usage. It is important because fresh clean water is a limited resource, as well as a costly one. While 71% of the planet is water, only 1% is used as drinking water. We also have other daily uses for water such as cleaning, heating, washing, cooking, gardening, etc. Other important users of water are the ecosystems and all of the plants and animals in the world. Water conservation means using water wisely and not contributing to unnecessary wastage.

Irish Water offer the following six tips on water conservation:

1. **Turn off the tap.** Don't leave the tap running while you brush your teeth, and turn it off after you wash your hands
2. **Take quick showers.** Baths use a lot of water. Taking a shorter shower can save about 10 litres of water a minute!
3. **Flush less often.** One toilet flush can use up to 7 litres of water, so only flush when you really need to.
4. **Save that water.** Use stoppers or basins when cleaning your paint brushes after arts and crafts.
5. **Stop dripping taps.** Dripping taps waste water. Save water by turning the tap fully off.
6. **Keep chilling.** For drinking water, keep a jug of water in the fridge instead of running a cold tap.

For more information see www.water.ie/conservation



Water Conservation Creativity Activities

Method

1. Put the children in pairs and ask them to choose one of the tips from the previous page.
2. Ask children to choose two of the following methods to illustrate the tip they have chosen:
 - Song
 - Poem
 - Illustrated story
 - Dance
 - Artwork – sculpture / painting
 - Poster
 - Short play or sketch
3. Have the children share with the rest of the group when completed.

You will need

Various props and materials to complete chosen tasks.

Did you know...?

The average person uses around 140 litres of water a day!



How Much Water?

Even though we live in Ireland and rain is never far away, water scarcity still threatens our water supply, in turn threatening the well-being of our communities and environments. Right now, our water supply is under tremendous pressure. It is essential for us all to use water wisely to ensure there is enough to go around. Do we realise when and how much we use water or do we take it for granted?

Method

1. Give each child a Water Use Chart and ask them to fill it in for a week with the help of their family. Note down how many times per day each family member carries out an activity.
2. At the end of the week, help the children to calculate their family's usage.
3. Add together everyone's water usage and discuss ways this might be reduced.

Date for Your Diary

Every year, 22nd March is observed and celebrated as World Water Day to increase awareness about the importance of fresh water and the need to conserve it.

You will need

- Personal Water Use Chart
- Pen

Name: _____ Dates - From: _____ to _____

Water Use Chart

Activity	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Total number of times	Estimated amount of water per use (litres)	Total weekly water use (litres)
Washing face or hands									4	
Taking a shower (standard shower head)									190	
Taking a shower (low-flow shower head)									95	
Taking a bath									150	
Brushing teeth (water running)									8	
Brushing teeth (water turned off)									1	
Flushing the toilet (standard flow toilet)									20	
Flushing the toilet (low-flow toilet)									5	
Drinking water									1	
Cooking a meal									11	
Washing dishes by hand									38	
Running a dishwasher load									56	
Washing a load of laundry									114	
Watering lawn									1135	
Washing car									190	
OTHER										
Total Weekly Water Use (in litres) →										



Imagine a Day Without Water

In many countries they are not as fortunate as we are in Ireland, and people are not able to just turn on a tap and have clean water come out. Some people have to walk miles, two or three times a day to bring enough water for the family to use for their every need. Often this water is dirty, coming from the same waterhole or stream that animals use.



Method

1. Discuss with the children all of the uses of water and think about how valuable water is and how much it means to our everyday lives.
2. Then set the children the following task:
 - Imagine that you woke up one morning and went to wash your face, you turned on the tap and no water came out! What would you do?
 - You then found out that there was no water left in the whole world! What would happen? Think about humans, animals, plant life, ecosystems, manufacturing and energy.
 - Draw a picture to show what would happen and write in captions to explain your thoughts. Share these with others.

You will need

- Large sheets of paper
- Pens / crayons / paints

LAND

Around 22% of the Earth is covered in land. This land includes desert, forests and ice, is very varied and can be made up of different types of soil and covered with a variety of different things such as stones, sand etc.

Humans use land in a variety of ways for various purposes and it can be categorised into residential, agricultural, recreational, transportation, commercial and industrial. Unfortunately, over the years we humans haven't done a very good job at looking after the land.

Date for Your Diary

World Soil Day is held every year on 5th December as a means to focus attention on the importance of healthy soil and to advocate for the sustainable management of soil resources.

Land Pollution

Land pollution is anything that damages or contaminates the land. The effects of land pollution on soil, water and the air are destroying our various ecosystems. Soil erosion and deforestation caused by soil and land pollution lead to landslides and mudslides. Toxic waste mixing in the water and land affects animals and plant life.

There are many causes of land pollution from the rubbish we throw away in our homes to waste produced at giant factories. Sometimes, chemicals from land pollution such as rubbish can contaminate the soil and eventually the groundwater we need for drinking.

With the children in your group, discuss the various ways we use land and consider some of the negative impacts of not looking after the land.





Mud Land Pollution Collage

Make collages using mud as paint and add other natural materials to create images to help children visualise what the Earth might look like in the future if we don't respect the land and soil and do our best to look after it.

Method

1. To make the mud, place a handful of earth in a bowl and mix with a little water to make a muddy consistency. Add a squirt of washing up liquid for a better flow. Experiment with different consistencies (add more or less water) to see the effect it has on your collage.
2. Paint the mud onto large sheets of cardboard or onto the boxes.
3. Add other natural materials to create the collage.

You will need

- Mud
- Washing up liquid
- Various other natural materials
- Large pieces of cardboard or boxes



Deforestation

Before people began cutting down forests to build cities and create farmland, forests (including rainforests) covered about half the Earth's land area. Now they cover only about 30%.

Did you know...?

- Forests and trees clean our air by absorbing things that pollute the atmosphere. They absorb carbon dioxide (CO₂) and transform it into clean oxygen (O₂).
- Forests and trees provide a habitat for all sorts of wildlife.
- Forests and trees keep things cool and help to encourage rainfall. This not only cools down the environment but also helps the growth of new trees.
- Forests and trees help in the fight against climate change. Carbon dioxide is one of the greenhouse gases responsible for speeding up climate change. Forests and trees help to slow this down.
- Forests and trees help protect the soil because their leaves and branches catch raindrops as they fall, lowering the amount of rainfall that hits the ground at the same time. This prevents the soil from flooding and washing away (soil erosion).
- Forests and trees are also great places for us to have fun and relax in.
- One fully grown tree can provide enough oxygen for 2 to 10 people every day!



Activities on Deforestation

- Make posters about the importance of forests and trees.
- Find out where the major forests of the world are and plot them on a map.
- We don't have to go across the world to care for trees. Our native forests, woods and trees are also important habitats that we can help to protect. Bring children on a walk in a wooded area and discuss what you like about trees, how important they are to us and how to protect them.

Tread carefully in the woods and countryside. Keep to paths so you don't trample on delicate plants.



Tree Watching

This activity encourages children to use their observation skills to understand the role of trees.

Method

1. Head outside to an area where there are some trees, e.g. a park or forest, and ask the children to choose a tree, one each if there are enough trees around, or a group of children to one tree.
2. Draw a sketch or take a photograph of the tree and what surrounds it.
3. Make notes on any wildlife in and around the tree, looking closely for birds, insects and other animals on the branches, trunk and in the surrounding soil.
4. Revisit the chosen tree each week and note any changes such as leaves changing colour or dropping.
5. Take a photo or draw a sketch on each visit and compare findings as they are collected.
6. Discuss the reasons the observed wildlife would have for visiting or living on this tree, the connections the tree might have with other (unseen) living and non-living things in the environment, and anything else the children notice about their tree.

You will need

- Pens / paper
- Camera





Helping Hands for Trees

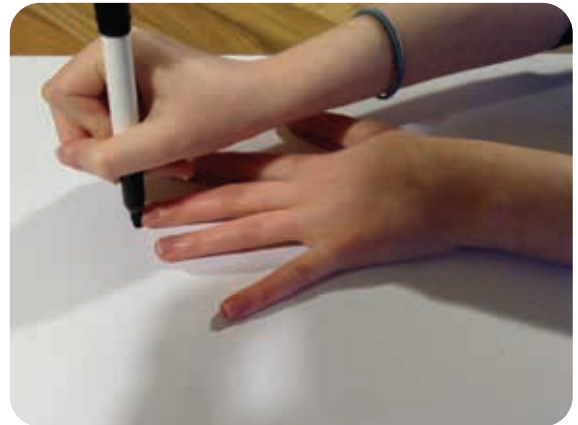
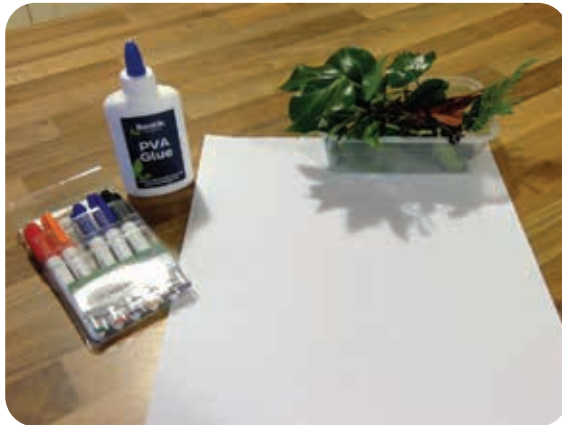
Remember to use natural items you find on the ground for your crafts and games. Don't pick them from plants and trees.

Method

1. One child places their hand in the centre of a large sheet of paper and another child draws around it. This is the trunk of the tree.
2. Draw in branches and add leaves to make your own creation.

You will need

- Pens / paper
- Glue or tape
- Leaves – collected from the ground





THEME 2

Energy

Energy sources can be divided into two groups: renewable and non-renewable.

1. Non-renewable energy sources, such as fossil fuels, which we have been using for years, are rapidly being used up and are causing considerable harm to the environment.
2. Renewable energy sources, such as wind and solar energy, are environmentally friendly and are naturally renewing and replenishable. They will never run out of energy, unless the sun falls out of the sky and the wind stops blowing!

Both renewable and non-renewable energy sources can produce electricity and hydrogen, which are secondary energy sources.

There is a third category of energy, nuclear energy, which doesn't fit into either of the two main categories. Energy produced by nuclear power plants is renewable, but the fuel that is required for the production of nuclear energy is not renewable. Nuclear fission requires a chemical element called uranium, also known as U-235, which is comparatively rare.

Non-renewable energy sources

Coal
Oil
Natural gas

Renewable energy sources

Wind
Solar
Geothermal
Biomass (from plants)
Hydropower from water





Energy Mime

This fun activity will help children to become familiar with the types of energy in use today.

Method

1. Discuss all of the words and terms you can think of associated with energy sources and write each one down on a separate piece of paper that you fold and put into the container.
2. Split the children into two groups. Group 1 selects a piece of paper from the container and the whole group mimes the word that has been chosen. Group 2 has two minutes to guess the correct energy term, receiving one point for each correct answer.
3. Each group takes turns until all the words have been selected. Once finished, add up the points to reveal the winning team.

You will need

- Scraps of paper
- Pen
- Container
- Stopwatch





Switch Me Off

How often do children hear their parents say 'Turn off the light'? Creating reminders to be hung around the service can act as a great reminder.

Method

Create signs with an energy reminder message, writing the message onto a card and adding small pictures or logos to decorate. Add string and hang up at home or in the service.

Variation

Another option for a similar activity is to create banners and posters that include slogans about energy conservation. Encourage the children to discuss the types of slogans they might use and then, working individually or in pairs or small groups, create a poster or banner containing the slogan, decorated with pictures or designs. Some sample slogans are given below:

- 'It's alright, we don't need a light'
- 'If you switch it on, then you switch it off'
- 'The 4 minute shower'

You could also design signs, banners or posters digitally, creating a slideshow to display the projects from the group.

You will need

- Card
- String
- Pens / crayons / paints





Wind in the Sails

Make your own windmills to show the power of wind.

Method

1. Mark the centre of a square piece of paper with a pencil. Next, use a ruler to draw a diagonal line from each corner of the paper, three quarters of the way to the centre dot.
2. Cut down the diagonal lines that you just marked on your paper.
3. Fold every other point into the centre dot and put a drawing pin through the paper.
4. Hold the drawing pin with gathered points in one hand tightly and use your other hand to push the remainder of the pin through a straw (you could also attach your windmill to a pencil). Once the drawing pin is through the straw, use a little bit of masking tape to securely cover the pin. Take outside and see which way the wind is blowing!

You will need

- Square-shaped paper
- Scissors
- Pencil
- Ruler
- Drawing pin
- Straw
- Masking tape





Sunlight on Colour

Did you know...?

Have you ever wondered why people wear lighter coloured clothes in the summer and darker in the winter? Apart from being a fashion choice, it is because colours absorb sunlight differently, with lighter colours reflecting more light, thereby keeping us cooler.

This activity will help to demonstrate the effects of solar energy on our planet and its systems by observing how soils of different colours absorb sunlight differently. This is a good activity for a sunny day!

Method

1. Explain to the children that the white sand represents the clouds and snow; the black soil represents the land (forest, green grass); and the grey gravel represents the ocean or dead grass.
2. Place sand, gravel and soil in the three separate glass bowls, and insert a thermometer just below the surface level of each.
3. Leave the bowls in sunlight for several hours.
4. Observe and record the temperature of each material after several hours in the sunlight.
5. Discuss what effects this solar energy could have on the planet.

You will need

- White sand
- Light grey gravel
- Black potting soil
- Three thermometers
- Three clear glass bowls

Did you know...?

The sun is the most powerful source of energy in the universe. If humans could harness 60 minutes' worth of the sun's energy, it would be enough to power the Earth for an entire year. According to National Geographic, the sun still has around five billion years of life left.





The Draft Tester

Heating and cooling any building uses a high amount of energy. Drafts cause any heat built up to be lost, which means more energy is needed to replace the escaping heat. By using the 'Draft Tester', children will be able to see where the drafts are escaping from and better understand how energy can be wasted.

Method

1. Wrap one end of the tissue paper to a pen or pencil and secure with the sellotape. This is your Draft Tester.
2. Use the Draft Tester to explore the room to find out where any drafts are coming from. Try windows, doors, ceiling and floor. Make a record of where the drafts are coming from and rate them as a strong, medium or small draft.
3. Carry this test out at different times of the day and in different weather conditions. Are the drafts stronger when there is wind?
4. As well as testing the School Age Childcare building, let children take their Draft Tester home and investigate drafts there too. Compare with others to determine which areas of your houses had the strongest draft.
5. Discuss the impact of these drafts and ways we can eliminate them.

You will need

- Thin tissue paper 30cm x 30cm
- Long pencil
- Sellotape
- Pen
- Paper





T-Shirt Messages



Collect used t-shirts that the owners have finished with. This could be from family and friends or you could ask the community to donate their t-shirts to your service. Ensure all of the t-shirts are washed and clean.

Now it's time to spread the message about being more energy efficient. Come up with your own energy saving slogans to decorate the recycled t-shirts. If t-shirts already have images on them just turn them inside out. You could also cut and style the t-shirts.

Arrange to join a local community parade, wear the t-shirts and hand out spares to the community.

Suggested slogans



THEME 3

Litter



Litter has a number of negative effects for the world around us and is one of the simplest ways to show children the impact our behaviour has on the environment.

- **Litter is an eyesore.** Litter can negatively impact your sense of community and make people feel less safe. By picking it up, you are showing pride in your community and improving the look of the area.
- **Litter can harm wildlife.** Birds and other animals in your area could confuse litter for food or nesting materials. Picking up litter helps prevent wildlife from harm.
- **Litter can be a safety hazard for very young children.** Young children are likely to pick up litter out of curiosity. Very young children could put it in their mouths, because this is what they do. This is a safety hazard. Keeping litter off the streets reduces this risk.
- **Littering costs money.** Councils around the country spend millions of euros on sweeping streets, collecting litter and promoting litter prevention. Picking up litter can help to put those funds to something else that your community will benefit more from. If no one dropped litter, however, there would be nothing to collect. Tackling it at source by educating everyone not to drop litter would vastly reduce this spend and provide us all with a cleaner and healthier environment.

While there is not usually a big litter problem in SAC services and schools, by educating children during this stage in their lives, general issues with litter around the country can be reduced.

Did you know...?

Lots of plastic litter ends up in the world's oceans. It can travel long distances on the wind or in rivers and rainwater. If we don't do something about this, in a few decades there could be more plastic than fish in the world's oceans!





Litter Collection

This activity not only helps to clean up areas, it also helps to instil responsibility and the children's respect for their environment. It also supports various areas of the school curriculum, for example:

- **Maths:** Litter surveys, data collection, tally charts, graphs, counting, weighing and measuring.
- **Social, Environmental and Scientific Education:** Materials and manufacturing processes, compost and decay, habitats, impacts of litter on the environment, pollution.
- **Social, Personal and Health / Religious:** Moral issues, caring for others and the environment, caring for wildlife.



Carry out a risk assessment prior to the litter pick. Explain rules to children regarding what can and cannot be picked up, as well as guidance around the area to be picked.

Method

1. Copy the Litter Pick Tally Sheet on the page opposite, create your own or get the children to design one.
2. Discuss the local areas that are in need of a clean-up. This could be your local park, beach, shopping area, etc.
3. Divide the children into groups, with one adult per group, and hand out tally sheets, bags and gloves.
4. Children pick up the litter, record the item on the tally sheet and place items in the bag. Take pictures before and after as well as action shots.
5. Gather the children together near the end of the session to weigh each group's bag and record the weight on their tally sheet.
6. Plan a disposal method for all waste. Ensure all children wash their hands following the activity.
7. Follow up the litter pick by discussing the children's findings, giving each group a minute to talk about their findings.
8. Together, create a graph of all the results and discuss:
 - Which type of litter had the greatest number of items collected
 - Why the children think this is
 - What could be done to prevent this

You will need

- Litter Pick Tally Sheet
- Pencils and clipboards
- Gloves and/or pickers
- Waste bags
- Weighing scales
- Camera

Litter Pick Tally Sheet

Name: Area: Date: Collected Weight:

Item	Tally	Total
Sweet wrappers		
Chocolate wrappers		
Crisp packets		
Drink cans		
Foil		
Plastic bags		
Plastic wrapping		
Paper		
Newspapers		
Drink cartons		
Banana skin		
Orange peel		
Other:		



Publicising the Litter Pick Results

Method

1. Discuss with the children how they felt about picking up other people's litter. Ask them:
 - How do they feel about the issue of litter?
 - Why do people drop litter?
 - What can be done about it?
2. Consider some of the impacts of litter on the environment, for example, it is unsightly, can be harmful to animals, deters tourists. Can the children think of any more?
3. Encourage children to write a letter to the local newspaper explaining the impacts of litter, urging people not to drop litter and giving their own recommendations about what should be done. Support the letter with photographs from the litter pick and the graph that the children produced.



Creation of the 'Litterbug' Character

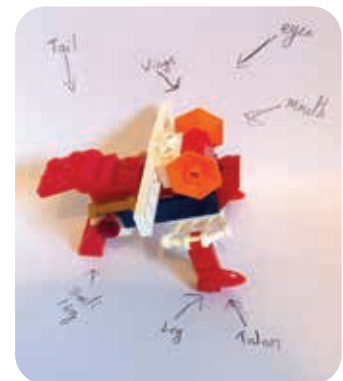
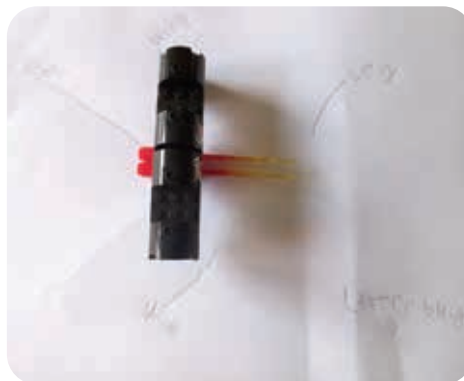
This activity is aimed at helping children to understand the implications of dropping litter, while also educating others in their community through the characters and posters that the children develop.

Method

- In groups or individually, ask the children to develop and design a 'litterbug character' with personality and attitude. Begin by discussing the term 'litterbug' with the children and considering ways to turn it into a character. Talk about developing a persona by asking questions:
 - Who are litterbugs?
 - What do they do?
 - What characteristics do they have? Imagine how they feel.
 - What might a litterbug look like?
 - How could it change our environment?
 - What can it do to change people's attitude to littering?
- Draw/paint/create a model of the bug and label its special features. Ask children to describe in detail what the bug can do for their community. What message would they like to add to their creation?
- Display the posters/models around the service, and ask shops and other services in your community to display.

You will need

- Paper
- Pens / crayons / paint / lego / junk materials



Did you know...?

Nobody is above the law when it comes to litter. Even NASA once got a fine, when parts of one of their space stations fell to Earth. They had to pay a \$400 penalty to authorities in Australia, where the debris landed.



THEME 4

Waste

Waste, sometimes called rubbish, trash, refuse, garbage or junk, is the term used to describe any unwanted materials and objects that are thrown away after use. Some of the waste we produce daily in our homes might include old or leftover food, chemical substances, paper, broken items or used containers.

Some waste materials, such as paper, wood, glass, metals, and plastic containers, can be recycled or reused. Materials that cannot be recycled are either burned (incinerated) or heaped into landfills. Plant matter, such as fruit and vegetable scraps, is biodegradable. It can usually be heaped into a compost, where it will decompose relatively quickly. This kind of waste is often called wet or green waste.

When waste is not collected and suitably disposed of, we might see it dumped somewhere or blowing down the street. Inappropriately managed waste can negatively impact the environment in a number of ways:

- Waste treatment and disposal produces significant greenhouse gas emissions, which contribute significantly to global warming.
- Waste can attract rodents and insects, which can harbour parasites and disease.
- Hazardous wastes can also cause various diseases to humans including cancers, particularly when they are burned
- Toxic waste materials can contaminate surface water, groundwater, soil and air.

Did you know...?

Waste can be solid, liquid, or gas, or it can be waste heat. When waste is a liquid or gas, it can also be called an emission, this is usually pollution.

Did you know...?

In 2019, 1.6 million tonnes of waste was generated by Irish households. Out of the total waste generated by households, companies etc.:

- 1.1 million tonnes was packaging waste
- 62,600 tonnes was electrical and electronic equipment waste
- 580,977 tonnes was hazardous waste
- 46,424 tonnes was made up of just tyres!



Recycling Poster / Collage

A lot of the household waste that we produce can be recycled. Informing children of the types of products that can be recycled will encourage them to do the right thing with their containers and packaging.

Products that can be recycled include:

- Cardboard boxes and milk and juice cartons
- Steel cans, aluminium cans and foil
- Paper and newspaper
- Hard plastic such as bottles and containers
- Soft plastics such as wrappers and crisp packets
- Glass bottles and jars

Method

1. Discuss and explain everything recycling, for example, the differences between hard and soft plastic, the need to sort different coloured glass, and what colour the collection bins are.
2. Make a large poster or collage of the types of things that can be recycled. Draw, cut out or use actual items to make your collage, and add in any interesting facts about waste and recycling that you have discovered.

You will need

- Large sheets of paper
- Markers
- Printed material with images (magazines, leaflets, etc.)
- Samples of waste recyclable materials
- Scissors
- Glue





Did you know...?

There are many great reasons to recycle, including:

- Recycling helps save natural resources.
- Recycling helps save energy.
- Recycling helps reduce the size of landfills.
- Recycling helps create jobs and save money.
- Recycling prevents loss of biodiversity.
- Recycling saves clean air and water.
- Recycling helps reduce greenhouse gas emissions.

(www.cleanireland.ie)

Date for Your Diary

The aims of Global Recycling Day, held on 18th March every year, are twofold. The first is to tell world leaders that a common, joined up approach to recycling is urgently needed, and the second is to ask people across the planet to think resource, not waste, when it comes to the goods around us.

You can find lots of great information about recycling at www.cleanireland.ie



Sustainability Game

Do the children know how to promote sustainability? Acknowledging our actions isn't always easy unless it's pointed out to us. This game will help children to think about what they waste.

Method

1. Discuss good practice for sustainability with the children and also some of the things that people do that are poor sustainability practice (some examples are given below). Record these actions on the white board.

You will need

- White board or flip chart paper
- Card cut to the size of playing cards
- Pens

Good Practice

Planting / caring for a garden
 Passing on toys to someone else when finished with
 Turning off lights when leaving the room
 Sorting rubbish
 Recycling paper and cardboard
 Putting vegetable peelings into the compost
 Reusing and recycling

Poor Practice

Neglecting gardens
 Leaving lights on when no one is in the room
 Mixing all kinds of waste together
 Taking long showers
 Leaving taps running when cleaning teeth
 Not turning off the tap when finished with it
 Dropping crisp packet

2. Ask the children to write or draw each example onto a card.
3. Prepare two large pieces of paper with the heading 'Good Sustainability' on one piece and 'Poor Sustainability' on the other.
4. The children walk in a circle around the large pieces of paper and drop a card to the correct paper.





Where Does it Come From? Where Does it Go?

If you ask children where cheese comes from, the most likely answers from many children would be the supermarket, the fridge or cows! But where are those cows? How did the milk transform into cheese? How far did the milk have to travel to get to the processing plant? Where was the cheese bought? Was it wrapped? What happens to the wrapper now the cheese has been eaten? Exploring together and finding out the answers goes a long way towards encouraging children to think about their own consumption and usage with a more global and sustainable perspective.

This activity explores sustainability by examining familiar foods and encouraging children to consider where the food they eat comes from, how it gets to their plate and what happens to the packaging or waste products left behind.



Method

1. Choose an item of food. Draw or cut out pictures of the chosen item and display. Read the label or any information provided with the product.
2. Discuss and research:
 - Production of the item (location / process)
 - Place of sale
 - Disposal of waste including any packaging, peel, cores, seeds
3. Record 'The Life of ...' on your display.
4. Brainstorm with children any ideas they have for more improved sustainable options for production, packaging, sale and disposal of this and other food items.

You will need

- Paper
- Markers
- Wall space
- Magazines

Did you know...?

It takes between 500 and 1000 years for a plastic bag to decompose.

Composting

Talking to children about compost is a great way to introduce them to the wonders of nature and the environment. Compost is the term used to describe when a person controls the breakdown (decomposition) of natural waste, such as leaves, vegetables, egg shells and old fruit. Composting is usually done in a bin or in a heap, where organic and natural waste is allowed to mix together, and over time it forms a crumbly fertilizer which, when mixed into the soil, is good food for plants. Making compost reduces the need for chemical fertilizers.

The 'composting cycle' demonstrates how the nutrients go around and around in the environment. This can also be known as the 'Circle of Life'.



To Compost or Not to Compost!

Make sure children understand what the word 'compost' means. Explain that not everything that is biodegradable is compostable. By sorting waste for composting, children will learn the difference between various biodegradable products, and what can and cannot be turned into compost. For example, meat and fish scraps should not go into compost as the scent may attract unwanted pests to the area.

Method

1. Research the types of things that you can compost. Not everything can go on to the compost heap or compost bin.
2. Mark one sheet of paper 'Compostable' and the other 'Not Compostable' and put these up on the wall where children can see them. Make lists on the correct sheet of paper. You could also make posters of what you can and cannot compost.
3. Discuss why some foods can be added to composts, while others can't.

You will need

- Large sheets of paper
- Pens
- Wall space



Making a Compost Heap or Bin

All composting techniques require three basic ingredients: browns, greens and water.

- **Brown** materials include dead leaves, branches, twigs, etc. These work to provide carbon for the compost.
- **Green** materials include grass clippings, fruit scraps, vegetable waste, etc. These work to provide nitrogen.
- All composting needs **water**, and having the right amount of water is important for compost development. Water provides moisture to break down the organic matter.

Composting needs to have equal amounts of browns to greens, with the different layers being alternated with different sized particles.

Method

1. Add brown and green materials to your compost area or bin, making sure to break down larger pieces first. Moisten the dry materials before they are added to the compost mix.
2. Once the compost pile has been established, mix in grass clippings and other green waste materials, burying fruit and vegetable waste.
3. Cover the compost heap with the tarpaulin or lid to keep it moist.
4. Once the material at the bottom of the compost heap is dark in colour, it is ready to use. (This can take anywhere between two months to a few years, so this activity teaches some patience as well.)

You will need

- Garden fork
- A dry and shady spot near a water source to place your compost pile or bin
- Shovel or spade
- Water
- Compost bin or tarpaulin





Watching Compost

Clear drinks bottles are perfect for watching composting in action and keeping an eye on the changes that are happening within your compost. This activity is also a good example of a way to recycle something that would have otherwise ended up in the rubbish.



Method

1. Cut the top off a 2 litre drinks bottle and rinse it out well.
2. Add a layer of soil on the bottom and then alternate layers between soil and compostable material such as vegetable peelings, dead leaves, grass and pine cones, straw and egg shells.
3. Add water to dampen it all the way through and cover with layers of damp newspaper.
4. Let your compost sit for several weeks in a spot where it will get plenty of sunlight.
5. Watch as the material that you have added to your compost bottle changes over time.

You will need

- Empty 2 litre drinks bottle
- Soil
- Leaves, grass, newspaper, organic waste produce
- Water
- Old newspaper



Make a 'Circle of Life' Compost Poster

Gather a selection of arts and crafts materials, and natural materials such as leaves, as well as large sheets of paper, and design a poster showing compost and the 'circle of life'. When designing your poster think about the stages that you could include. An example is given below.





Lunchbox Waste

Waste is created in many ways. To help children understand the amount of waste created by each individual person, have them examine their own lunchboxes over a two-week period.

Method

1. Prepare a wall chart, similar to the sample chart below.
2. Ask children to put all waste from their lunchbox throughout the school day back into their box and bring the lunchbox with the waste contents to the SAC service. This might include plastic or paper wraps, tinfoil, peelings, fruit stones, pips, etc.
3. List the types of waste as shown in the sample chart below.

You will need

- Lunchbox waste
- Wall chart
- Markers
- Wall space

Lunchbox Waste Audit Chart

Type of Waste	Monday	Tuesday	Wednesday	Thursday	Friday	Total Week 1
Plastic	III	HHH I	HHH II	II	HHH HHH	28
Paper	I					
Peelings	HHH I					
Tinfoil	HHH III					
Food	HHH					
Daily Total						

4. Ask each of the children to examine their waste and put a tally mark onto the chart on the corresponding day.
5. At the end of the first week, discuss the results and the effects the amount of waste from your audit would have on the:
 - School Age Childcare environment
 - Community environment
 - World environment
6. Calculate how much waste your lunchboxes would produce if you continued with this amount for a month or a year.
7. Discuss what could be done to reduce the waste from lunchboxes the following week. Examples might be packing a litter-less lunch, using re-sealable containers for sandwiches and a thermos or reusable bottle for drinks, and putting everything in a reusable bag or lunchbox.
8. Use a fresh lunchbox waste audit chart to document the second week and compare the waste from the two weeks.



THEME 5

Transport

When we do something that burns fuel, it emits carbon dioxide into the air. Just as we leave behind footprints when we walk in wet sand, the carbon dioxide from our actions leaves carbon in the air, which causes damage to the environment. This is referred to as a carbon footprint.

Our individual carbon footprint includes energy emissions from all of our fuel burning activities such as heating and lighting our houses, or using a fridge to keep food cold. It also includes all transport-related emissions from cars, trains, planes and buses that we use to take us somewhere, and from cargo ships and lorries involved in the freight and distribution of the goods that we buy. As one of the biggest contributors to carbon emissions, transport has a major impact on climate change, and is a big contributor to air and noise pollution.

We should aim to think of ways we can become more carbon neutral, removing as much carbon dioxide from the atmosphere as we put in. We can become more carbon neutral by first reducing our carbon footprint, i.e. cutting back on the carbon we produce through our actions, and also by removing carbon from the atmosphere, also called carbon offsetting, for example, by planting trees.

The most common way to reduce our carbon footprint is to Rethink, Reduce, Reuse, Recycle, Refuse. Rethinking the transport we take is part of this.

It is important that children are aware of the various modes of transport and how they impact the world that we live in, and consider ways to reduce or offset carbon emissions caused by transport. By walking or biking to a destination rather than driving, for example, not only will we save money on petrol or diesel, but we will be burning less fuel and releasing fewer emissions into the atmosphere. Cycling, scooting and walking are excellent ways for children to reduce their carbon footprint.

On top of this, these activities have many long-lasting benefits.

They help children to develop road awareness and create good habits for an active adult life. Walking and cycling also help children to connect with nature and to get to know their local area. If these are not a viable option, we can consider other ways to reduce our fuel emissions such as carpooling or using public transportation. We can also consider the food and goods that we buy. Goods transported long distances and/or via fuel-inefficient transport (e.g., highly perishable produce flown long distance) are among the major contributors to a high carbon footprint.

Date for Your Diary

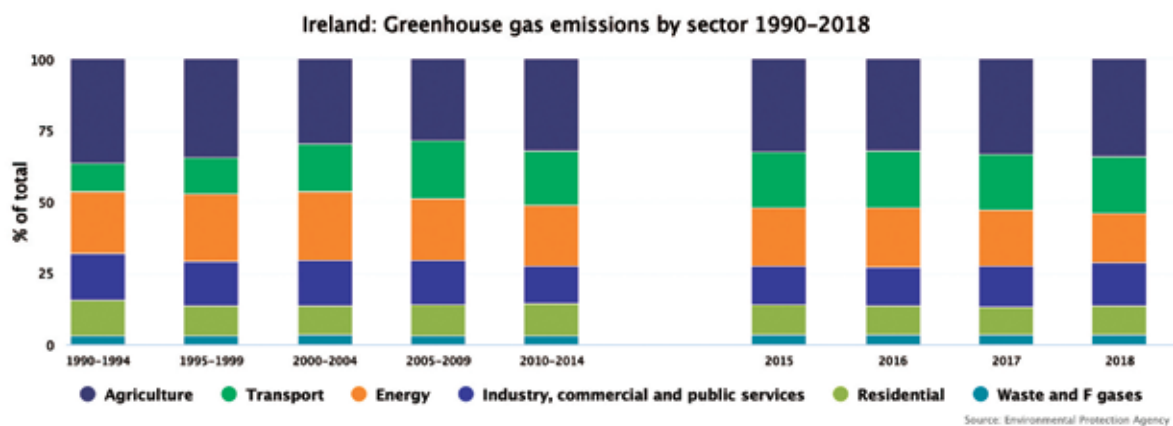
Zero Emissions Day, held on 21st September, is a worldwide movement that aims to burn no fossil fuels for 24 hours that day.

Engaging children in activities that heighten their awareness of the potential damage of the transport they take is a good way to encourage them to think about the transport they use and the damage it might be causing, and the alternative ways they could get from A to B, or reduce their consumption of goods with a high carbon footprint.

Did you know...???

In Ireland, between 1987 and 2017...

- The number of licensed vehicles increased by 179%
- The number of private cars increased by over 1.3 million
- The number of goods vehicles increased by 238,000



You can find more information about environmental indicators both in Ireland and globally at www.cso.ie and <https://datacommons.org/>



Traffic Survey

If your School Age Childcare service is in an urban area where there is a lot of traffic, you might carry out a traffic survey to get the children thinking about different types of transport and carbon emissions. This involves identifying the type of traffic passing the service and the number of people travelling in each mode of transport. After the data is collected, as a group discuss the impact of these journeys on the environment.

Remember to carry out a risk assessment before beginning this activity.

Method

1. First design a survey record. A Traffic Survey Record template is given on the page opposite but the children will feel more engaged in the survey if they design their own.
2. Next, divide the group into teams of three. On each team there will be a. someone to identify the type of vehicle, b. someone to count the number of people travelling in the vehicle and c. someone to record the information on the survey record by ticking the appropriate box in the table.
3. Decide with the children how long you will take to carry out the survey. In a busy area, 15 to 20 minutes will be enough. Position the children in a safe position where they can see the traffic passing by.
4. When you have finished surveying, ask the children to present their results whatever way they like using bar charts, pie charts or get creative with posters!
5. Discuss with the children the most common forms of transport and the average number of people travelling together, and consider the impact of each form of transport. Look online to find out how much carbon dioxide (CO₂) each form of transport emits per kilometre. For example, a typical car emits about 180g of CO₂ for every kilometre it travels. From the data collected, work out how much carbon dioxide is emitted per hour in a one kilometre stretch of road outside the service and use this information to lead a discussion about the impact of all of this traffic on the environment as well as the different types of fuel used, alternative modes of transport, and other ways people could cut down on their carbon emissions.

You will need

- Paper and colouring pens or pencils
- Clipboards
- Appropriate outdoor clothing
- Hi-vis jackets

Did you know...?

In Ireland, the average petrol car on the road produces the equivalent of 180g of CO₂ every kilometre, while a diesel car produces 173g of CO₂/km. Generally, the larger the car, the higher the emissions.

Traffic Type	Number of people travelling in vehicle		
	1	2	3 or more
 Car			
 Lorry/truck			
 Van			
 Bus			
 Tram			
 Taxi			
 Motorbike			
 Scooter			
 Bicycle			

Extra activities

There are many ways you could build on the traffic survey using Google maps and an online carbon emission calculator.

- Get children to keep a list of all of the journeys they did over the course of a week and how they got there – bike, walking, car, bus etc. Ask children to pick one journey and use an online carbon footprint calculator to work out how much carbon they emitted. Discuss ways they could reduce this.
- Pick a far off destination such as Sydney, Australia and calculate the most energy efficient way to travel there. How long would it take to walk??!! This can lead into discussions about why people chose one mode of transport over another and ways to cut down our carbon footprint from transport that are realistic.
- Consider the transport of goods across the world, such as a jumper made in China being sold in a local shop, or bananas from Latin America available from the local supermarket. Research the environmental policies of different manufacturers and retailers in their transportation of goods. Ask children to suggest ways their families could reduce their carbon footprint in the food or other items they buy (shop local, farmers markets).

Did you know...?

Bananas must be transported over long distances from the tropics to world markets. The fruit requires careful handling, rapid transport to ports, cooling, and refrigerated shipping. This technology allows storage and transport for 3–4 weeks at 13°C. On arrival, bananas are held at about 17 °C and treated with a low concentration of ethylene. After a few days, the fruit begins to ripen and is distributed for final sale.



Green Transportation Promotion Materials

Method

1. Divide children into groups and ask each group to choose a 'green' mode of transportation, this might be electric, solar, wind, biofuel or hybrid.
2. Get the children to design materials to explain and promote their chosen method.
 - Discuss with the children the information they will cover such as the type of fuel used to power the vehicle and an explanation of how it works, examples of vehicles that use this type of power, a city or country that uses them, some facts and figures about their chosen method.
 - Children can use any method they like such as posters, models, powerpoint type presentation, or even a rap, a song, a poem or a play. Get those creative juices flowing!

You will need

- Arts and crafts materials – paints, paper, pens, cardboard tubes and boxes, cotton wool, pipe cleaners, felt, construction paper
- Musical instruments



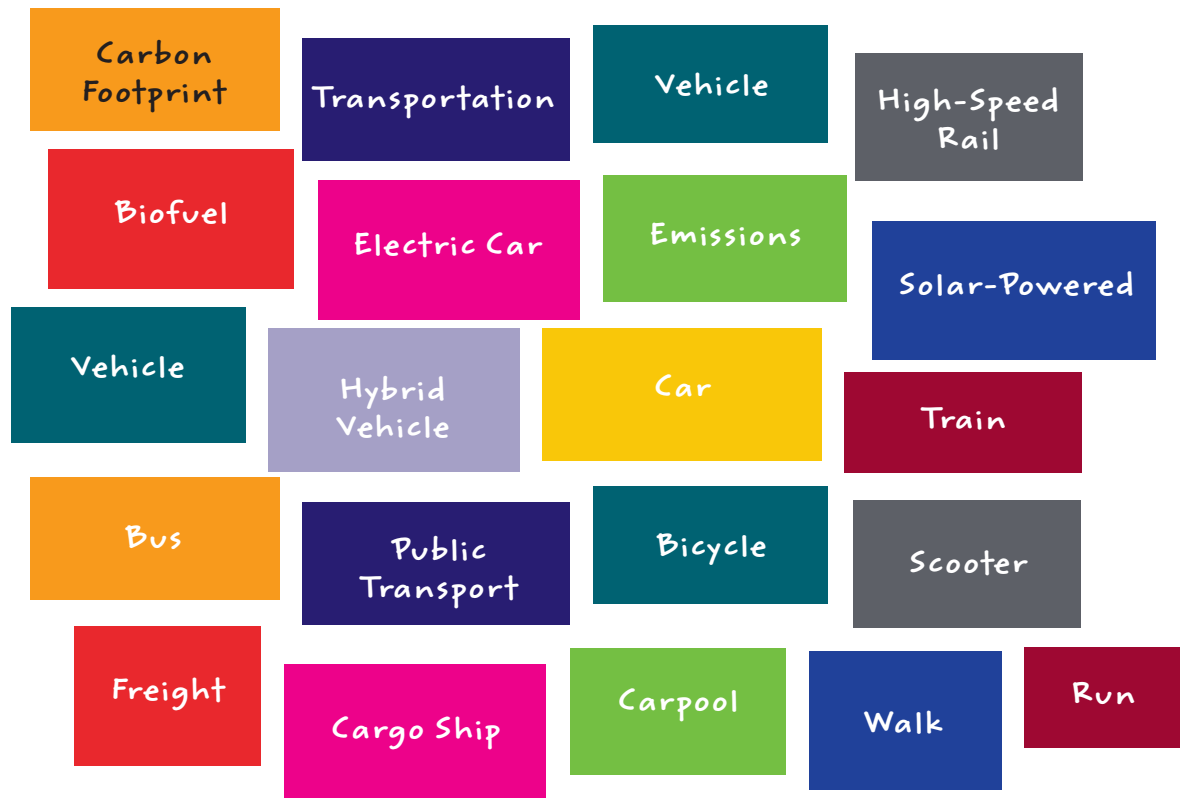
Transport Wordsearch

You will need

- Pens or pencils
- Paper
- Online access to a wordsearch generator such as <https://www.worksheetworks.com/puzzles/wordsearch>

Method

1. Ask children to name as many words or terms they can think of that relate to transport and the environment. The words below will get you started.
2. Enter the words into a wordsearch generator, the more words you have, the bigger your wordsearch will be.
3. Print out for children to complete.





THEME 6

Outdoor Space

Providing fun activities that children enjoy while they gain knowledge about nature and the environment will get children thinking about the world around them. Consider creating a carefully thought out outdoor science and discovery area in which children can investigate materials found outdoors (e.g., different rocks, leaves, sticks, seed pods) using magnifying glasses, scissors, etc. You could also offer resource books that help children classify the different plant life they find or identify where a plant is in its growing cycle.

Found natural materials could be used in an outdoor art area in which children can trace, draw and make rubbings or collages to encourage them to pay attention to and experience the plants and animals in their local ecosystem. Depending on your service, the outdoor environment may include a dedicated outdoor play space, or you may use nearby outdoor spaces such as a local park, forest or woods. Follow the children's interests and support them to explore.



Nature Walk Bingo

This activity can be either an organised walk or the children can explore in the outdoor area of the service if it is a big enough and varied space. Be sure to explain to the children not to disturb plants, creatures or habitats, only to look and observe.



Method

1. Create a 'Nature Walk Bingo Card' or just search nature bingo online and copy one suitable to your local environment (see sample below from www.forkandbeans.com).

You will need

- Nature Walk Bingo Card
- Pen



2. Bring children out for a nature walk and ask them to mark off on the card when they locate any of the items listed. Older children could write down the location that they find the item. If time is limited, suggest that they look for one line across, down or diagonal. Try not to rush the activity and let the children absorb what they see.
3. When you return to the service, discuss what the children have found, where they found it, and what kind of habitat it was in – damp, dry, bright sunlight or a dark covered place. Was it difficult to find? Was there only one or were there lots of them? Identify the leaves and berries the children spotted.



Minibeast Safari

This activity could be carried out over a few days, it could be on organised walks or the children can explore any time in the outdoor area. Again, be sure to explain to the children not to disturb plants, creatures or habitats, only to look and observe.

Method

1. Create a Minibeast Safari Sheet with a system to colour code the locations using the sample below.

1. On the ground

2. In dead leaves and soil

3. On a plant






4. Under a stone or log












5. Flying

2. Bring the children out for a nature walk and ask them to find the creatures listed and note where they found them by placing a tick in the appropriate column. Discuss what you have found when you get back to the service.

You will need

- Minibeast Safari Sheet
- Pen

		1	2	3	4	5	Other Place
Ant							
Beetle							
Bluebottle							
Bumble Bee							
Butterfly							

		1	2	3	4	5	Other Place
Caterpillar							
Centipede							
Dragonfly							
Earwig							
Fly							
Ladybird							
Slug							
Snail							
Spider							
Wasp							
Worm							



Leaf Identification

Encourage children to take a closer look at leaves to find out more about leaf characteristics and how leaves can be used to identify trees and plants.

Method

1. Go out for a walk and collect leaves of various shapes, sizes and colours from the ground along the way.
2. Examine the characteristics of each leaf and carry out a comparison investigation by asking:
 - What differences and similarities can you see?
 - How are the leaves arranged on the twig?
 - What do the leaves feel like? Are they rough or smooth?
 - What are the edges of the leaf like? The edges or margins of leaves can provide clues to the tree's identity. Do they have hairs? Or teeth?
 - Can you identify the tree that each leaf came from?

You will need

- Leaf Identification Chart
- Crayons
- Paint
- Paper



Other options

- Make prints of the leaves – Paint the back of the leaf and carefully print onto paper.
- Make a leaf crayon rubbing – Place the leaf on a smooth, hard surface, vein side up, and cover it with a piece of paper. Rub a crayon back and forth across the paper, directly above the leaf. The leaf's margin and veins will appear on the paper as you rub.

For more information and activities go to www.woodlandtrust.org.uk

Leaf Identification chart

Simple Leaves



Oak
Dair



Hawthorn
Sceach gheal



Beech
Feá



Hazel
Coll



Holly
Cuileann



Birch
Beith



Alder
Fearnóg



Wild Cherry
Crann Silíní Fiáin



Guelder Rose
Caoir chon



Sycamore
Seiceamar



Lime
Teile



Elm
Leamhán

Compound Leaves (made up of several leaflets)



Ash
Fuinseog



Rowan
Caorthann



Elder
Trom



Horse Chestnut
Crann Cnó Capaill



Nature Art Creations

Method

Choose some of the collected leaves and think about what they might look like. Could you combine a few leaves to make an object, animal or person? What else could you create?

Try using other items you have found in nature to create works of art!

You will need

- Leaves, twigs, petals, grasses of various shapes, sizes and colours collected from the ground
- Crayons
- Glue
- Paint
- Googly eyes
- Paper



Becoming a no-spray or organic service means that you commit to not using any pesticides or chemical products in your outdoor space as these are poisonous to wildlife.

You can find alternatives to use at <https://nfgws.ie/alternatives-to-pesticide-use-in-gardens/>



Seed Bombs

Wildflower seed bombs are an ancient Japanese practice called Tsuchi Dango, meaning 'Earth Dumpling' (seed bombs are made from clay earth). They are easy and enjoyable to make and once you introduce Irish wildflower seed bombs to the bare Irish soil, the germination process and Mother Nature takes care of the rest for you. Over time they will explode into growth, and develop into a beautiful, colourful display.

There is no site too small for a wildflower patch, even a large container is good enough if space is tight. The best time to scatter seed bombs are spring and autumn.

Method

1. In a bowl, mix together 1 cup of seeds with 5 cups of compost and 2-3 cups of clay powder (you could use clay soil instead if you have it).
2. Slowly mix in water with your hands until everything sticks together.
3. Roll the mixture into firm balls and leave them to dry in a sunny spot.
4. Now for the fun bit! To plant your seed bombs, prepare the soil wherever you plan to introduce them by using a rake or a small garden fork to loosen the soil.
5. Throw the seed bombs at the soil and wait to see what pops up! For them to explode properly, it's best to throw them at a wall or place a stone where you want them to explode.
6. Check on the planted seeds periodically to make sure they don't dry out during dry periods.

You will need

- Meadow flower seeds or seeds collected from the garden
- Peat-free compost
- Water
- Powdered clay (found in craft shops)
- Mixing bowl
- Container and soil OR patch of ground
- Rake or garden fork
- Wildflower seeds

Date for Your Diary

On the last Saturday of January every year there is an International Seed Swap Day where gardeners can come together to swap seeds of their best plants. This year, could your service organise a seed swap in your local community?

Top tips

- Wildflowers need sunlight to germinate so make sure you choose a sunny spot.
- Make sure you are planting native Irish flowers.
- Birds might be attracted to the seeds so you might need to erect a scarecrow or use netting to cover the area.



THEME 7

Healthy Living

The term environment can be used to describe everything that affects a living thing and helps it survive. All living things need air, water, food and shelter to survive and stay healthy. Unfortunately, our environment can also include hazards that may affect our health. Smoke, chemicals, toxic minerals, viruses and other materials can impact on the quality of our air, food and water supply. The changing climate also has consequences for our health, well-being and safety.

Making sure that our environment is healthy, and has all of the ingredients that we need, is important for everyone, but it's especially important for babies and children because their bodies are growing and developing at a faster rate than that of adults. They can, therefore, be more seriously affected by unhealthy environments.

While there is a lot of discussion these days about healthy eating, we rarely stop to think about how the air we breathe, the water we drink and the shelter we use, all of which we are in contact with every day, all help us to survive. For example, are the places where we live and play and learn healthy for us? If we think they're not, and might be doing us harm, we need to ask how we can change that. What happens if we have water, but it's dirty? Or if we have air, but it's polluted? Or if we have food, but it's not nutritious? Or if we have shelter, but it makes us unhealthy? Do we still live?

Did you know...?

You may be aware that eating too much red and processed meat is bad for your health but did you know that cutting your red meat consumption also makes your diet more climate-friendly?

The Intergovernmental Panel on Climate Change (IPCC, 2019), in a special report on climate change and land, recommend that we all reduce our meat consumption. This is because the production of meat contributes to deforestation, loss of biodiversity, greenhouse gas emissions, vast water usage, soil degradation, and, ultimately, climate change.

According to the United Nations, almost a quarter of global greenhouse gas emissions comes from agriculture and other related land use, with beef producing the most emissions.



Air, Water, Food and Shelter

Now that we know that all living things need air, water, food and shelter, let's spread the word! Share the message with as many people as possible, starting with other people in your service, and then to your homes, schools and communities.

Method

Individually or in pairs, make a poster that explains the four things we need to stay alive. Think of slogans such as 'Young children deserve a healthy world to live in,' as well as drawings and different examples that will represent air, water, food and shelter.

You could also make a series of postcards with the important messages and hand them around your community.

You will need

- Pens
- Paints
- Paper



Play for Survival

After discussing issues relating to air, food, water and shelter that might be in your community, county or in Ireland as a whole, for example how the current homelessness crisis impacts on people's need for shelter, put together a short art-form performance through dance, drama, music or a play.



Method

1. Either in one large group or in smaller groups, let the children decide which of the elements for survival they are going to focus on.
2. Encourage them to write a short script, share out parts, prepare costumes and practise it well before sharing it with other members of staff and children in the service, and even with parents or the local community. This activity could take several days, or even weeks from start to stage!

You will need

Various props and costumes



The Green Code

Developing a Green Code that outlines a code of practice around environmentalism and sustainability can really help us to plan actions to create a healthier environment. Although some of the actions may seem small and insignificant on an individual level, together they can have a big collective impact.

Method

Discuss with the children what a Green Code might look like and what kind of actions could be included. For example, turning off water taps tightly, recycling (aluminium, glass, plastic, paper, cardboard), not using plastic water bottles, using both sides of the paper, adopting a plant to help purify indoor air. From your discussion, add the children's suggestions and write or type up in the form of a contract, with the following heading:

You will need

- Pens
- Paper
- White board

THE GREEN CODE

I promise to make the following changes of behaviour to ensure a healthier environment for our community and planet



Responsibility for the World

This activity encourages the children to think about responsibility. Is it someone else's place to look after the planet or should we each be doing a little to contribute to a healthy environment and healthy living?

Method

1. Give each child a balloon to blow up, and ask them to draw a rough map of the world on it to create a 'globe'. The globe or world balloon is then tied to their left foot with string.
2. Divide the children into the three colour teams. The aim of the game is to burst the balloons of the two other teams while protecting those of your own team for three minutes. Children must only touch the balloons, not each other. **Any children playing too roughly will be out.** The winning team is the team with most balloons still in the game at the end of the three minutes.
3. When the game is over, ask the children about the different strategies they used to protect their team's world balloons. Talk about the concepts of responsibility, loyalty and competitive human nature.

You will need

- Balloons of three different colours
- String
- Timer



Earth Game



Method

1. Sitting in a circle, pass an 'Earth ball' (can be any type of medium or large ball) around as Earth songs are played. When the music stops, the child holding the ball shares a way they think they can help the Earth and keep us all healthy.
2. That child then names another child and asks, 'How can you help the Earth and keep us all healthy?' and tosses the Earth ball to them. Begin the music again. The game continues until everyone has had a turn.

You will need

- Medium or large ball

Suggested Music

We've Got The Whole World In Our Hands -
Earth Day Song

<https://www.youtube.com/watch?v=eIQUOlyE7q0>





Letter from Mother Earth

Did you know...?

Mother Earth (sometimes called Mother Nature) is a personification of nature that focuses on the life-giving and nurturing aspects of nature by embodying it in the form of the mother.

Date for Your Diary

International Mother Earth Day is celebrated on 22nd April.

This activity will really make the children think about what they can do to contribute to healthy living; even small contributions can help towards the overall ambition.

Method

1. Write a letter to the children from Mother Earth (sometimes called Mother Nature) outlining the damage being done. To make it convincing, add a bit of drama and emotion, and personalise it to the children in the service. Post the letter in an envelope addressed to your School Age Childcare service and read with the group. There is an example of a letter opposite (adapted from Geoawesomeness, 2018).
2. Use the letter to prompt a discussion about what Mother Earth needs and wants, explaining any words in the letter that you think the children might not be familiar with.
3. Think about how you could help, writing down any suggestions the children have. Have you learned anything from the other activities in this book that might help?

Examples of How We Can Help Mother Earth

- Use paper on both sides
- Don't litter – find a bin
- Tell adults and others to look after the environment
- Take short showers
- Turn lights off when not in use
- Walk or cycle
- Share car journeys (car pool)
- Don't waste water
- Plant trees
- Do more with less
- Reuse plastic bags

4. Ask the older children if they would like to write a reply to Mother Earth explaining how they can help. Younger children can give ideas and draw Mother Earth a picture. The children can then present what they have done to the others in the service.

LETTER FROM MOTHER EARTH

Dear Children and Adults of Ireland

I am Mother Earth and I am writing this to let you know what I am going through. I lovingly give you fresh air to breathe, clean water to drink, fertile soil to grow your food, life-saving herbs and medicines, a beautiful world teeming with diverse flora and fauna, and much more.

First things first. I'm your mother and I love you, but you really need to stop taking me for granted. I single-handedly feed all 7.9 billion of you. And you are growing every day. Your demands are growing every day. Don't you understand, there's only so much I can do? You're trying to change me, my climate, my natural resources, and my structure in every possible way.

The alarming pollution rate pains me, ever since you started your industries in the 1800s, you have been reckless. Mindless deforestation, careless urbanisation, inexhaustible CO₂ emissions, river channelisation, unchecked extraction of fossil fuels... You ask so much of me... So much more than what I can give you.

My resources are limited. I cannot replenish them at the pace you want me to. So, please stop. Because I cannot change according to your needs. I cannot keep up with your lifestyle and your never-ending demands.

There is so much waste and pollution all over me that it hurts me beyond words. Don't you see my pain when the ground beneath your feet shakes? When storms and tornadoes erupt from my heating body? Every year you report that the last year was the hottest on record. I'm losing the oldest and thickest ice from the Arctic sea cap. My sea levels keep rising.

I fear that a day will come when there will be no water, trees, animals or birds. My dear friends who are reading this letter please help me. If you want me to take care of you, you need to take care of me first.

With love and affection,

Mother Earth



THEME 8

Biodiversity

Biodiversity is the term used to describe all the various kinds of living organisms you'll find in one area, including all of the different animals, insects, plants, fungi and microorganisms like bacteria, from the tiniest flower to the biggest whales in the sea. Each of these species and organisms work together in ecosystems, like an intricate web, to maintain balance in the natural world and support all life.

Humans depend on the biodiversity of the living world for the resources and other benefits it provides but, unfortunately, human activity is having adverse impact on it through over-population, habitat destruction, pollution, introduction of invasive species and climate change. On a global scale, there are efforts being made to address these harmful effects, such as reforestation and the protection of endangered habitats and animals, but we are all aware there is a lot more that needs and can be done. There are many things on a local level that we all can do to protect the biodiversity that surrounds us, and involving children in these will raise their awareness of biodiversity and its importance.



Many of the initial actions in the activities outlined below are experiential or project-based but, once in place, a bug hotel, bird station or micropond will provide everyday activities for children as they explore and experiment.

BIRDS

To attract birds to your outdoor area it can be useful to create a bird station. Your bird station can be as simple as buying a few bird feeders containing nuts or seeds that you hang on a wall or from a tree outside the service and keep topped up throughout the winter. Or you may wish to make your own feeders or create a bird bath.

There are five rules you need to remember when creating a bird station:

1. Feed regularly. Don't put out lots of feeders and then forget to refill them. Birds can become dependant on a food source during harsh weather.
2. Only use fresh peanuts and seed. Do not feed mouldy, wrinkled or wizened peanuts or seed.
3. Ensure fresh water is always available for drinking and bathing. An upturned dustbin lid with a stone in it is often all that is required. Be sure to remove the ice in cold weather so that birds can drink.
4. Birds often feed on the ground below a feeder. Make sure that there is no shrubbery nearby that could conceal a cat, and try to keep all feeders at least 1.5-2 metres above the ground.
5. Remember to wash all feeders and to change the water in the bird bath on a regular basis.





Build a Bird Nestbox

If you are lucky to have someone in the service who is good at DIY skills, you could construct a bird nestbox using the instructions provided at <https://www.rspb.org.uk/fun-and-learning/>

The entrance hole size depends on the species of bird you hope to attract:

- 25 mm for blue, coal and marsh tits
- 28 mm for great tits, tree sparrows and pied flycatchers
- 32 mm for house sparrows and nuthatches
- 45 mm for starlings

Things to consider

- Unless there are trees or buildings that shade the box during the day, face the box between north and east, thus avoiding strong sunlight and the wettest winds.
- Make sure that the birds have a clear flight path to the nestbox without any clutter directly in front of the entrance. Tilt the box forward slightly so that any driving rain will slide off the roof.
- If fixing your nestbox to a tree, don't use nails as they may damage the tree. It is better to attach the box with a nylon bolt or with wire around the trunk or branch. Use a piece of hose or section of car tyre around the wire to prevent damage to the tree. Remember that trees grow in girth as well as height. Check the fixing of your box every two or three years.
- If the box is going to be placed in a location where it will be exposed to heavy rain, it would be useful to cover the top of the lid with recycled leather or rubber. This will provide further waterproofing and extend the service life of the box.
- Nestboxes are best put up during the autumn. Many birds will enter nestboxes during the autumn and winter, looking for a suitable place to roost or perhaps to feed. They often use the same boxes for nesting the following spring. Tits will not seriously investigate nesting sites until February or March.





Fat Balls

Rather than buying pre-made bird feeders, you can make your own fat balls for your outside area.

Method

1. Chop the lard block into a few pieces and get the children to press it between their hands over the bowls. The lard starts off solid, but quickly warms up and becomes easy to work and mash up.
2. Take a handful of the dry ingredients and mash it into the ball over and over again until the two combine. Keep adding dry ingredients but stop before the whole thing becomes crumbly – you want it all to stick together.
3. When you think it's done, take a small amount in your hand and start forming it into ball shapes the size of a mandarin.
4. Cut pieces of string about a foot in length, tie the two ends together in a tight knot and push the knotted end into the fat ball and reshape again if necessary. (You can leave this step out of you don't plan to hang the fat balls up.)
5. Put the fat balls into the plastic container, put the lid on and store in the fridge overnight.
6. The following day, hang the fat balls from trees or place on a surface birds can access.

You will need

- A knife
- A block of lard
- Some bowls
- Dry ingredients such as nuts and seeds
- String
- Scissors
- Large plastic airtight container with a lid

You can find other recipes for homemade bird feeders at <https://blog.countrylife.ie/>





Create a Bird Bath

Just like us, birds love a refreshing drink and a good bath once in a while. Your bird bath doesn't have to be huge, an upturned lid of a bin or even a plant saucer with some rocks/ stones will give birds a place to perch in collected rainwater. They won't get out of their depth, there's plenty of space to flap about, and every chance to do it in the company of other birds, which is always safer.



Method

1. The simplest bird bath is a plant saucer (min. 30 cm diameter) with a textured finish. Find a suitable location in the outdoor area to put the saucer where the birds will be safe. A good choice is on an open flat area, where there is no long grass for a cat to hide and pounce.
2. Rest the plant saucer on top of four bricks (optional).
3. Put a rock or two in the saucer for the birds to perch on.
4. Then just add water – it doesn't matter if it is tap water or rainwater.

You will need

- A plant saucer
- Four bricks (optional)
- Small rocks
- Water

Top tip

If you place a wooden ramp from the saucer to the ground, hedgehogs can get in and out too.

It can be really interesting for children to take part in a bird survey to add a scientific element to your bird work. Many people take part in the annual BirdWatch Ireland Garden Bird Survey. You can find all of the information you need to get started at <https://birdwatchireland.ie/>

BUGS



Build a Bug Hotel



Building a bug hotel (also known as a wildlife hotel or stack) in your outdoor area can provide a safe hideaway for insects and other wildlife and help make use of your garden waste. You can build your bug hotel at any time of year, but you might have the most natural materials such as straw, dry grass and hollow plant stems in autumn.

You will need

You can choose any of the following:

- Old wooden pallets, logs, strips or planks of wood, woodchips, bark
- Old terracotta pots
- Old roofing tiles
- A sheet of roofing felt
- Bricks, preferably those with holes through them
- Sand, soil
- Straw, moss, dry leaves, pinecones
- Hollow bamboo canes
- Whatever else you can find - preferably natural materials

Method

1. First you need to choose a suitable site. It needs to be level and the ground firm. You will get different residents depending on where you place your hotel, as some wildlife like cool, damp conditions and others (such as solitary bees) prefer the sun. If you have vegetable beds, keep it a good distance away from them.
2. Create a strong, stable framework no more than a metre high from your chosen materials. Old wooden pallets are perfect for a large hotel as they are sturdy and come with ready-made gaps. Start by laying some bricks on the ground as sturdy corners. Leave some spaces in between the bricks for bugs and wildlife to move in. Add three or four layers of wooden pallets on top of your bricks.
3. Fill the gaps. The idea is to provide all sorts of different nooks and crannies, crevices, tunnels and cosy beds, so do leave some small spaces. If you leave some larger openings at the base you're more likely to attract hedgehogs. Add...
 - Dead wood and loose bark for creepy crawlies like beetles, centipedes, spiders and woodlice
 - Holes and small tubes for solitary bees made out of bamboo, reeds and drilled logs (not plastic)
 - Larger holes with stones and tiles, which provide the cool, damp conditions frogs and toads like – if you put it in the centre you'll give them a frost-free place to spend the winter (they'll help eat slugs)
 - Dry leaves, sticks or straw for ladybirds (they eat aphids) and other beetles and bugs
 - Corrugated cardboard for lacewings (their larvae eat aphids, too)
 - Dry leaves, which mimic a natural forest floor
4. Add a 'roof'. When you think you've gone high enough, put a roof on to keep it relatively dry. Use old roof tiles or some old logs or planks covered with roofing felt. You could even give it a 'green' or 'brown' roof by putting a bit of rubble or gritty soil on top. Only plants that love dry conditions cope up there. Pop some wildflower seeds around the hotel to give food for butterflies, bees and other pollinating insects.
5. If you want, choose a name for your hotel and put a sign up outside.

Share images and videos of your new home on the service's social media channels to inspire others to build their own hotel!

Variation

If you don't have time to make a bug hotel, nothing could be easier than making a bug trap door instead! Just place a flat sheet of wood or metal with a handle on the grass outside. An old cupboard door is ideal or you could affix your own handle to an old sheet of wood. Soon the grass underneath it will disappear and all those bugs who like dark, damp places will flock!



Create a Micropond

To create a micropond, all you need to do is sink a watertight container such as a dish, bowl, bin lid or tray into an area of soil and fill with rainwater to a depth of 8–10 cm. It will be no bigger than a puddle. Add some sand and gravel as a bottom layer for bugs to burrow and ensure that the edges are shallow, allowing frogs to walk in and out easily. Fill with rainwater and plant one or two suitable plants such as waterlilies. Finally, place a rock/ large stone or two in and around the pond for shelter. Check regularly to see what is growing in the pond.

If you don't have an area you can sink a pond into, you can create one in a wide steel bucket. Remember though, if your pond isn't sunk into the ground, you will need a ramp up to it for frogs to walk up.



BEES

Pollinators provide pollination services to over 180,000 different plant species. Pollen collects on the pollinator's body as it is feeding on a flower's nectar and, as it moves on to a new flower, it carries the pollen with it, aiding fertilisation. This helps plants survive and greatly increases the chances of a plant producing a fruit or vegetable. Pollinators help produce a third of the world's food supply by giving us countless fruits, vegetables and nuts, and providing half of the world's oils, fibres (such as the cotton used to make clothes) and other raw materials.

Honey bees are among the most numerous and efficient pollinator species in the world. In Ireland, we also have solitary bees that don't produce honey but, interestingly, are the best pollinators in our gardens. As they are not very efficient at storing the pollen when they move, they spread a lot of pollen, creating more flowers.

Date for Your Diary

World Bee Day on 20th May highlights the vital role that bees play in pollination and the hard work and dedication of beekeepers in maintaining bee health.

Did you know...?

According to the National Biodiversity Data Centre (2021), more than half of Ireland's bee species have undergone substantial declines in their numbers since 1980. The distribution of 42 species has declined by more than 50%.



When thinking about flowers and plants for your outdoor space, be mindful that although some flowers may look pretty in the garden, they may not produce pollen. You will find details of the best plants to attract bees into your garden in Ireland at

www.biodiversityireland.ie





Make a Bee Hotel

You will need

- A plastic bottle with a diameter of at least 3 inches OR an old plastic, enamel or porcelain mug OR a tin can
- Scissors or secateurs
- Bamboo



Method

1. If using a plastic bottle, depending on the length of your bottle, cut the top off or cut further down, making sure that you leave at least 6 inches for the hotel.
2. Cut the bamboo to the same length as the bottle or depth of the mug/tin can.
3. Pack the bottle/mug/tin can with the bamboo.
4. Tie a string around the middle of the bottle/tin can in a tight knot and create a loop for hanging or use the handle of the mug to hang up outside 1.5–2 metres above ground in a sheltered, sunny spot.

You will know when a bee has moved in and laid their eggs when they cover the opening in, creating a door for themselves.

Top tips

To make sure your bee hotel is suitable for solitary bees, ensure that it has:

- A relatively water-tight structure (roof/plastic pipe section/end of plastic bottle)
- Tunnels of various widths (hollow bamboo or smoothly drilled wood, 10 cm deep)
- Tunnels that are sealed at one end (only one opening)

There are many ways to make a bee hotel and you can find more details about them at the links below

https://media.nationalgeographic.org/assets/file/Bee_Hotel.pdf

<https://www.rte.ie/lifestyle/living/2019/0520/1050567-world-bee-day-how-to-make-a-bee-hotel-in-5-simple-steps/>

BUTTERFLIES



Butterflies play a number of roles in the ecosystem.

The importance of butterfly pollination to plant reproduction may not be equal to that of bees but several plant species, like wildflowers, depend on butterflies to transfer their pollen.

An abundance of butterflies is often an indication that an ecosystem is thriving. This is due to the fact that butterflies are an important component of a food chain, both as predators and as prey. Adult butterflies and caterpillars are an important source of food for other animals such as bats and birds.

Planting butterfly-friendly plants (red, yellow, orange, pink and purple blossoms that are flat-topped or clustered and have short flower tubes), having sunny areas for butterflies to bask in and warm up, and providing a shallow water source such as a bird bath will all help to attract butterflies to your outdoor area.

You can find out more about butterfly-friendly plants at www.ulsterwildlife.org and <https://pollinators.ie/>



Butterfly Banana

Butterflies love a sugary treat, especially during the autumn when food is harder to find. An old banana will provide just that, but do beware that wasps and hornets might also like it too. Be sure to place them away from wherever you might be sitting!

Method

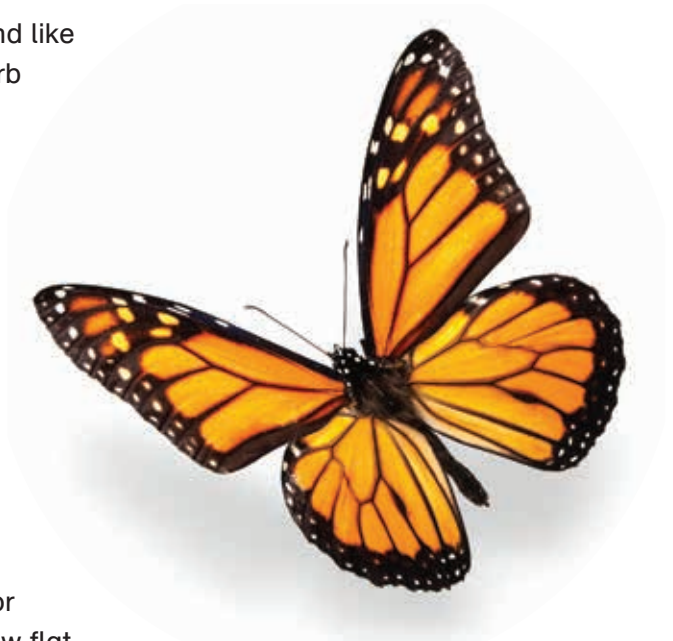
1. Take an old, very ripe banana and, while it's still in the skin, squeeze and mash it between your hands.
2. Pierce the skin of the banana with a knife and place it on a small tray in a quiet sunny spot. Try it with just one banana first to see if you get any takers.

You will need

- Banana
- Knife

Things to think about

- Butterflies are cold-blooded creatures and like to occasionally open their wings to absorb heat by basking in the sun. Opt for the sunniest place in your plot to create a butterfly garden. When butterflies keep warm they can fly longer, meaning they feed more, have more time to search for mates and potentially lay more eggs. All of this may lead to more butterflies.
- They won't want to feed in an area where they are constantly fighting the wind to stay on the plants. So provide some shelter from wind by planting your butterfly-friendly species against a wall or fence. It is also a good idea to place a few flat stones in your sunny location so the butterflies can take a break while warming up.
- Butterflies need water just like we do. Keep a mud puddle damp in a sunny location, or fill a bucket with sand and enough water to make the sand moist.



For more information and a list of native butterflies see the link below for details
www.irishbutterflies.com

PLANTS, TREES AND FLOWERS



Create a Wilderness Area

This activity is so simple, you don't even have to lift a finger! All you have to do is set aside an area of grass and let it grow over the spring and summer. This will allow any flower seeds that are there to grow to their full flowering potential, providing lots of pollen and nectar. If you are worried about tidiness, just add some signage or cut a pathway through to show the intentional nature of your 'wilderness'.

For more details see
www.wildflowersofireland.net



Community Seed Bombing

On page 83, we looked at how you can create a wildflower patch in the outside area of your service using seed bombs. But maybe it's time to think bigger! Engage with the local community to create beautiful wildlife-friendly habitat areas in your area while also helping to feed and support Ireland's pollinating insect species. Remember, always get permission from whoever owns the land first!

Contact your local Tidy Town or Local Development Company and explain that you are working on different environmental projects and would like to enhance your community by developing wildlife-friendly habitat areas. Are there any wasteland or other areas that would be suitable for you to hold a community seed bombing event? Advertise the event and bring the community together. You could even ask local garden centres to contribute or sponsor the event.



Plant a Tree



Our native trees have been part of the Irish landscape for thousands of years. They benefit a huge range of wildlife including birds, insects and small mammals, as well as being hosts to many mosses, lichens and fungi.

There is no better way to boost your service's biodiversity than to plant a tree. Outdoor spaces can be tight in some services so consider what will work best with your available area.

Date for Your Diary

National Tree day in Ireland occurs each year on the first Thursday of October. This would be a great day for planting trees!

To find out which trees are native to Ireland and therefore the best for planting see <https://www.treecouncil.ie/native-irish-trees>

Did you know...?

The trees below are not native to Ireland!

- Beech
- Sycamore
- Horse Chestnut
- Lime

MAMMALS

Depending on where your service is, your outdoor area could be visited by a range of mammal species, including hedgehogs, squirrels, badgers and even deer if you are lucky. Most gardens will be home to small mammals such as the pygmy shrew or wood mouse. Rabbits are also a common sight, especially in rural gardens, while foxes are doing very well in urban areas, and sometimes make their den under a garden shed or decking. The key to attracting mammals is accessibility. If you've already planted insect/bird-friendly plants, you've probably created lots of food for mammals too. You may be lucky enough to spot some mammal species when out for a walk too!



Create a Mammal Tunnel

Footprint tunnels are a great way to discover which small animals are out and about, and it's easy to make your own. A footprint tunnel is a small structure you place outdoors that records the tracks of small animals, using animal-friendly ink and a small amount of bait. By working out which animals the inky footprints belong to, you can get a better idea of the variety of wildlife that visits your outdoor area.

Making your own footprint tunnel is straightforward, and you may have most of the materials you'll need to hand already. Follow the link below for details and an activity plan for the group.

<https://www.biodiversityinschools.com/mammals.html>



Create a Hedgehog Highway

Hedgehogs are an 'indicator species,' meaning a decline in their numbers can tell us a lot about the environmental state of an area. For example, hedgehogs feed on invertebrates like slugs, caterpillars and beetles, so a drop in hedgehog numbers could mean these creatures are not doing well either. This in itself will have serious ramifications for a huge number of other creatures, from birds to bats.

Hedgehogs are also incredible pest controllers and are a vital part of the ecosystem, keeping invertebrate populations in check. They are often referred to as 'the gardener's friend' because they Hoover up all of the bugs and beasties you may want to see less of in your outdoor area.

One of the most important things we can do is to provide holes and access points in our fences and other barriers, so we can link our gardens and outdoor spaces together for hedgehogs and create a 'hedgehog highway'. Despite their small size and podgy stature, hogs roam around 2km each night in search of food, mates, nesting areas and hibernation spots. In our increasingly developed landscape, this means they need to travel from garden to garden, but they can't do this when their route is blocked.

Method

1. Drill (walls), cut (wire fence) or saw (wooden fence) a small hole or gap, about 13cm x 13cm at the bottom of your wall/fence.
2. If your fence is wooden, sand the wood after sawing to ensure there are no sharp edges.

You will need

- Boundary fence or wall
- Saw or drill or wire cutter
- Sandpaper

Before you cut any holes in a fence or knock a hole in wall, make sure that your neighbours are ok with it!!





Create a Bat House

In Ireland, there are nine different varieties of bats. They are active in warm weather when insects are out but hibernate in winter when there is not enough food for them to eat. Bats do a good job of eating insects that we don't like such as midges and mosquitoes. They also help with plant pollination and seed dispersal, which is important to keep the environment balanced.

Did you know...?

Just one Pipistrelle Bat can eat around 3,000 insects in one night.

Installing a bat house in your outside area can provide a safe environment for bats, while keeping pest insects at bay.

It is recommended placing the bat house on a pole at least 30 metres from the building, close to a water source if possible, and around 4 metres in the air. It is not ideal to mount them on trees. They receive less sun among the branches, and obstructions in the form of branches and surrounding vegetation make it more difficult for bats to drop into from flight.

Bat Conservation Ireland have produced a leaflet on how to build and install a bat house with lots of other fascinating fact about bats <https://www.batconservationireland.org/>





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Barnardos

Christchurch Square, Dublin 8

T: 01 4549699

E: training@barnardos.ie or resources@barnardos.ie

W: www.barnardos.ie

CHY 6015 / RCN 20010027

National Childhood Network

Unit 10D, M-TEK 1, Knockaconny, Co. Monaghan

T: 047 72469

E: info@ncn.ie

W: www.ncn.ie



An Roinn Leanaí, Comhionannais,
Míchumais, Lánpháirtíochta agus Óige
Department of Children, Equality,
Disability, Integration and Youth

