



Kíla's Climate Hero Journey

Teacher Guide





About this Resource

This resource is meant to accompany SLI's interactive exhibit, *Kila's Climate Hero Journey*, but the activities in this Guide can be used as standalone activities to work with your students around issues of climate change. If you are interested in having the exhibit installed in your school or Library get in touch at info@slewaterford.ie. We would like to thank Irish Aid for supporting this work.

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Why Teach About Climate Change?

We hear a lot about climate change in the news and on social media so it is important that we ensure that young people are getting an accurate picture of what is happening. Despite the prominence of climate related stories in the media, there are still people who do not believe that climate change is happening, or that it is not happening to them, or just don't care that it is happening. We need to find ways to reach all of those people.

The Irish Government pledged, in the 2023 Climate Action Plan, to increase climate literacy among all people living in Ireland. Primary School is a great place to start. The Climate Action Plan empowers people to take action at a local level on climate change AND to participate in policy and planning at the national level. A study published by the Economic and Social Research Institute (March 2022) found that people who had accurate climate information were more likely to take meaningful action to help combat the impacts of climate change.

This generation of young people are the ones that are going to have to deal with the impacts of climate change. They should have the facts and the power to make decisions.



They should believe that they can take action that will help reverse the impacts of global warming. We want them to be resilient to the climate changes that are already inevitable. We also want young people to understand that those impacts are not distributed equally. People living in the Global South are more likely to suffer from the impacts of climate change despite having contributed the least amount to their causes. It is important that we address the impacts of climate change from a justice

perspective as well. This Guide focuses on solutions, but justice equally demands that we look at the causes of climate change and the unequal distribution of impacts and ask ourselves some really hard questions about how to make things more fair.



Food Waste

Food Waste is a multi-faceted topic that is accessible for young people. It is a global problem that impacts people economically, environmentally, and socially. More than one-quarter of food produced is wasted worldwide each year. It is easy to see this in the home, at school, all around us. There are many reasons we waste food: we buy too much, we make too much, we are drawn in by “special offers” – the list goes on. Every day this may not seem like much, but it all adds up. Individual and household waste is a big contributor to the overall food loss and waste problem. Every year the average Irish household throws away 150kg of food. This adds up to about €700 per household per year. The worst part is that a large amount of this wasted food is still suitable for human consumption.

This makes food waste unethical, so much food is thrown away while many people do not have access to food or can not afford to eat. According to Oxfam International, there are 30 million people facing what they call ‘alarming hunger’ and food insecurity. Globally we produce enough food to feed everybody. It’s food distribution that’s the problem - some places have too much and waste it, and others don’t have enough.

Food waste is also a significant contributor to climate change. It is estimated that 8-10% of greenhouse gas emissions comes from wasted food. When food is wasted, it’s not just the food, it is all the resources used in bringing the food to the table that are wasted too. The growing, processing, and transporting of food uses resources such as land, water, energy, fertiliser etc. Every item of food wasted carries the environmental and economical weight of those wasted resources. Understanding where our food comes from, the effort and resources that goes into producing it and the global impact it has on people and the planet is important for all people to learn.





Activity: Small changes can make a big impact. Once we start thinking about food waste, identifying what we waste and making changes to how we manage our food every day can help cut climate emissions and save money. Find out what food you waste and why.

Step 1: Collect all the food waste from your class in a separate container for at least a week. This might sound messy but it's pretty straightforward. Ensure the container has a tight-fitting lid and place it wherever you have space and close to where you usually throw out your food waste. This would work really well for a class, saving all of the food that students waste during lunch for a week.

Step 2: Keep a record. During the week every time something goes in to the container make a note of what it is, how much there is of it and why it is being thrown out.

Step 3: Look at what was wasted and the reasons why. Weigh the container to see how much was put in the bin each week. When you know why you're throwing things away you can identify simple actions to avoid food waste.

Step 4: Share this information with your students and their families and care givers. Identify what seems to get thrown away the most.

Extension: It could be interesting as part of the Science curriculum to also follow the changes that take place in the compost over time. Add some worms!

Actions:

1. Share this information with your students, and their families and care givers.
2. Identify ways that lunch waste can be reduced.
3. Start a compost bin for your class. Encourage other teachers to do the same.
4. Even better, start a school garden that uses the waste from all the compost bins in the school.

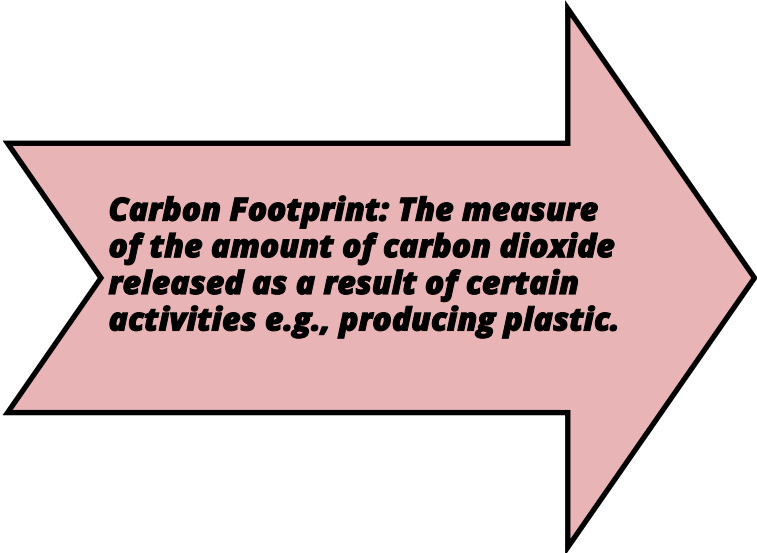


Single-Use Plastics

Single-use plastics have a massive global impact on both the environment and our health. They are designed to be used only once, or for a short period of time, before being thrown away. For this reason, these plastic products are far more likely to end up in our seas and the environment around us than reusable options.

Single-use plastics are a stark example of the problems with a throwaway culture. Instead of investing in quality items that last, we often prioritise convenience over considering the long-term impacts. There are many uses for plastic that are not only reasonable but important such as surgical gloves, but these cases only make up a tiny fraction of single-use plastics. When we talk about single-use plastics we are mostly talking the biggest problems: single-use drinks bottles, packaging, straws, lids, bags, cutlery, and balloons. There are more, but this gives you an idea.

Every year in Ireland we generate 3 billion plastic bottles, this is way more than necessary for the five million people living in Ireland. Plastic is made from fossil fuels and emits a lot of CO₂ when it is being produced so it has a very large carbon footprint. It also takes a really long time to decompose which means every piece of plastic ever made still exists in one form or another.



Carbon Footprint: The measure of the amount of carbon dioxide released as a result of certain activities e.g., producing plastic.





In Ireland we recycle about 31% of our plastic. This is about mid-range globally but even if it were a lot higher it wouldn't fix the problem. We are producing far too much low-grade plastic which ends up being downcycled. We do not even have the capacity to recycle more so the other 70% ends up getting burned.

This has a negative impact on our air quality by producing small, plastic particles that end up in our lungs as well as the lungs of fish and birds.

All animals, on land or in the sea, can be hurt by plastics, they can get trapped or end up eating it. If animals ingest plastic, they are unable to digest it so their stomachs become full, and they can't eat actual food. It is also bad for us. A 2022 study found microplastics in human blood streams. People were already known to ingest the tiny particles through water and food, as well as breathing them in, but finding them in our blood streams goes beyond our lungs and stomachs. The full impact on human health is unknown but scientists have seen the damage plastic particles have on human cells in the laboratory.

What Would Kila Do?

This is a fun way to address these topics with your students: ask them to come up with solutions as if they were Kila the Climate Hero dog.

Activities:

Ask your students to think about all the plastic things they use every day. Get them to think especially about the ones they throw away or will eventually throw away. Ask them to collect these items, clean them and bring them to class to make a display about the harmful effects of plastic in our oceans and our land. Work with them to research facts and figures and include them in the display. e.g. Without change, by 2050 plastic will outweigh fish in the sea. or It takes 450 years for a plastic bottle to break down. To finish, brainstorm alternatives that could be used.

Ask students to do some field research next time they are in a shop. Report back on how much packaging is used. Does everything in a package need to be? What would happen if we got rid of certain types of packaging? What are some alternatives?



Transportation

The transportation sector is one of the biggest contributors to global warming. It also uses a lot of land and water and creates noise and air pollution. Having a sustainable and efficient transportation sector is pretty important to our way of life. We have to be able to get around, to get to school, to work, to buy our shopping, etc. We just need to be able to make better choices about how we do these things in a more environmentally friendly way.

Transport that uses oil and coal to move is a problem because of the emissions it generates. Personal transportation makes up a lot of these. Cars, vans, trucks, and buses produce more than 70% of all transportation greenhouse gas emissions. That's us getting around and getting things brought to us. This means transporting our consumer goods, like food and shopping, over long distances is a big problem. The rest of the emissions come from shipping and air travel. Encouraging things like shopping local as well as using public transport can make a huge difference.

Unfortunately, according to the EPA, greenhouse gas emissions from transportation increased in Ireland by 6.1% in 2021. Ireland has a goal to halve our greenhouse gas emissions by 2030. However, private car use still remains the most frequent mode of travel today accounting for 74% of all journeys nationally. Additionally, 14% of journeys are done by walking, 2% by cycling and 7% by bus and rail. Drastic change needs to happen if we are going to meet this goal.

Ireland's Sustainable Mobility Plan: 2023 – 2030 aims to combat some of these issues. Some of the plans are to improve rail infrastructure and services, reallocating road space to prioritise walking, cycling and public transport and introducing more attractive fare structures.

Using our own energy for transport is both good for health and wellbeing and great for the environment. Walking, cycling, skateboarding, etc. should be the priority for getting around. Using public and communal transport is the next best thing and in positive news, electric vehicles on Irish roads doubled in 2021.

Actions:

1. Discuss with your students how they get to school.
2. Organise a walk or cycle to school day.
3. Make sure your school has what students need to walk or cycle including foot paths and bike racks.



Water

Water and its supply is an important issue in Ireland as well as across the globe. Water is vital to life, and should be conserved and valued as the precious resource it is. Globally one in four people lack safely managed drinking water and two billion people lack adequate sanitation facilities. Only about 3% of the world's water is fresh and only 1% of that is readily available for our use.

In Ireland, many think that we don't need to worry about water or to conserve water, but unfortunately, this is not the case. We have some on-going issues with our water supply because having a lot of water is different than having a lot of safe and available water; half of our surface water sources are polluted. This is a local issue as well as a global one. Not surprisingly, demand for water is centred around our population, i.e., Dublin, the midlands, and the east of the country. In fact, 60% of our supplies are in deficit in normal conditions, this rises to 66% in times of drought. Our rainwater capturing abilities are also quite low. Roads and cities are not designed to capture water, if they were, this would help combat drought in dry periods and in times of flooding and increased rainfall. These extreme weather events are set to increase with climate change. We also have well-known issues regarding leaks within our systems, every day we are losing 38% of our treated water due to old and damaged pipes.

According to a survey conducted on behalf of Uisce Eireann, 52% of Irish people have admitted to wasting water. As the population increases and the economy expands, the demand for water will grow. Our population is projected to expand by 21% over the next 25 years. The demand for water will soon start to exceed water availability. This means thinking about water and how to save it is a priority.

Actions:

Discuss with students the importance of water even here where it rains sometimes all the time. Compare this with other parts of the world who are in a state of constant drought and how this has impacted their lives.

Check out this resource for primary school, *Drought and Migration in Ethiopia*, from GOAL which uses drama to help explain the impacts of drought on societies who have been impacted the most: https://developmenteducation.ie/wp-content/uploads/2020/01/Drought-and-Migration-in-Ethiopia_update-08.19-CVE_V2.pdf.



Hidden Water Footprint

We use a lot more water than we think we do. In addition to the obvious ways we use water, like drinking, cooking, washing (not to mention the bathroom, flushing uses 8 to 13 litres on its own), we also have a hidden water footprint. Our hidden water footprint refers to, for example, the water that goes into growing an apple or in to our consumer goods.

Hidden water is the water that's not seen but is required for almost every step in the production process for the things we use every day, from raw materials to finished product. It is the water that's used to make the clothes we wear to the food we eat to the notebooks we write on and what we write with. Our hidden water footprint is calculated by adding up all the water required for each step of the production process for our everyday things.

Even though our access and supplies of fresh water are limited, it is this fresh water that is also used in the production of our goods. Not surprisingly, this competition between human consumption and consumer goods is not doing great things for the ecosystem. Agriculture and fashion are two industries that are particularly heavy on water use. A small bar of chocolate (100g) takes 1,700 litres of water to produce. A cotton t-shirt takes 2,500 litres of water to make. A pair of jeans takes 10,000 litres of water.

Of course the international community has tried to regulate the amount of water that people, governments and corporations take out of the environment, which is called the Environmental Flow Requirement. This states that we need to leave enough water in the aquatic ecosystems in order for them to continue to function in a healthy manner. It can be hard to track, but reports state that water used in the production of goods regularly violates this directive.

Activity: Use SLI's fun water footprint calculator to get an idea of how much water your students use every day and some more information and useful tips to help conserve water. Visit the game by using the following link: sliwaterford.ie/water-calculator.





Fast Fashion

Clothes are a big part of our student's lives, even if they aren't interested in fashion or shopping, so that makes fast fashion a good topic to introduce a number of factors in the climate discussion. Exploring what we wear and the cost it has on humans and the environment is important.

Fast fashion gets its name from how quickly it takes new styles and trends to get from the runway or an influencer to our shops. The fast fashion industry is responsible for a lot of problems including environmental damage from pollution, child and forced labour, wasted resources including water, bad working conditions and low pay for garment workers and the list goes on. On top of this, the fashion industry also convinces consumers that they need the latest styles which results in people buying more clothes than they need. This is reinforced by social media, influencers, and celebrities. Most of our students (and most of us) are susceptible to this type of pressure.

The fast fashion industry has had a big impact on the environment. According to the United Nations Environment Programme, the fashion industry is responsible for 20% of global wastewater, 1.4 trillion plastic fibres in our oceans, and 10% of carbon emissions. Additionally, 60% of the material that is used in our clothing is made from plastic that shed microfibers every time they are washed. These microfabrics are devastating marine life.

Actions:

One of the most important things we can do, is to de-emphasise the importance of buying new clothes and there are ways we can model this in our classrooms. Have students make an action pyramid using small squares of recycled paper or material and write the actions that we can take to decrease the impact of fashion on the environment. It's always good to start with a student brainstorm, but some prompts can include: buy second-hand, donate old or unwanted clothing, swap clothes with friends, buy less, fix or repair your old clothes...after the brainstorm/discussion, have students choose one of these actions that they will follow through on.

Further Idea:

Lots of school uniforms get thrown away despite being in good condition, have your class organise a school-wide uniform swap at the end of the school year.



Greenwashing

Greenwashing refers to a company's efforts to make themselves look more attractive to consumers who care about the environment. They give the impression that they are more environmentally friendly than they are. They employ marketing techniques to make themselves more appealing to consumers who want to make better environmental choices. These methods include:

- Design Elements (including colour): Often companies wishing to appear more environmentally friendly will use green or earthy tones. They will also decorate the packaging using flowers and plants to make it look less harmful than it is. They can also have eco-friendly version of their product, but not make all their products eco-friendly.
- Word Choice: Ingredients in a product can be being described as 'natural' or 'organic', when only some are 'natural' or 'organic'. They use other words like "green" or "eco-friendly" which are vague and not verifiable. They also promote certain things. For example, a fashion brand might promote clothes that are made of a 'sustainable' fabric, even if the rest of their clothing line is damaging to the environment.

It can be tough to spot greenwashing but by being aware of these signs and tactics you can be a more informed consumer. Another great way is by looking for certificates or logos. These prove companies are really making an effort as they have to stick to certain rules and principles. They are well monitored, and the companies have to meet good standards to qualify for using them. They are also a great way of knowing easily that you are making better choices.



Activity: Give two examples of greenwashing advertisements. Ask students to analyse them. Use the following guiding questions. 1. What is the product being sold in this advert? 2. What is it for, and why do people buy it? 3. What message is the company trying to give consumers in this advertisement? 4. Is the message really true about the product?



Ideas for Action

One Good Idea Campaign from the Sustainable Energy Authority of Ireland which encourages young people to come up with one good idea to help fight the impacts of climate change: <https://www.seai.ie/community-energy/schools/one-good-idea/>

Join a local climate action group such as Waterford's Youth Advisory Climate Council or Friday's For Future.

Make a promise chart. Suitable for even the youngest classes, they think of ideas for changes they can make in their own lives to fight climate change. Small changes can make a big difference — switching to energy saving lightbulbs, walking instead of using the car, turning off the tv when leaving the room, and reducing food waste.

Go plastic free—ban single-use plastics in school. Prove you can function perfectly well without plastics. A project making a fact sheet to send home to parents including some swaps for school lunches can make this easier. Fundraise to buy/repair water fountains or ask everybody to use taps to fill their reusable water bottles.

Create a school garden. Students can see first hand the effects of climate change on growing plants and learn about the sustainable growth of food. Including pollinator friendly flowers and plants can increase biodiversity and help protect essential species such as bees who play an essential role in our ecosystems. When people grow their own food they value it more so this can also teach about how precious food is and the resources it takes.

Build a composter. It's a great way to convert food and garden waste into nutrient rich compost and reduces the waste in your school. You can make a compost heap no matter the size of your space, all it needs is oxygen, green and brown material and moisture. See more on composting using our video series No Garden? No Problem! Link here: <https://youtu.be/cR90fMpZu-Y>

Waterford's Comhairle na nÓg members developed the CommuniTree App as something that young people would have easy access to and made a real difference to the city and county of Waterford. In the app young people can complete Green challenges and a real life tree will be planted when completed. It's available to download on Google Play and the App Store.



Resources

ESRI, Public Understanding of Climate Change and Support for Mitigation. Available at: <https://www.esri.ie/system/files/publications/RS135.pdf>

Department of Environment, Climate and Communications, Climate Action Plan 2023. Available at: <https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/>

Department of Transportation, Ireland's Sustainability Mobility Policy. Available at: file:///C:/Users/jen/Downloads/220939_15aab892-f189-4ab6-8448-0c886176faac.pdf

Developmenteducation.ie, 10 Myths About Climate Change. Available at: <https://developmenteducation.ie/wp-content/uploads/2021/02/10-Myths-About-Climate-Change.pdf>

Environmental Protection Agency: Transport. Available at: <https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/transport/>

Plan International, Development Education Handbook for Teachers. Available at: https://www.plan.ie/wp-content/uploads/2022/01/PI_Teachers-Handbook-2020.pdf

Self Help Africa, Climate Change and Climate Justice. Available at: <https://developmenteducation.ie/wp-content/uploads/2022/04/SHA-Climate-Change-and-Climate-Justice.pdf>

Trocaire, Teaching About Climate Change in Irish Primary Schools. Available at: https://www.trocaire.org/sites/default/files/resources/edu/teaching_about_climate_change.pdf

United Nations Environmental Programme, Fashion's Tiny Little Secret. Available at: <https://www.unep.org/news-and-stories/story/fashions-tiny-hidden-secret>

You can also check out the resources available on the SLÍ website for more ideas (<https://sliwaterford.ie/resources>) or if you are having trouble locating something, give us a shout and we will do what we can to help, info@sliwaterford.ie.

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