

EDUCATION FOR SUSTAINABLE DEVELOPMENT

TEACHER GUIDE



Building Climate Leadership for Primary Students





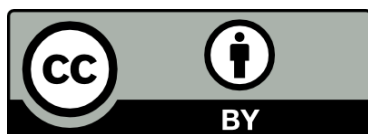
Waterford SLÍ, CLG. is a registered limited company with charitable status. Our vision is of a global community working together to ensure an equitable and sustainable future for all and our mission is to educate and empower the people of Ireland to act on issues of sustainability, responsible consumption and climate change.

The activities in this resource were piloted with 10 primary schools in the Waterford and Kilkenny areas during 2024-2025. We would like to thank all participating schools.

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About the Resource

Education for Sustainable Development: Building Climate Leadership for Primary Students was developed as part of a project carried out by Waterford SLÍ and funded by the Department of Education's *ESD to 2030* funding scheme. This resource is designed for primary school teachers who wish to work with their students and the ESD curriculum. Links to all resources and background information are available as end notes at the close of the resource.

We have included a lesson plan which is written for upper primary but can be adapted for lower primary. We have also included background information on topics that are both of interest to students and contribute to the aims of the primary curriculum, as well as work well with the workshop template.

Part A of the workshop covers ESD and can be done as a stand-alone lesson. If you wish to go further and work with your students on a particular topic, Part B provides activities specific to 5 topics that work well with ESD: fast fashion, food supply chains, plastics, food waste and water. If you do plan on covering one of the topics from Part B, we do recommend that you start with Part A.



Introduction to ESD

What is Education for Sustainable Development

Ireland's Education for Sustainable Development (ESD) is a framework that is based on Ireland's Sustainable Development policy. An important aspect of this framework is that it is not education *about* sustainable development, it is education *for* sustainable development.

(Government of Ireland, 2022)

We hear the word sustainable quite a lot these days and not just in relation to ESD. It has become a buzzword and that makes it all the more important that young people know what sustainable or sustainability means. Sustainability itself is not a new term or a new concept. Generally we look to the 1987 United Nations Brundtland Report to define sustainability which reads: *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.* *(United Nations, 1987)* We have modified this definition slightly in our activity for students to make it more child-friendly but believe it retains the core principles.

ESD rests on 3 pillars: Social, Economic and Environmental. We have chosen the 5 topics mentioned above to provide some focus but as you can see from infographic there are a lot more topics that you could cover with your students.

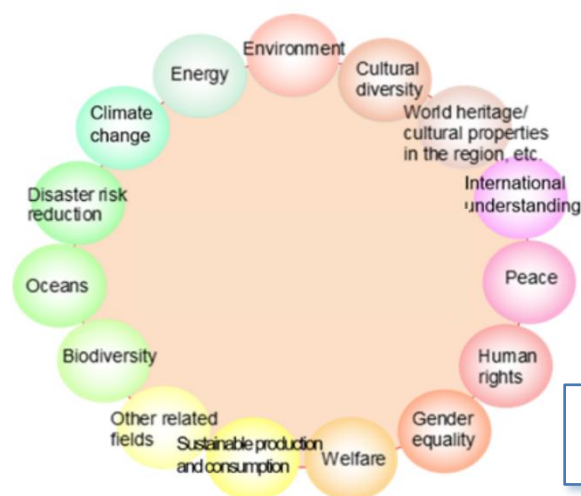
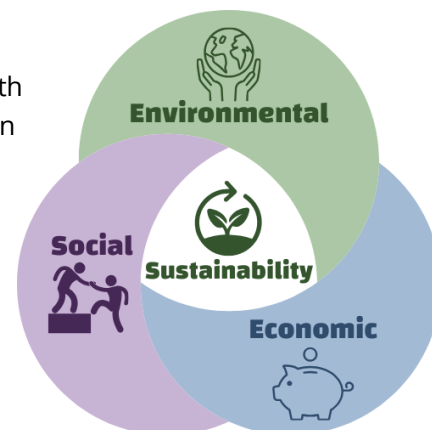


Image Credit: UNESCO
<https://www.mext.go.jp/en/unesco/tile04/detail04/sdetail04/1375695.htm>

It is important that we understand how these three pillars interact with and support one another. It is hard to address systemic poverty when there isn't decent and fair work available to people. It's hard to address food security in a world with diminishing farmlands due to climate change. So basically, for us to make any progress on any of the big issues, it needs to be with a holistic approach that recognises how complex and multi-faceted the challenges that we face are. Ireland's, and the world's, ESD strategies recognise this.



The link between the Sustainable Development Goals and ESD is strong and the principles of ESD also work to support Ireland's work toward the achievement of Sustainable Development Goals, specifically Goal 4 on Quality Education, and more specifically indicator 4.7 which states:



by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

The Department of Education and Skills, along with UNESCO (which is the United Nations Education and Scientific Organisation), and the Irish commitment to the Sustainable Development Goals have made policies that require us as educators to include ESD in our teaching. But the deeper and more important reason is that we need this education to provide a safe, clean and sustainable future for people living in Ireland as well as for people around the world.



Dealing With Sensitive Or Difficult Issues In The Classroom

At times, when doing ESD, you will encounter topics that are difficult to discuss with your students either because it impacts them on a very personal level or because it may cause anxiety or distress. This doesn't mean we should shy away from these topics. It just means that we need to think about how to approach this teaching and learning scenario in a way that works for all involved.

Some rules of thumb:

- » Be honest and straightforward about the fact that the subject matter might be difficult for some students and that this is ok. Explain why you are covering it and why it is important for them to learn about.
- » Understand the classroom and their community outside of school to provide context for your students' lives.
- » Discussion works well in an ESD classroom but make sure to have a clear direction in mind and activities to follow up so that things don't go too far afield.
- » Couch the conversation within a general narrative rather than expecting any particular student to represent an entire country or group of people.
- » Think about your own stance and decide about how much of this you wish to share with your students. Chances are they will ask.
- » Always provide time and space to reflect on what you have covered and give students the time and space to debrief.



Climate Anxiety

Climate anxiety is showing up more in research done with young people about their fears and concerns. A survey conducted by RTE with over 10,000 young people in Ireland found that 60% of young people aged 16 to 25 are very or extremely worried about climate change with 75% reporting that they think the future is frightening. Over half report that they think humanity is doomed. (*RTE News, 2022*)

This is very sobering. While it is important that we recognize the realities of climate change and the work that needs to be done to bring us back from the brink, it is also incredibly important that young people understand that we can still build a more just and sustainable future.

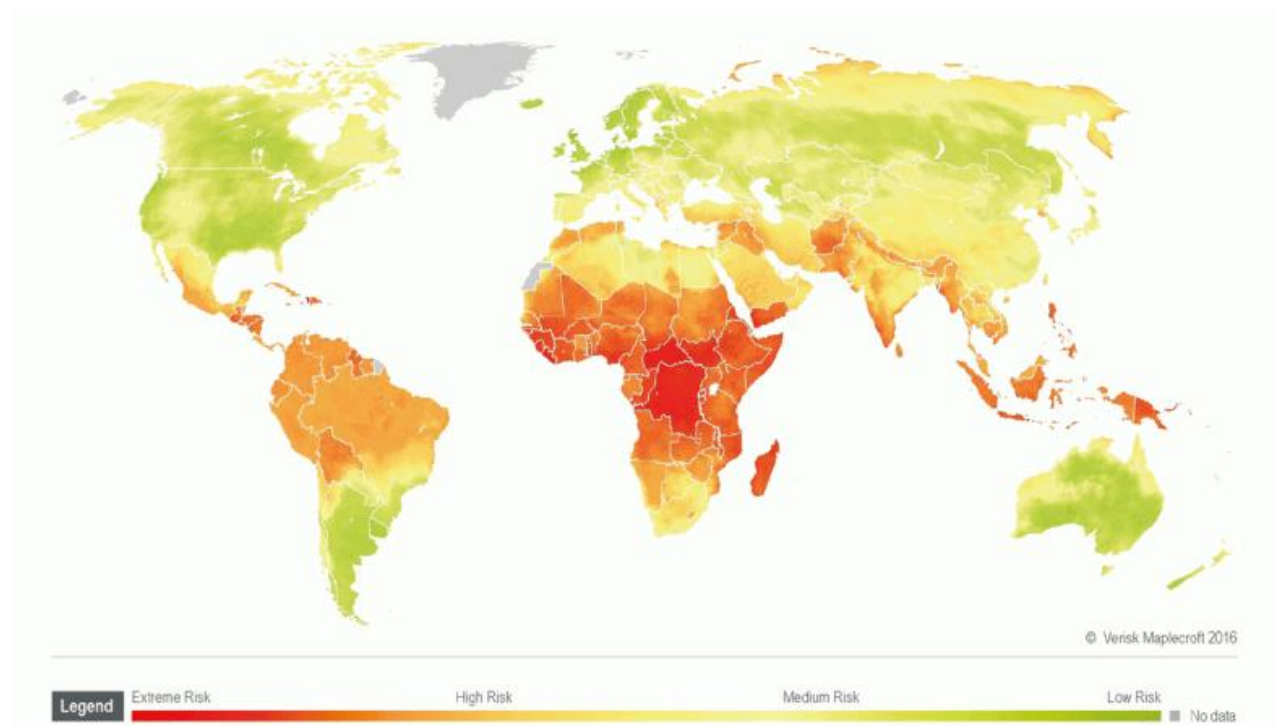
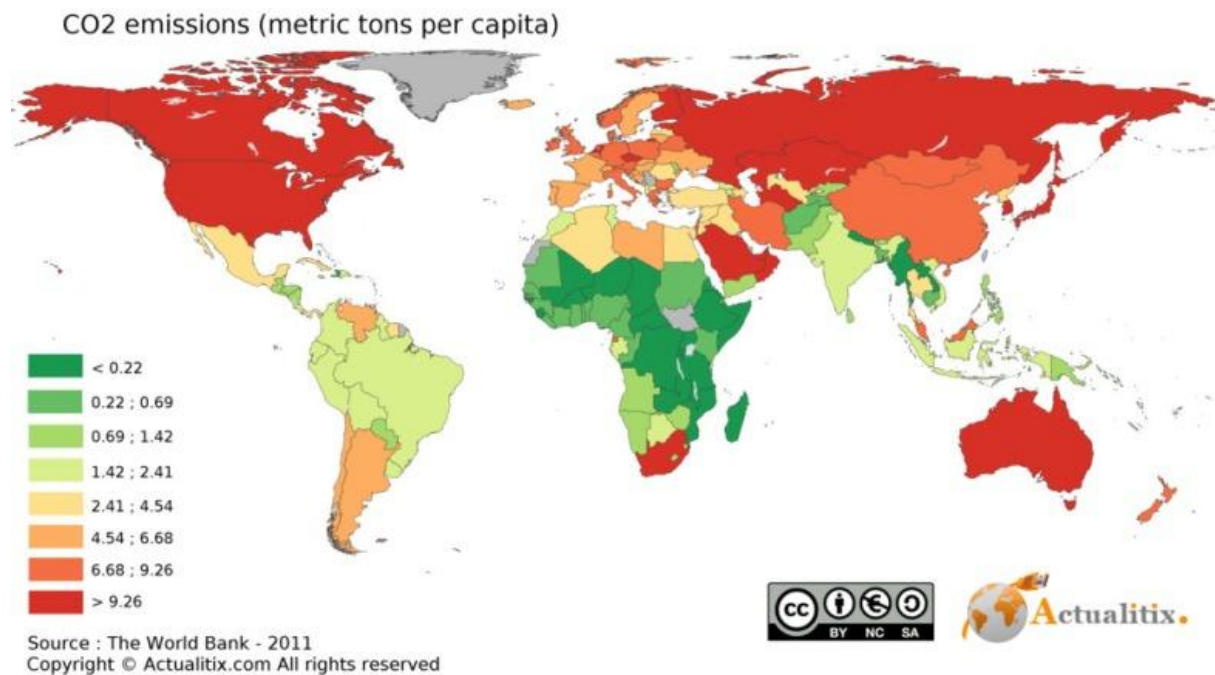


Climate Change & Climate Justice

Often climate change and climate justice are seen as the same thing. People assume that if you are acting in a way that protects the environment that you are working for climate justice. Climate change refers to the changing nature of our environment. Sometimes it gets warmer, sometimes colder – it just so happens we are currently in a period of global warming that has been intensified due to human activity. Climate justice refers to the fact that the impacts of climate change are being felt differently around the world. The countries that have contributed

the most to climate change and its impacts, are the ones that are suffering the least from climate change while the ones that have contributed the least, are suffering the most.

This first map represents who is most responsible for climate change, those countries with the highest emissions are in red and those with the lowest emissions, are in the greens. In almost direct relief is the second map, those most at risk from climate change are shown in reds and oranges, while those least impacted are shown in green.



Source: *Earthbound Report*, 2018.
<https://earthbound.report/2018/06/28/two-maps-climate-responsibility-and-climate-vulnerability/>



ESD and The Primary Curriculum

The 2023 *Primary Curriculum Framework* presents the primary curriculum in 5 defined areas: Language, STEM, Well-Being, Arts Education, and Social and Environmental Education. (NCCA, 2023) Although we believe that ESD is thematic across all curriculum areas, the opportunities within Social and Environmental Education are the strongest. There is significant overlap between the SEE Curriculum and ESD. The People, Place and Space and the Environment and Sustainable Living strands explore ESD themes such as : Global Citizenship, Human Rights, Equity, Migration, Multiple Perspectives, Global Interdependence, Climate Justice, Sustainable Living and the Root Causes of social, political and economic factors impacting our world today.



ESD Lesson Plan

PART A: Introduction to Sustainability

Time: 30 minutes

Materials: Flip Chart Paper/White Board

Flip Chart Markers or White Board Markers

Word Puzzle Pieces (these are included at the end of the activity and should be photocopied and cut into pieces, 1 for each group)

Copy of the SDGs

Students should be in small groups of 4 or 5.

Icebreaker: What do we know about Climate Change?

Flip Chart/White Board: Ask students to come up and write something they know about climate change (one or two words) and they can't repeat. We want to activate students' knowledge and demonstrate that they already know a fair amount about climate change.

Activity: What is Sustainability? Word Puzzle

1. Give each group a copy of the word puzzle cut up and ask them to put in the right order. Working in this way allows the students to engage more deeply with the definition than if it is said or shown to them. Feel free to alter the definition to one that better suits your particular topics or needs.

Definition (larger version to cut up included at end of this lesson): Sustainability means protecting the earth, animals and planets by not using more than we need and saving enough for people in the future.

2. Still working in groups, have students write down 5 things that they already do to be sustainable (use a reuseable water bottle, walk to school, turn off lights, shut off water when brushing teeth etc.).

Teacher Note: It is important to make the point that being sustainable is easy and we already do a lot of things that count as sustainable, so it is not about making huge changes but making smaller, doable changes and sticking to them.

3. The Sustainable Development Goals (SDGs). To start this part of the activity, provide the class with some background information on the SDGs. Hand each group a copy of the SDGs and ask students to match their actions to the SDGs. Take feedback from groups. There is a copy of the SDGs included at the end of this lesson.

Background to the SDGs: The SDGs were passed in 2015 by the United Nations (UN). All the countries that were part of the UN in 2015 voted to pass them. This was a big job, and Ireland played a critical role in getting them passed along with Kenya. The SDGs are about a lot more than environmental issues and cover things like human rights, poverty and hunger, mental and physical health, education and policy making to name a few. Ireland is committed to working toward achieving the SDGs by 2030. They are not lofty goals for government or other policymakers, the Goals are for all of us to try to achieve. For more information, check out Irish Aid's website: <https://www.ireland.ie/en/irish-aid/what-we-do/sustainable-development-goals/>

Word Puzzle Definition:

Copy and cut a full definition for each one of the students' groups. Mix them up a bit and have students try to put the definition fragments into the correct order. You can give them hints about capitalisation and punctuation.

Sustainability means
protecting the earth,
animals and planets
by not using
more than we need and
saving enough for
people in the future.

SUSTAINABLE DEVELOPMENT GOALS



Part B: Topic Specific Activities

We have included background information and an activity for 5 separate topics designed to follow on from the lesson plan in Part A.

The topics covered include:

- Food Supply Chains
- Waste
- Fast Fashion
- Water
- Plastic

There is a lot more that you can do with ESD. The following is a short-list of websites that provides resources for teachers on a wide range of ESD and Global Citizenship Education topics.

- » Developmenteducation.ie: Searchable database Irish-produced Global Citizenship Education and Development Education resources. <http://developmenteducation.ie>
- » Rediscovery Centre: Sustainable Schools: Digital Toolkit for Teachers available at: <https://www.rediscoverycentre.ie/learn/sustainable-schools-digital-toolkit-for-teachers/>
- » ScotDec (based in the UK): Explore the Global Goals – 17 activities for Primary Schools available at: <https://scotdec.org.uk/resources/explore-the-global-goals-17-activities-for-primary-schools/>

Food Supply Chains

Links to SDGs:



This activity looks at where food comes from and compares the impact of locally produced strawberries to the multi-country produced chocolate. When we talk about supply chains, we are talking about all the steps it takes for our food to go from farm to table or from producers to consumers. This demonstrates that not only do we live in an interconnected world but that our food comes with food miles which have an environmental impact.

Activity: The Life of a Strawberry

This activity compares the life cycle of an Irish produced strawberry and a Ghanaian/UK produced chocolate bar.

Students should come away from the activity with the following learning:

- Local products have less of an environmental impact than ones that come from far away
- Packaging is a major problem with processed foods
- An understanding of the labour and environmental impacts of our food chains

Materials:

- Life of a Strawberry Cards
- Life of a Chocolate Bar Cards
- Game Pieces Cards

This activity takes place in groups and each group will need a set of each of the above cards. It is recommended to copy and cut out although the sheets could be printed as they are and students could place a number next to the pictures to represent the supply chain order.

Directions:

- In small groups, have students place cards in the order of their life span.
- Once they have done that, provide them with a copy of the game pieces and have them put the pieces where they belong in the supply chain (they might not use all of them).
- Round 1 game pieces represent: good for the environment and bad for the environment. If you would like to take this further with your students, there are game pieces for where humans interact with the supply chain to help students recognise that our food sources are global and interconnected. These game pieces include: farmer, transport worker and consumer.

Discussion Questions:

- Why is the disposal of the strawberry better than the disposal of the chocolate?
- Which of the items has a bigger impact on the environment? Why?
- Can you think of better ways to produce chocolate that would have less of an impact on the environment?

Life of a Strawberry



Note: Strawberries being picked from the fields. Image by serhii_bobyk on Freepik



Note: Strawberries packed in compostable boxes. Image by freepik



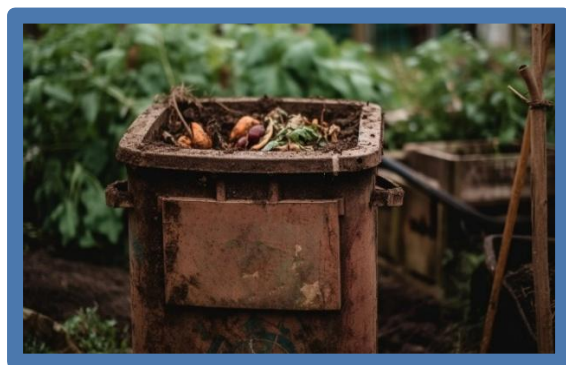
Note: Strawberries (and other produce) being delivered to market. Image by freep



Note: Strawberries being sold at streetside vendor. Copyright John Ironside



Note: Strawberries and friends being enjoyed at home.



Note: Strawberry waste in compost bins. Image by vecstock on Freepik



Note: Compost is used to grow other foods such as apples.

Life of a Chocolate Bar



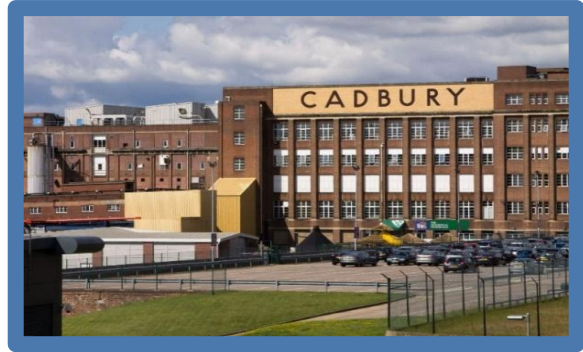
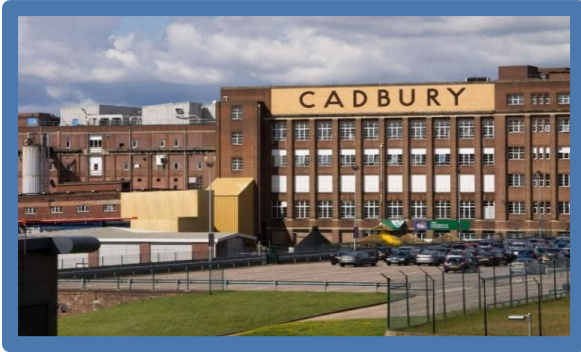
Note: Cocoa being grown in Ghana



Note: Cocoa being processed by Ghanaian factory. Image by wirestock on Freepik



Note: Processed cocoa being transported from Ghana to the UK



Note: Cocoa being made in to chocolate bars in the UK <https://www.thesun.ie/fabulous/13696540/cadbury-chocolate-taster-job/>



Note: Chocolate bars being transported from factories to stores. <https://www.businesspost.ie/news/dublin-port-expansion-plan-will-increase-truck-traffic-on-m50-by-75-per-cent/>



Note: Chocolate on the shelves in shops. <https://www.thesun.ie/money/3165652/cadburys-christmas-selection-boxes-dunnes-stores/>



Note: Chocolate being enjoyed at home. <https://www.youtube.com/watch?v=x25-aD8Njfk>



Note: Waste from chocolate bars and friends <https://wastemanagementreview.com.au/60m-national-funding-boost-for->



Note: The final home for chocolate packaging

Game Pieces

Teacher Note: This is an optional extension for the supply chain ordering activity (Life of Strawberry and Life of Chocolate). Once students have completed their supply chains, have them place the game pieces at key points where what is happening is bad for the environment or good for the environment. And going even further, students can place farmer, driver and consumer cards where these people interact with the supply chain.

Bad for environment:



Good for environment



Farmer



Driver

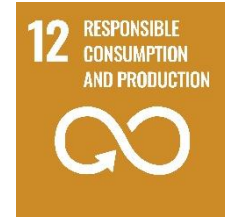


Consumer



Food Waste & Food Security

Links to SDGs:



Food waste and food security are inextricably linked. Food waste is easy to understand and it is something that most of us in the west are guilty of at some level. Buying more than we need, not using our leftovers, leaving food on our plate at restaurants, etc. It is estimated that the average person in Ireland wastes over €700 worth of food each year, that may not sound like too much but that amounts to 3.5 billion euro each year, according to Ireland's Minister for Agriculture, Food and the Marine, Charlie McConalogue (2024).

It ends up being a lot of fruit and veg, which compounds the problem. Because it is not the fruit and veg we grow here, it's not potatoes and carrots. It's lettuce and limes and things like that which are foods that we generally import. Imported food comes with an already significant carbon footprint in terms of food miles (which just refers to the distance that food travels to get to our plates). When we throw this food away, it decomposes and releases greenhouse gasses, most commonly methane and carbon dioxide.

At the same time, over 783 million people around the world are facing chronic hunger. Hunger like that doesn't need to happen. As a planet we make enough food to feed everyone. (*The Guardian*, 2022) Actually we can probably comfortably feed about another billion people. So it's not food production that is the problem, it is food distribution. Some places have too much and waste it, and other places don't have enough and go hungry.

Food security talks about a society's ability to feed its people. In Ireland we are pretty food secure because we are a wealthy country and can afford to import food and ingredients. We also make money from our agri-food exports, so barring a natural disaster or major conflict that cuts off imports and exports, we should be fine. This is not to say that there aren't people experiencing hunger in Ireland. Hunger remains an issue in Ireland but there are no structural reasons for this to remain the case. A change in policy could fix this issue.

In other places where it has become too hot to maintain herds and grow food, or places that are land locked and have a hard time importing what they can't grow, the story is very different. Parts of Nigeria, South Sudan, Yemen, Somalia and Gaza, are facing severe famine and food insecurity. This is over 30 million people facing acute food shortages in 2025. (*Oxfam*, 2025)

Activity: Taking Stock of our Food Waste

This activity is designed to demonstrate how much food we waste and to craft some solutions that can be implemented at the individual student level. This is probably easiest to do in your classroom where most of the eating in schools takes place, but students can also be tasked with monitoring how much food gets wasted at home or in the school canteen (or both). Stop Food Waste Ireland (<https://stopfoodwaste.ie/>) has additional background information and eye-catching posters that can help out with this work.



Students should come away from this activity with the following learning:

- Where and how food waste occurs in schools and homes
- The environmental impact of food waste
- Easy actions to help reduce food waste

Materials:

- Food Waste Audit Sheet
- Pen/Pencil

Directions:

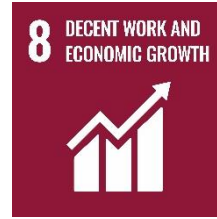
- Put the food waste audit sheet near your bin.
- Note down every piece of food, under the right heading, that goes in the bin over a week.
- Note down where those pieces of food come from geographically. This could require some research as to where we get some of our more common foods (eg. bread comes from Ireland, a banana comes from the Dominican Republic)
- Add up the totals to see how much was wasted.
- Devise some strategies that we can take as individuals (or as a class) to decrease the amount of food that gets wasted.

Food Waste Audit				
	Fresh Food (Fruit & Veg)	Animal Products (Meat & Cheese)	Snack & Dessert (Processed)	Staples (eg. Bread)
Day 1				
Day 2				
Day 3				
Day 4				
Day 5				
Totals*				
Where Does Our Waste Come From?				
	Ireland	Europe	Rest of World	
Day 1				
Day 2				
Day 3				
Day 4				
Day 5				

*The audits themselves should take place as students are discarding their waste (rather than going through bins).

Fast Fashion

Links to SDGs:



Fast fashion is defined by the short amount of time it takes for an item of clothing to appear on the runways to when it shows up in the high street shops, generally within a few weeks. This allows consumers access to trendy clothing at affordable prices which sounds good until we look at its impact. For this to qualify as 'fast', the clothing is mass produced and of generally low quality. And since there is always a new trend, this process is repeated every few weeks. This results in people buying a lot of inferior quality clothing and lots of it gets disposed of either in general waste or through the charity shops.

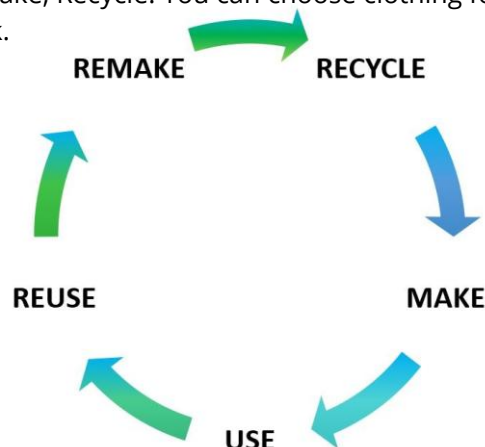
There are several problems that arise from this system including:

- ▶ Workers' rights and well-being are not a priority of the fast fashion industry and there are multiple reports of long hours, low pay, dangerous working conditions and even child labour.
- ▶ The environmental impact of clothing production occurs through excessive use of water, chemicals, energy and the carbon footprint of shipping all of this clothing from where it is made (primarily China and South East Asia) to its destinations around the world. Additionally, putting textiles into landfill creates greenhouse gases as they decompose.
- ▶ As more people become aware of the problems in the fashion industry, the industry itself has responded both with some good initiatives but most often with what we call Greenwashing. Greenwashing is where a company claims that their products are 'eco-friendly' when in reality, all they have done is add the word sustainable to their marketing.

Students should come away from this activity with the following learning:

- ▶ The environmental and human rights impacts of the fashion industry
- ▶ What the Circular Economy is and why this is important for a sustainable future
- ▶ We must embrace the Reduce and Reuse part of the 3 R's more than the Recycling, especially when it comes to fashion

The following graphic can be used to explain how the Circular Economy works. As an introduction to the Circular Economy, ask students to identify what would be taking place at each stage: Make, Use, Reuse, Remake, Recycle. You can choose clothing for this activity, but any consumer project would work.



Source: UNICEF Ireland,
<https://www.unicef.ie/our-work/schools/global-issues/sustainable-living/#activitv4>

Activity: Social Media or Poster Campaign - The Life of a Christmas Jumper

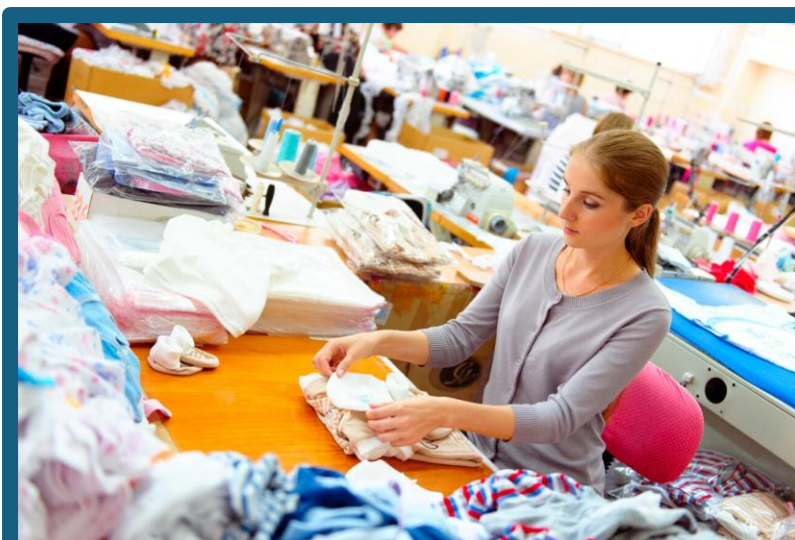
The purpose of this activity is to demonstrate that there are several steps that need to happen before we get our clothing. It is also meant to show that the making and disposal of clothing is not great for the environment. In fact, the fashion industry is the second largest contributor to global pollution (*MyWaste, 2025*).

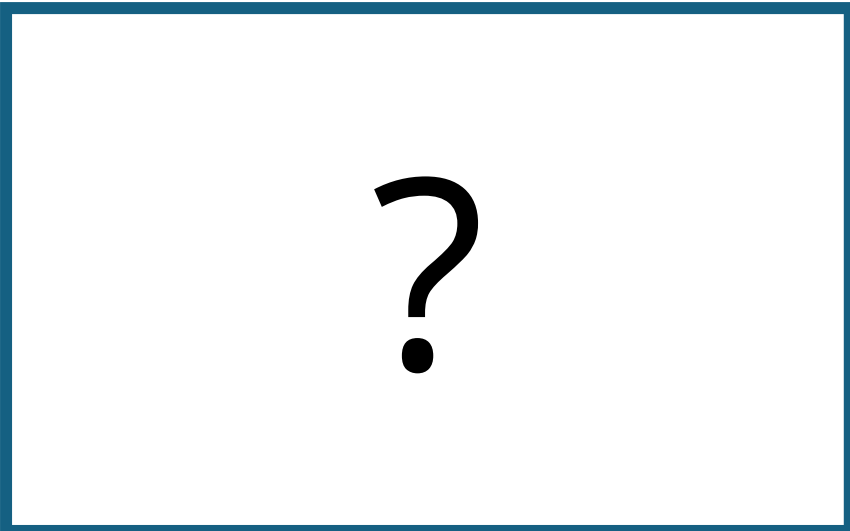
Directions:

- » Working in groups, hand out a set of 'Life of A Christmas Jumper' cards to each group (you can also sub in a different type of jumper if you prefer one that is better suited to time of year or is not religious in nature). Cards included at the end of this activity.
- » Have students put the life of the jumper in order and then, keeping the Circular Economy in mind, have them identify 5 responses that satisfy the question mark: What to do with our clothes when we are done with them?
- » Take the answers grouping them in the following categories: Reduce, Reuse, Recycle. Most of the answers will come in the Reuse and Recycle categories but not buying Christmas jumpers in the first place is a legitimate response for this activity.
- » Each group should be assigned either Reduce, Reuse or Recycle and choose an action to promote as part of their social media or poster campaign.

Teacher Note: For the Social Media Campaign, simply take pictures of the posters and post them either as a group or individually but labelled as part of the Campaign. If the Campaign is going on social media, pick one group to do a poster(s) on what Fast Fashion is and why it is bad.

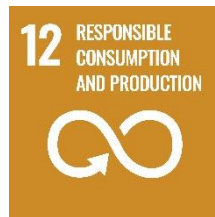
Life of a Chirstmas Jumper



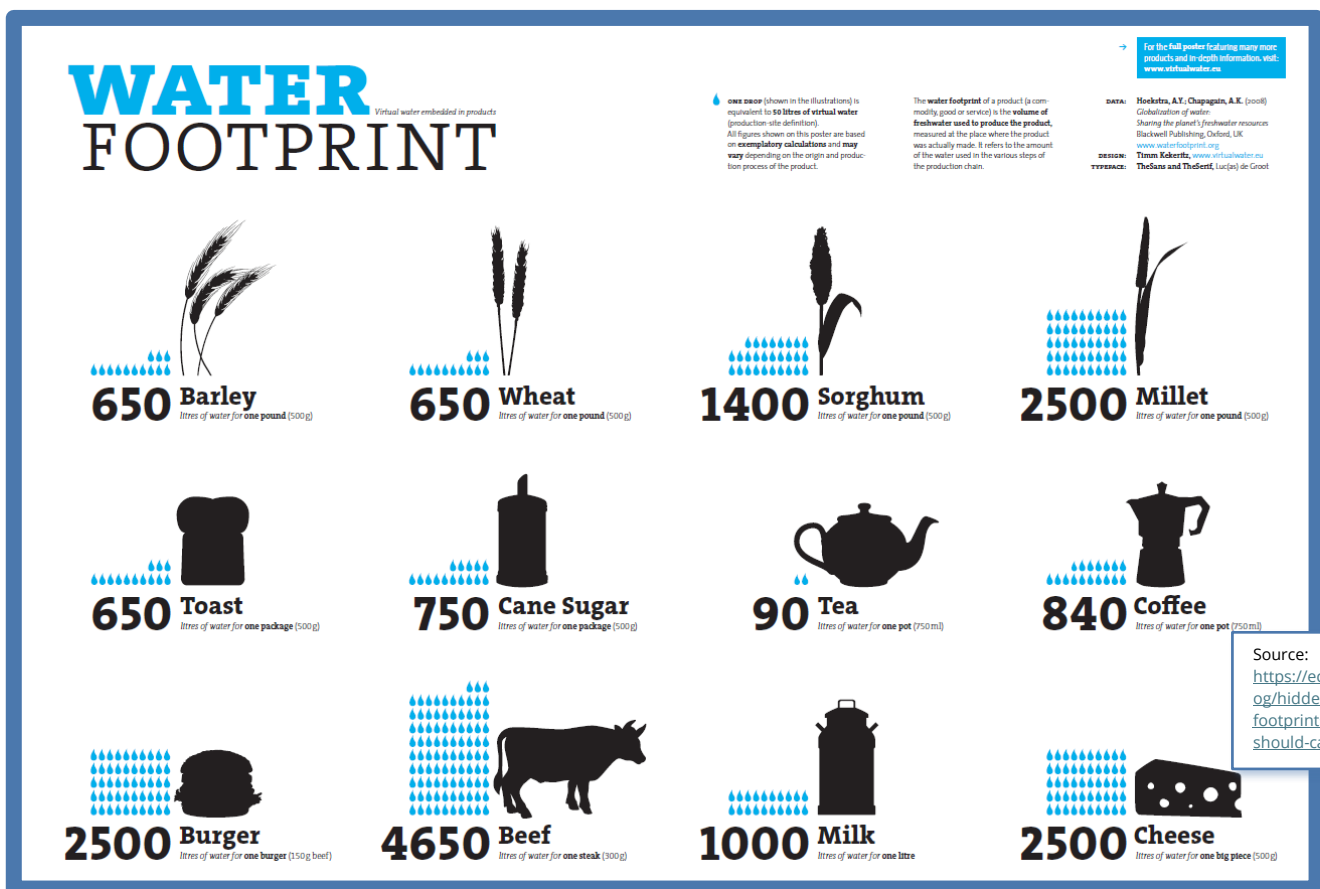


Hidden Water Footprint

Links to SDGs:



Our hidden water footprint refers the amount of water it takes to support the production and distribution of our consumer goods. In Ireland, we do not have a shortage of drinking water, but in order to really understand how much water we use, we need to understand HOW we use water. Every consumer product, whether it is food or electronics, comes with its own hidden water footprint. The graph below shows the hidden water footprint of some common items:



The hidden water footprint refers to how much water is required from the start to the finish of a product including production and transportation.

Students should come away from this activity with the following learning:

- Water is a precious resource even in places like Ireland where we seem to have plenty
- Our consumer goods and the choices we make about them, have far-reaching global impacts
- Choosing to buy local not only helps the local economy, but helps the environment as well.

Activity: Water Footprint Calculator

- For this activity, students will need access to computers or their phones and visit Waterford SLI's Water Footprint Calculator available at: <https://sliwaterford.ie/water-calculator>.
- Have students take the 10-question quiz but to keep their scores private. Each question identifies an action that they can to better their water footprint.
- Have students identify one action and make a commitment to follow this through.

Discussion Questions:

- What types of consumer goods do you think take the most amount of water to make?

Teacher Note: the infographic above is specific to food, but our material goods also have a large water footprint, e.g. a plain cotton t-shirt takes 2720 litres of water to make, a pair of jeans takes between 10,000 and 20,000 litres of water to make (depending on how faded they are), and a car takes between 52,000 and 83,000 (from watercalculator.org)

- Are there any actions that we can take to try to decrease the impact of our hidden water footprint?

Teacher Note: Since a lot of times, these are consumer goods that people actually need, the conversation should be around ways to, for example, make our clothes last longer or only buy clothes that we really need, or only buy a new car when the old one doesn't work anymore,

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WATER FOOTPRINT CALCULATOR

Discover if our blue planet considers you naughty or nice

Answer x simple questions to reveal your water footprint

BEGIN ➤➤

Plastic Waste

Links to the SDGs:



Although there are problems with all plastics because of the environmental impact of their production, there are also a lot of good things that come from plastics (think hospitals). For our purposes here, we are referring to single-use plastics such as plastic drinks bottles, plastic cutlery, straws, etc. The list of single-use plastic is extensive and hard to avoid. The amount of plastic generated from packaging alone (e.g., on-line deliveries, supermarket products) is enormous and the EPA reports that we are unlikely to meet our recycling targets for 2025 or 2030.

This activity uses a table quiz to deliver information about single-use plastics. After each question there is an explanation to accompany the answers. Our recommendation is to ask all the questions and then go back and give the right answers along with the explanations.

Students should come away from the activity with the following learning:

- Single-use plastic is all around us and used more than it needs to be.
- We have to decrease the amount of plastic that we use, recycling efforts are not enough (although we should also still recycle).
- When you get the chance to avoid plastic (for example in a shop), you should do so.

Activity: Plastic Table Quiz

Materials:

- Scrap paper
- Pen/pencil

Directions:

- Put students in groups of 5 or 6.
- Explain to students how a table quiz works and that you will ask each multiple-choice question and they are to write down the letter corresponding to the right answer.
- If you would like to offer a prize/homework pass for the winning team, we find that it is always popular.

Questions:

1. How much of the world's plastic still exists?
 - a. 25%
 - b. 50%
 - c. 75%
 - d. **100%**

Explanation: The correct answer is 100%. We started using plastic at the start of the 20th century, or around the same time as World War 1, about 1915. Scientists estimate, depending on the type of plastic, that it will take at least 450 years for plastic to decompose. This means that all the plastic ever made still exists in some form or another. Some of it has been recycled, some of it has been burned, some of it has been buried and some of it is floating around in the Oceans. Even when we burn it, it doesn't go away, it just breaks down in to smaller and smaller pieces and is part of the air we breathe.

2. What is Ireland's plastic recycling rate?
 - a. 12%
 - b. **32%**
 - c. 52%
 - d. 72%

Explanation: The correct answer is 32% (epa.ie). Part of the reason why this number is so low is because we don't have enough facilities to recycle all of the plastic that we use in Ireland. A lot of this plastic waste, which is single-use, comes from consumer waste and a lot of it comes from packaging for the consumer goods that Ireland imports. We aren't doing a good job disposing of either of those. (Source: EPA 2024)

3. What is the global plastic recycling rate?
 - a. **9%**
 - b. 29%
 - c. 49%
 - d. 89%

Explanation: The correct answer is 9% (*Plastics For Change, 2025*). The best plastic recyclers in 2024 were South Korea, Austria and Germany with rates of between 70 and 80% (*Plastic Expert, 2024*). But the 9% figure is scary because it means that there are a lot of countries that aren't doing any plastic recycling, and it continues to pile up both on land and in our oceans. Another important point is that these countries with high plastic recycling rates, are also ones that generate large amounts of plastic waste.

4. Most plastic is made from
 - a. Sugar
 - b. Salt
 - c. **Oil**
 - d. Water

Explanation: The correct answer is Oil. There are other things in there, like water, but basically, we can't have plastic without oil. The same stuff we make our petrol out of and that we already know causes greenhouse gases.

5 True or False: There is a plastic garbage patch floating in the Pacific Ocean that is three times the size of France.

- a. **True**
- b. False

Explanation: The answer is true. It is far out in the middle of the Pacific Ocean and very few people are able to travel out that far by boat. It is also too far away from any land so no country claims that space as their own, which is nice, but it also means that no one takes responsibility for cleaning it up. The patch itself is not something that is hard, like an island that you can walk on, it is more like a bunch of small pieces floating together. It is quite big both in its depth and breadth and it is estimated that it would take years to clean. Scientists also suspect that most of it ends up floating down to the bottom of the ocean in that spot and no one has been able to investigate the ground underneath the Patch.



Source: The New York Times,
<https://www.nytimes.com/2022/05/06/science/great-pacific-garbage-patch-pollution.html>

Discussion Questions:

- » What was the most surprising thing that you have learned about plastic waste?
- » Should we get rid of all plastic, no plastic or some plastic? What types of plastic do you think we should keep?
- » What are some ways that we can reduce the amount of plastic we use in our day to day lives?

End Notes

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- 10 Environmental Protection Agency 2024. *Ireland's recycling rate has not improved in a decade: it is time to move away from a wasteful linear economy*. Available at: <https://www.epa.ie/news-releases/news-releases-2024/irelands-recycling-rate-has-not-improved-in-a-decade-it-is-time-to-move-away-from-a-wasteful-linear-economy-.php>.
- 11 Plastics for Change, 2025. *Why is less than 10% of the world's plastic being recycled?* Available at: <https://www.plasticsforchange.org/blog/why-is-less-than-10-of-the-worlds-plastic-being-recycled>
- 12 Plastic Expert, 2024. *What Country Recycles the Most Plastic*. Available at: <https://www.plasticexpert.co.uk/what-country-recycles-the-most-plastic/>
- 13 New York Times, 2022. *The Great Pacific Garbage Patch*. Available at: <https://www.nytimes.com/2022/05/06/science/great-pacific-garbage-patch-pollution.html>