Environment

Blue planet – to have and to hold

RecyCOOL Lessons

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Description of the lesson
This lesson focuses on the environmental impact of transportation in general. The students will start the study by recalling what they already know about transportation in the fashion industry and the environmental impact of transportation in the fashion industry, such as CO2 emissions. After that, the students will learn how transportation harms the environment in more detail. Students will use the online calculator to assess their impact on the environment based on their shopping mentality. Using their knowledge of transportation in the fashion industry, they will think of how they can change their behaviour regarding their wardrobe to minimise the transportation process.

Objective
The objective of this lesson is to help students understand the impact of transportation on the environment and how to calculate their carbon footprint. Furthermore, students will be able to recognise their impact, i.e., become aware of their carbon footprint when buying or caring for their clothes.

After this lesson you will be able to
– recognise the environmental problems of transportation of clothing
– recognise the impact of personal choices, i.e. become aware of your own carbon footprint when buying or caring for clothes

Tools and materials
pen, paper, laptop, online carbon footprint calculator

ENVIRONMENTAL IMPACT:

Environmental impacts are changes in the natural or built environment, resulting directly from an activity, that can have adverse effects on the air, land, water, fish, and wildlife or the inhabitants of the ecosystem.

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The fashion industry is considered to be one of the most polluting industries in the world, and it's also linked with transportation.

Do you know where transportation happens in the clothing manufacturing process? Transportation happens from the very beginning of the process, from raw material supply, all the way to shipping the finished product (to your shops, or to your address).

Think about other points in the clothing manufacturing process where transporting needs to take place, and write these down. Can you name the ways transportation harms the environment? Think of the exhaust gases, the noises that transportation vehicles produce. Can you name 3 more of them?
Please explain your answers.

Can you think of a way you could change a step or a process that would lower the amount of transportation needed in clothing manufacture? Please write down your ideas.

As you already know, transportation produces vast quantities of CO^2. Write down what you know about CO^2 and the process of climate change. What do we call gases such as CO^2?

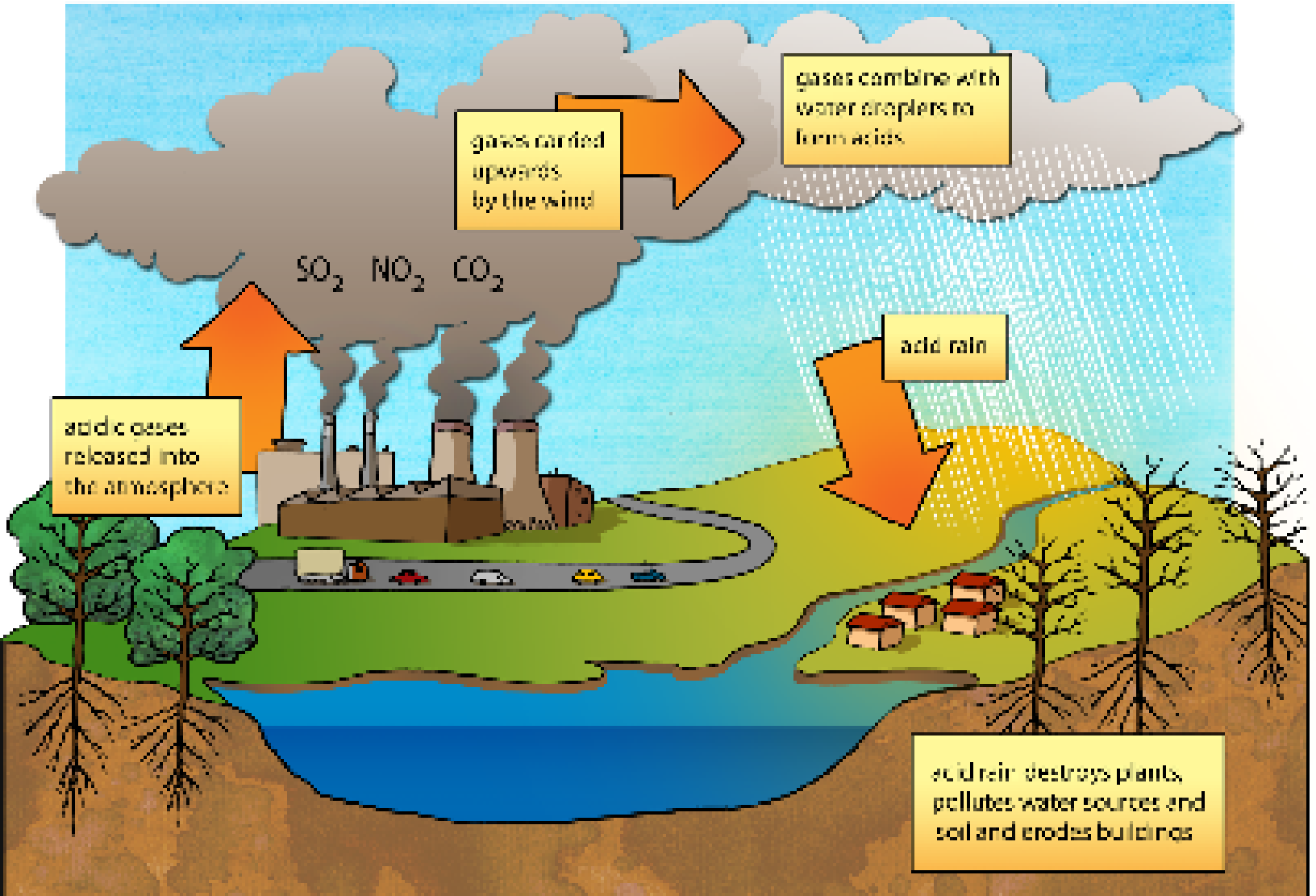
Transportation consumes a significant portion of available energy in the world. Some estimates say that up to one-third of energy resources are used up by transportation in the EU, mainly in oil. Because of this fact, transportation leaves a massive carbon footprint and therefore is a significant contributor to climate change.

But what exactly is the carbon footprint? It is defined as the amount of released CO^2 in tonnes by an individual, a corporation, transportation mode, or a household. It serves as a measure of the entity's contribution to filling the atmosphere with greenhouse gases.

But, CO^2 does not act only as a greenhouse gas that affects the atmosphere, it is also absorbed by oceans, making them more acidic. This process, known as ocean acidification, harms marine life, as it's most strikingly seen in the example of the decay of coral reefs.

Besides CO^2, vehicles release a plethora of other compounds that harm the environment, including soot, nitrogen oxides, and sulphur oxides. Soot is a black particulate matter that falls onto plants and soil. The soot poisons the soil. It can also pour so densely on the leaves that it prevents the sunlight from reaching them, thus preventing photosynthesis and eventually killing plants.

Photo credit: Siyavula Education



When released into the atmosphere, nitrogen and sulphur oxides can turn into nitric and sulphuric acid. In this form, it comes back to earth via rain, a phenomenon called acid rain that can cause severe damage to forests, streams, and lakes.

Now, let us talk about other ways transportation can harm the environment. The first of them is noise pollution. Although you may think the noise is not a polluter, it certainly is! Continuous noise exposure can impair some animals' ability to communicate with each other or hear the love call of a potential mating partner. The most obvious example is whale communication, which is regularly interrupted by the noise produced by ships.

Furthermore, there is a phenomenon called "habitat fragmentation". Transportation requires specific infrastructure – cars and trucks need roads, and trains need railways. Transport infrastructure severely impacts the landscape because it divides natural areas into small patches with severe consequences for animals.

The problem is undeniable with forests as some animals are hesitant to leave the shadows of trees. For example, birds that usually fly short distances, from tree to tree, will not pass over a large open area such as a road. In addition, big roads, such as motorways, are separated by a fence, which makes it difficult (or impossible) for animals to cross them.

Task

Let's calculate the carbon footprint you make with your current approach towards your wardrobe, using the following calculator.

Please write up the result. Is it as you expected?

This is another carbon footprint calculator that approximates the amount of CO2 you generate, by combining lots of different day-to-day life activities, including wardrobe.

You can insert just the wardrobe data (you can find it under secondary) and compare the results from both calculators. Which one do you think is better? Why?

Think of the possible ways you could change your approach towards your wardrobe to minimise your carbon footprint (for example, renting, donating or repairing clothes).
Please explain how it would impact your carbon footprint (write 2–3 sentences).

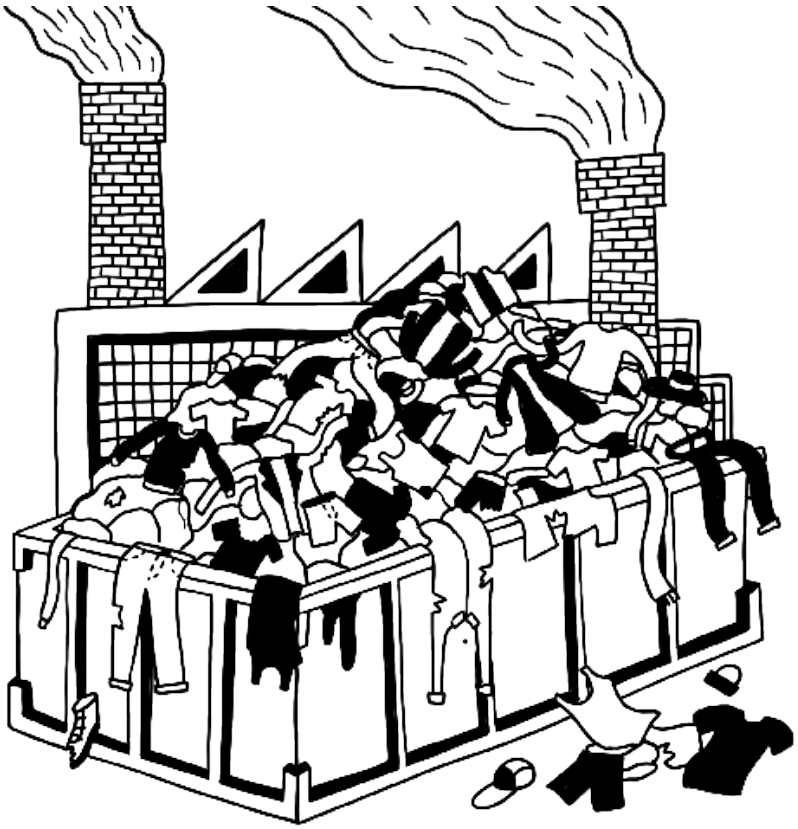
Reflection

Compare the results of your calculation with your classmates, if possible. How do you stand among your peers? Is your carbon footprint higher or lower than the rest of the class?

Do you or any of your classmates buy from sustainable brands? If so, share that information or ask them the name of the brand/s. Look up the brands on the internet to see their products. If not, use Google to find sustainable brands and check what they have to offer.

Comment on it!

Go back to the calculator and find out what would be your carbon footprint if you switched, at least partially, to sustainable brands.



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