

Erasmus+ Guide

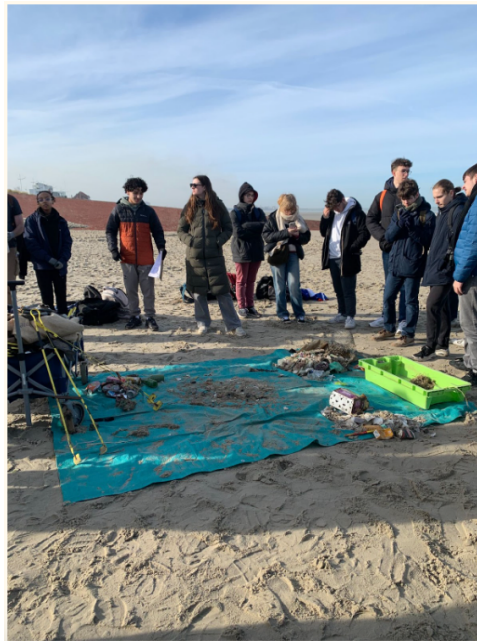
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What is the definition of a carbon footprint?

Introduction

For the Erasmus project we went to the beaches of Dunkerque where we had an activity that consisted of beach cleaning. We searched for plastic and other damaging materials for nature. We got an explanation about the different kinds of trash that we had to sort out after we gathered all the trash on the beach. There were instructors who explained a lot of things to us. They talked about different kinds of waste on the beach, how long it takes for trash to dissolve and about birds that live on the beach. We learned that the carbon footprint is a very important factor in our lives and we want to tell you more about this subject.



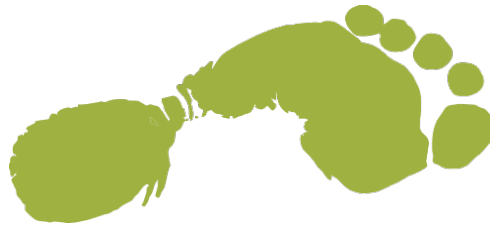
Carbon Footprint

A carbon footprint is an indicator used to estimate the level of greenhouse gas (GHG) emissions attributable that an activity, product, company or country adds to the atmosphere. Carbon footprints are usually reported in tonnes of emissions per unit of comparison. The objective is to assess the environmental impact of the activity concerned. In Dunkerque the bus is free so more people take the bus that also uses biological gas which is better for the environment. That means that the carbon footprint is less in this part of France. Because of the concentration of plastic in the sea and on the beach, we also find little pearls of plastic called “mermaid tears”.

Conclusion

We went to the beaches of Dunkerque where we learned a lot about the carbon footprint. A carbon footprint is an indicator used to estimate the level of greenhouse gas (GHG) emissions attributable that an activity, product, company or country adds to the atmosphere. We also learned about birds and “mermaid tears”. It was a very fun and educational day at the beach.

How can you calculate your carbon footprint?



step 1. Multiply your monthly electric bill by 105

step 2. Multiply your monthly gas bill by 105

step 3. Multiply your monthly oil bill by 113

step 4. Multiply your total yearly mileage on your car by 0.79

step 5. Multiply the number of flights you've taken in the past year (4 hours or less) by 1,100

step 6. Multiply the number of flights you've taken in the past year (4 hours or more) by 4,400

step 7. Add 184 if you do NOT recycle newspaper

step 8. Add 166 if you do NOT recycle aluminum and tin

step 9. Add 1-8 together for your total carbon footprint

below 6,000 = low

6,000–15,999 = ideal

16,000–22,000 = average

Conclusion

- Things that have more impact on the environment will usually have a bigger impact on your carbon footprint
- Tips how to improve your carbon footprint

Whats sport activities are the lowest producers of carbon in the Netherlands and France?

Every sport brings some kind of carbon production, some less than others. In each country we did some unique sports as well as known sports, like walking and baseball.



In the Netherlands the sports we did were: korfbal, dodgeball, walking, mud walking. With each sport there is carbon in the production chain. With walking the production of CO₂ is very low, because you don't need any special equipment, however a person of course exhales CO₂. It is nearly the same as mud walking, as it is walking in mud. For walking in mud there is special equipment necessary like warm clothing and old shoes. Moreover, you have a lot of travel time for mud walking, because it needs to be in a specific area, the Wadden Sea. Of course dodgeball and korfbal are inside, so they need heating and lighting, which both cause an extra emission of carbon. In addition to that you need other equipment as well. For example, a ball for dodgeball as well as korfbal. For korfbal there is another requirement, a basket.

Netherlands - sports with emission co2

Estimated CO ₂ Emissions per Hour (kg CO ₂ e per person)			
Sport	Indoor/Outdoor	CO ₂ Emissions per Hour (kg CO ₂ e)	Notes
Walking (Wandelen)	Outdoor	~0.0 - 0.05	No facilities, minimal impact.
Mudflat hiking (Wadlopen)	Outdoor	~0.05 - 0.1	Similar to walking, but may require travel to the Wadden Sea.
Dodgeball (Trefbal)	Indoor/Outdoor	~0.2 - 0.6	Indoor play increases energy use for lighting and heating.
Korfbal (Korfbal)	Indoor/Outdoor	~0.3 - 1.0	Outdoor play is low-impact, but indoor halls require energy for heating and lighting.

In France, we did the sports: walking, table tennis, badminton, basketball and sea wading. As you can see in the screenshot, walking is the lowest CO₂ emitting sport we did in France. And in the swimming activity you can see that we swam in the ocean, so there is also none to zero emission. The sports table tennis, basketball and swimming are inside and that requires light and heating. They also require other equipment such as, balls, bats, tables, baskets and nets.

France - sports with emission co2

Estimated CO ₂ Emissions per Hour (kg CO ₂ e per person)			
Sport	Indoor/Outdoor	CO ₂ Emissions per Hour (kg CO ₂ e)	Notes
Walking	Outdoor	~0.0 - 0.05	No facilities or equipment needed.
Table Tennis	Indoor	~0.1 - 0.3	Small space, low lighting needs, minimal equipment.
Badminton	Indoor	~0.2 - 0.5	More lighting and shuttlecock production.
Basketball	Indoor/Outdoor	~0.3 - 1.0	Indoor courts need heating, lighting, and maintenance. Outdoor is lower impact.
Swimming	Indoor Pool	~2.0 - 3.0	Heated pools consume a lot of energy. Open water swimming is near zero emissions.

We concluded that walking is the best option to decrease carbon production as it requires no external dependants. In contrast, sports conducted inside increase carbon footprint.

What was our carbon footprint in the activities that we did like sea wading and sand yachting?

Sea wading and sand yachting are low-impact recreational activities that primarily rely on human or wind power, resulting in minimal direct carbon emissions. The footprint will come more from the production of the materials and the transportation.

Sea wading: This activity does not cause any pollution by itself, but the materials and transport can produce emissions. When you go to the beach, many people choose to take the car because it's convenient. This is the most common cause of pollution.

The second thing is the equipment needed to do this activity in winter, such as wetsuits. They have to be made from certain materials, and after that, they sometimes have to travel a long way, for example, by boat from China or another distant country.



Sand yachting: This activity itself does not cause any pollution. You go to the beach, take the yacht with you, and glide over the sand. However, there are things that do cause pollution, such as transportation and the materials needed to make it happen.

The first thing is all the equipment you need. You need plastic, which can cause emissions during production because it has to be melted, releasing chemical substances. Besides that, you need many more materials to make the whole thing work, such as ropes, a sail, and much more.

You also need to transport everything. You can choose to buy the materials and assemble everything locally, but you can also manufacture it elsewhere. If everything is

produced on the other side of the world, it needs to be transported here, which is highly polluting for the environment.

Additionally, you need to get to the beach, and the sand yachts need to be transported there as well. This can be done by hand, but in most cases, a tractor is used.



Conclusion

It is not very bad for the environment, but there are things you can pay attention to in order to reduce emissions. It is better than many other activities. So, I would recommend it to everyone who wants to do something fun without polluting the environment too much.

What is our carbon footprint when we travel to the Netherlands or France when we go by bus instead of by car?

You can calculate a carbon footprint with the formula: number of kilometers x emission factors

So the number of kilometers is: 245 km from Netherlands (Huizen) to France (Dunkerque).

Emission factors if you go with the bus: 29,4 kg CO₂e

Emission factors if you go with 7 cars: 61,25 kg CO₂e for one car so 428,75 kg CO₂e for the seven cars.

If we went with the car we would need 7 cars and the footprint would be 105043,75 gha big.

We calculated this with the formula: 245 km x 428,75 CO₂e

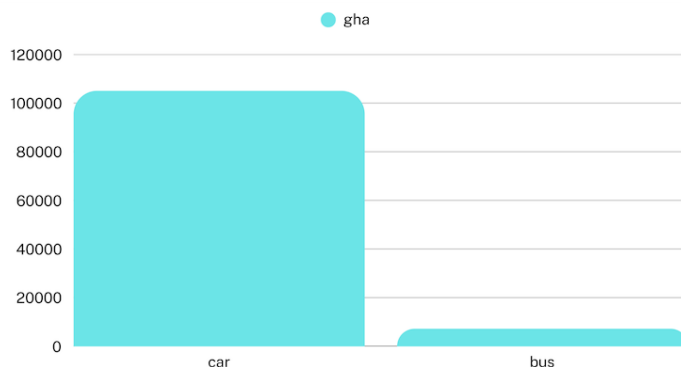
And we went with one bus because the footprint is 7203 gha big.

And we calculated this with this formula: 245 km x 29,4 kg CO₂e

So we went with the bus, because the difference is 105043,75-7203= 97840,75.

In conclusion we can say that taking the bus is more ecological than taking the car which will force us to use 7 cars which amounts to emitting 428,75 kg CO₂e well with the bus we would emit 29,4 kg CO₂e for the same distance. And because we want to be sustainable we went with the bus.

Diagram of the carbon footprint



Tips that you can use to make your carbon footprint smaller!

- You can take a bicycle and walk with the carts to the beach.
- We can produce the materials in Europe to reduce emissions from transportation
- We can use electric trucks.
- To reduce the footprint you can do the sports outside
- Use as little equipment as possible.
- Walk and cycle more
- You can recycle the trash (plastic , glass, seaweed) to make other objects.
- You can sort out all the trash you throw away at home.
- You can reduce waste by eating all the food on your plate and plan meals accordingly
- You can make compost with vegetable peels.
- You can also use public transport so you don't have to use the car everyday.
- Use less energy by reducing your heating and cooling use
- Switch to LED light bulbs
- Energy-efficient electric appliances
- Washing laundry with cold water
- Hanging things to dry instead of using a dryer
- Eco-friendly insulation in homes and businesses
- Replace oil/gas with electric heat pump
- If you use a car, go with a electric alternative