Methodological
TOOLKIT 2

Refresh your lessons and workshops with interactive activities.

Green GATE 2

živica
INŠPIRUJEMO K ZMENE

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GreenGate Methodological Toolkit$_2$

Created within the project GreenGate$_2$.

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Table of Contents

Introduction

This methodological toolkit offers hands-on activities to explore the hidden world of chemicals in cosmetics, cleaning products and health supplements. Through interactive exercises, students learn to critically examine everyday products, uncover potential health and environmental impacts, and reflect on consumer choices. The toolkit empowers young people to ask the right questions and make informed, responsible decisions in their daily lives.

Who is the toolkit intended for?

Toolkit is an educational tool for teachers and trainers or for peer-to-peer education. It includes 11 engaging activities designed for use in the classroom or even outdoors, which is strongly encouraged. The activities are organized into excursion plans, experiments, as well as short and longer activities.

Whether to excite biology lessons, enrich chemistry lab work, or strengthen students' English skills by examining everyday cosmetic products, this toolkit offers a flexible and inspiring resource.

Structure of the activities:

Aim: the learning goal of the activity
Time: time is an estimation, it will highly depend on the participants previous knowledge on the topic
Tools: tools that you will need to perform the activity
Preparation: only some activities require a step before the actual activity
Motivation: this is a short activity to get into the topic or move a little before the activity starts
Core: the main activity
Conclusion: this is to conclude and reflect on the activity, often by additional discussion
Appendix: annex which, in most cases, will need to be printed out

What Do You Stand For?

INTRO

How often do you really think about your own habits when it comes to makeup, skincare, or medicine? In this activity, we're putting your daily choices to the test - literally!

You'll hear a series of statements like "I always check the ingredients in my cosmetics" or "I take medicine without reading the instructions"- and then you'll move to the YES or NO corner based on your own experience. No right or wrong answers, just a chance to reflect, compare, and maybe even rethink some habits!

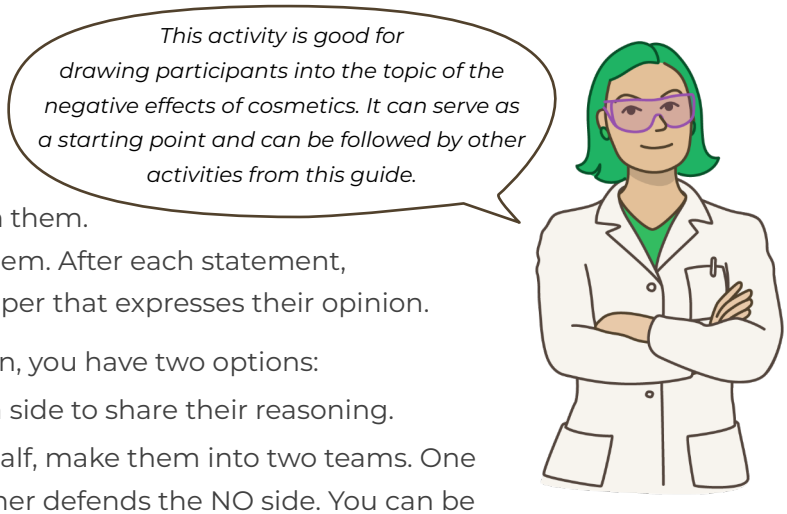
Aim: Think critically about topics, discuss and justify your opinion.

Time: 20 minutes

Place: Indoors or outdoors

Tools:
- ▹ statements (appendix)
- ▹ paper saying YES
- ▹ paper saying NO
- ▹ several cosmetic products
- ▹ school tablets with GreenScan app

CORE



Spread the papers with the YES and NO signs in the space so that there is more space between them. Have participants start by standing between them.
One by one, read the statements to them. After each statement, the participants line up behind the paper that expresses their opinion.

When participants made their decision, you have two options:

1. invite a few participants from each side to share their reasoning.
2. when opinions split the group in half, make them into two teams. One team defends the YES side, the other defends the NO side. You can be the judge who listens and decides which team had the stronger arguments.

CORE

Introduce participants to the GreenScan app, which identifies harmful ingredients in cosmetics, and the Green-Gate platform, which offers engaging articles and DIY videos on creating homemade beauty products: *https://green-gate.eu/*. Test the app with tablets and example products.

Appendix

Statements

(According to time limitations, you can choose a few of these or add your own.)

Age 13-14

- I make/have made my own skin-care products.
- I try to buy products without plastic packaging.
- I tried/use solid shampoos or deodorants.
- I want to buy cosmetic products that were promoted to me through social media.
- I have many cosmetic products at home that I don't even use.
- I check the ingredients in the products I am using.

Age 15-26

- When I buy a beauty or skin-care product I check the ingredients.
- When I go outside and it is sunny, I put on sunscreen.
- I buy cosmetics with eco/bio certification.
- I make/have made my own skin-care products.
- I try to buy products without plastic packaging.
- I tried/use solid shampoos or deodorants.
- I have an application that assesses ingredients.
- The deciding factor for cosmetics is the price.
- I often buy cosmetic products that were promoted to me through social media.
- I have many cosmetic products at home that I don't even use.
- Pain-killer medication is my no.1 remedy.
- I take vitamin supplements almost daily.
- I have strategies to relieve a headache without taking medication.
- When I take an over-the-counter medication, I check the instructions of usage and the side-effects.

What is in your cosmetics?

INTRO

Ever checked the ingredients on your favorite hair gel or face cream? Some products hide chemicals that can affect your skin and even your health! But don't worry, we've got the perfect tool to uncover the truth!
In this activity, we'll use a special app to scan cosmetic products and analyze their ingredients. You'll learn how to spot harmful chemicals, understand what's safe, and become a pro at choosing health-friendly products.

Aim: Learn what ingredients are in your cosmetics, what effects they might have on your health and the environment.

Time: 45 minutes

Place: Indoors or outdoors (make a small field trip to a drug store)

Tools:
- ▹ worksheet for each participant or a pair of participants
- ▹ tablets (if participants are not allowed to work with their own devices).

PREPARATION

Ask the participants to bring 5-8 skin or beauty care products that they use regularly (for example: toothpaste, face gel, make-up, soap, deodorant, hair gel, etc.).

Alternatively, you can plan a small field trip into a nearby drugstore and do the scanning of the products there. Make screenshots of the ratings and continue with the activity back in the workshop room / classroom.

Ask the participants to download the GreenScan app:
https://green-gate.eu/greenscan-app/ (if working with their own personal devices).

MOTIVATION

Participants sit in a circle. Ask them an introductory question:

- *According to which parameters do you choose your cosmetics?*

Write the answers on a blackboard or a big piece of paper, e.g. *brand, fragrance, good experience, price, advertising, anti-allergenicity, product not tested on animals,* etc.

After noting down the answers, ask the participants to choose the top 3 aspects that are most important to them. Do the i*ngredients* of the product feature in these three?

CORE

Ask the participants to work alone or in pairs (depending on your preference), to download and or open the GreenScan app and to scan each of their products following the instructions in the app. Not all products can be found in the app. If their product is not in the app, they should add it, take a photo of the product and submit it for analysis.

Participants should select 6 products and complete the worksheet in the Appendix. The thumbs-up on the worksheet serves as a rating scale: color the entire picture if they like the product and consider it good, fill in half if they still like the product despite a less favorable assessment, and leave it empty if the product needs to be reconsidered.

CONCLUSION

Discuss what they have learned about their products, ask:

Was the assessment helpful for you? Do you consider buying different products in the future? Try to find good alternatives, will you make the switch?

Appendix

Worksheet:

Product	Health Impact score	Enviro Impact score	Worst ingredients	Worst health impact	My Assessment

GreenGate memory

INTRO

We're going to play memory, but with a twist: one of you holds a fancy term from the world of cosmetics, health, or the environment, and the other holds its definition. Your mission? Find your perfect match and at the same time learn some new terms! But that is not all, with your perfect other half you also need to decide where you belong in the world of health, the environment and society and meanwhile practice your argumentation.

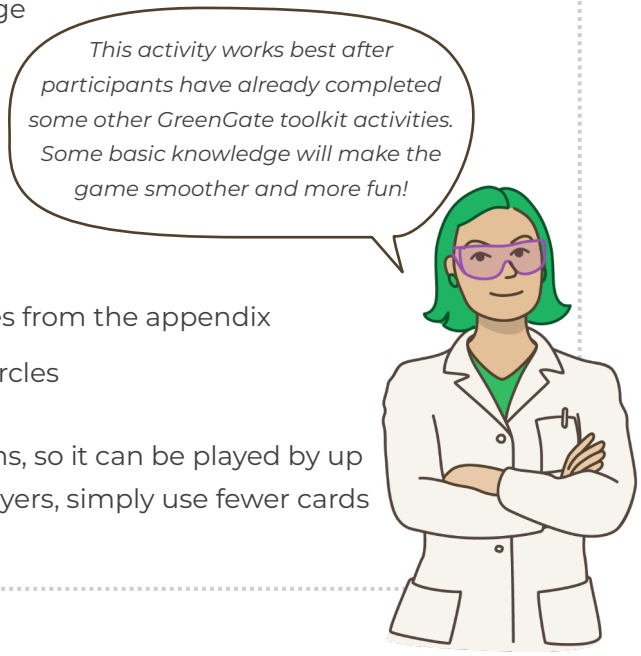
Aim: Learn some key terms from the beauty and health industry or reinforce your knowledge gained from GreenGate toolkits.

Time: 20 minutes

Place: Indoors or outdoors

Tools:
- ▹ printed cards and ellipses from the appendix
- ▹ strings/cords to create circles

Tips: The game includes 13 terms, so it can be played by up to 26 people. For fewer players, simply use fewer cards or play more rounds.



CORE

Position the three ellipses from Appendix 2 in different areas of the room/place and create a big circle with string around it.

Hand each participant a card from Appendix 1 containing either a word or its explanation. Their task is to find their matching pair and stand together in the circle they believe is most affected by their term - positively or negatively.

CONCLUSION

Each pair will then explain their term and justify their choice for where they stand. There are no right or wrong answers - what matters is their reasoning and argumentation.

Appendix 1.
Cards

When companies make themselves look more eco-friendly than they really are. They slap a few green labels on their stuff and use words like “natural” or “sustainable” to make you think you’re helping the planet by buying their stuff - even if they’re not actually doing much for the environment. It’s kind of like pretending to recycle but just tossing everything in the trash. 🌍💚🚮

These are man-made chemicals that keep plastics from snapping like a dry twig. They’re in tons of everyday stuff - like shampoo, perfume, and even some food packaging. The downside? They’ve been linked to some pretty serious health issues. So basically, they help plastic bend but might mess you up in the process. 🚫🧴⚠️

GREENWASHING

PHTHALATES

Tiny plastic bits (less than 5mm) that are basically everywhere - oceans, animals, and even inside us. Marine creatures eat them thinking they’re food, and guess what? So do we. It’s like unwanted glitter for the planet - once it’s out there, good luck getting rid of it. 🌊🐟🚫

Basically, the EU’s rulebook for cosmetics. It sets the standards for what’s allowed in your skincare and other beauty products to make sure they’re safe. So if a product doesn’t meet these rules, it’s not hitting the shelves in Europe. Think of it as a VIP bouncer for your beauty routine. 💄🚫✅

MICROPLASTICS

REGULATION (EC) N° 1223/2009

ENDOCRINE DISRUPTING CHEMICALS

These sneaky chemicals (natural or man-made) mess with your hormones like an annoying hacker in your body's system. They can mimic, block, or totally throw off how your hormones work, leading to all sorts of health problems. Basically, they're the toxic drama queens of the chemical world. ⚠️🧪🚫

IMMUNE SYSTEM

Your body's personal security team, always on the lookout for germs, viruses, and other bad guys trying to mess you up. It's like having tiny bodyguards (white blood cells) ready to fight off intruders. But if it gets weak, you're basically leaving the door open for sickness to crash the party. 🦠🛡️😉

FOOD SUPPLEMENTS

Little extras (like vitamins, minerals, or protein powders) that people take when their diet isn't giving them everything they need. Think of them as bonus points for your health - but they're not a free pass to eat junk all day. A pill won't fix a diet full of pizza and soda (sadly). 🍏💊🚀

STRESS

That feeling when your brain is running a marathon and your body's like, "I didn't sign up for this!" It is useful in the short term, but when chronic it can overload the body. It's what happens when life piles on too many things at once - school, work, friends, drama.
It can be a lot to handle, and if it's too much, it can totally throw you off. Basically, it's your body's way of saying, "Help, I need a break!" 😩💥🧠

NANOPARTICLES

Super tiny bits of stuff - so small you can't even see them with your eyes. They're used in everything from skincare products to electronics, but because they're so small, they can sneak into places you don't want them (like your skin or lungs). It's like a microscopic ninja squad doing their thing without you even knowing. 🦸🔬👀

FOOD CHAIN

So, imagine this: a fish eats a tiny piece of plastic thinking it's food. Then, a bigger fish eats that fish, and eventually, a human munches on that bigger fish. Boom, now *you're* eating plastic too. It's like a nasty game of "pass the trash" until it ends up on your plate. Not exactly the healthiest snack, right? 🐟➡️🐟➡️🍽️🚫

BIOACCUMULATION

When toxic stuff (like chemicals or heavy metals) slowly builds up in an animal's body over time because they keep eating things that have it. It's like that one person who keeps collecting random junk - except instead of old socks, it's poison. 🐟⚠️🦸

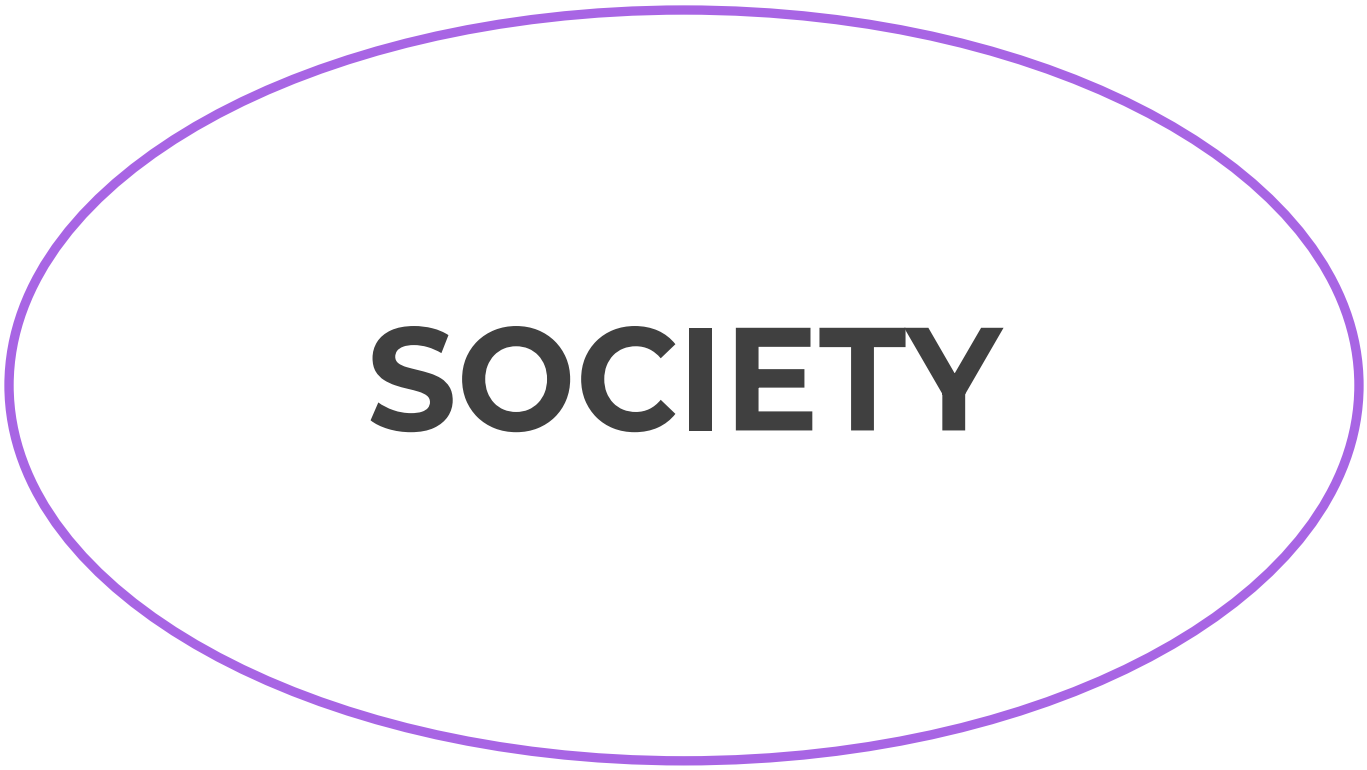
OVER-THE-COUNTER MEDICATION (OTC)

These are the meds you don't need a doctor's note for. You can just walk into the store and grab them for stuff like headaches, colds, or sore throats, but remember - just because you don't need a prescription doesn't mean you should take them like candy. 🏥💊👀

FILTRATION	It's like giving a liquid or gas a spa day - sending it through a filter that lets the clean stuff flow through while catching all the gunky solid bits and telling them, "Nope, you're not coming in!" So we can continue to use the clean material and the unpleasant solid particles will remain trapped.💧✨🧽

Appendix 2.
Ellipses


ENVIRONMENT


SOCIETY

Store-bought or home-made?

INTRO

What's better, making your own bath bombs or buying them from the store? Let's put it to the test! In this hands-on activity, you'll create your very own fizzy, bath bombs using natural ingredients. But that's not all!
We'll head outside to collect flowers and herbs to add a personal, nature-inspired touch to our creations.

Aim:
- Make fizzy bath bombs using natural ingredients.
- Compare the ingredients of a home-made and a store-bought product.

Time: 60 minutes

Place: indoors, possibly outdoors (flower picking)

Tools:
- ▹ list of flowers and herbs (appendix)
- ▹ large bowl
- ▹ cup
- ▹ measuring spoon
- ▹ silicone mold or tray (for muffins or ice)
- ▹ purchased bath bomb (with list of ingredients)

Ingredients: To make 12 small bath bombs (count at least 2 per person):
- ▹ 1 cup of citric acid
- ▹ 1 cup of baking soda
- ▹ 1/2 cup of cornstarch
- ▹ 1/2 cup of epsom salt (or other bath salt)
- ▹ 2 tablespoons of coconut oil
- ▹ 2 tablespoons of water
- ▹ 10-15 drops of essential oil (not necessary, the oil is there only for scent, we recommend skipping it if someone has sensitive skin)
- ▹ dried flowers

PREPARATION

If the season allows, take a short walk with the participants to collect flowers from a meadow or forest. A list of common flowers and their benefits is provided in the appendix. Alternatively, participants can research online about the flowers they have found and would like to collect. The PlantNet app can be used to help identify unknown plants.

Ideally, allow the flowers to dry in a warm, dry place for a few days. If drying isn't an option, fresh flowers can be used, but the bath bombs should be used within a few days. Another option is to pre-order dried flowers and discuss their specific benefits with the group.

Using flowers in the bath bombs is optional; when bathing they will float in the bathtub, they can be left out if preferred.

MOTIVATION

To warm up and get a little active: Let us play molecules! Tell the participants to imagine that they are atoms. In favourable conditions, they prefer to bond to create molecules.

The game goes:

1. Play some music and participants (atoms) just walk around the room freely
2. When music stops, shout out 2 atoms bond and participants need to create pairs
3. Play music again, participants walk around in their pair
4. When music stops, shout out 3 atoms bond and participants need to create a triad
5. In the last round, participants create a 4 atoms bond - this will be their group for the core activity

CORE

Tell the participants that today we have a challenge - we will prepare our own product, a natural bath bomb. It will be without any artificial ingredients.

Procedure (for each group):

1. In a large bowl, combine citric acid, baking soda, cornstarch, and epsom salt.
2. Add coconut oil and mix well until the mixture looks like wet sand.
3. Add an essential oil of your choice and mix well.
4. Add water and half of the dried flowers and gently work through until the mixture starts to hold together. You should have a mouldable consistency.
5. Line the mould with flowers and layer the mixture on top of them and press down firmly.
6. Let the mixture dry in a dry and cool place for at least 24 hours.

TIPS:

- IF THE MIXTURE FALLS APART, YOU CAN ADD A LITTLE WATER AND MIX IT WELL AGAIN. IF THE MIXTURE IS TOO WET, ADD MORE BAKING SODA AND CITRIC ACID.
- BY ADDING DIFFERENT OILS WE CAN VARY THE EFFECTS ON THE SKIN.
- A SELF-MADE BATH BOMB MAKES A PERSONAL GIFT FOR DIFFERENT OCCASIONS.
- IF THE BOMBS ARE VERY SMALL, USE 2 PER BATH.

CONCLUSION

Take a look at the purchased bath bomb - check its composition and compare it with the ingredients used to make DIY bath bomb.

Ask the participants if they can identify all the ingredients in the purchased bath bomb. (The problem may be that the ingredient lists usually do not use terms that are understandable to the consumer.)

What is the composition of the self-made bath bomb? Let's also look at the benefit of the individual ingredients:

- **Citric acid** - helps keep skin youthful and healthy by removing dead skin cells;
- **baking soda** - gently cleanses skin and has antibacterial properties;
- **cornstarch** - creates a thicker consistency;
- **epsom salt (or other bath salt)** - stimulates circulation, hydrates skin, detoxifies and regenerates;
- **coconut oil** - moisturizes and smooths skin;
- **dried flowers** (benefits in appendix).

Which bath bomb would participants prefer and why?

Forget-me-not 	The plant's antioxidants fight off oxidative stress, which is basically one of the main villains in the aging skin saga. Plus, its vitamins and minerals give your scalp and hair follicles a boost, helping your hair grow stronger and shinier. Talk about a hair glow-up!
Calendula 	Calendula's been a skin healer for ages! It's packed with antioxidants that help renew your skin and give it that extra glow-up, making it look fresh and amazing.
Lavender 	This purple flower's oil is basically your nighttime BFF, it helps you sleep better, kicks stress to the curb, and is super gentle on all skin types, whether you're oily, sensitive, or dry. Plus, it's got antibacterial and antiseptic powers, all wrapped up in a chill, soothing scent.
Rose 	Rose is like a magic elixir for your skin! It hydrates, heals, and helps repair broken blood vessels while fighting dryness. Plus, it regenerates your skin and keeps your emotions in check (hello, calm vibes). Rose water also works as a natural astringent, tightening pores, reducing redness, and giving your skin that perfect glow-up.
Chamomile 	Chamomile isn't just for bedtime tea, it's a total skin-saver! Known for its chill vibes, it helps with inflammation and puffiness. It also strengthens capillaries, which means less redness and more calm, happy skin.
Dandelion  CC BY-SA 4.0 https://identify.plantnet.org/	Dandelion might be your skin's secret hero! It prevents damage from UVB rays, calms irritation, boosts hydration, and can even help with acne.

Journey through the life-cycle of cosmetics

INTRO

Ever wondered where your favorite perfume comes from? From the mining of raw ingredients to the moment you toss the empty bottle, every cosmetic product has a hidden story and it affects more people, animals and places than you think!
In this eye-opening activity, we'll trace the entire life cycle of cosmetics - from extraction and production to consumption and waste. Along the way, we'll uncover the real impact on workers, communities, and the environment.

Aim: Think critically and realise the consequences of our daily choices and the impact of the products we use on our health, the environment, other people and animals.

Time: 45 – 60 minutes

Place: Indoors

Tools:
- ▹ a set of pictures and texts for each group (in Appendix 1)
- ▹ flipchart
- ▹ sticker dots or markers for voting

Note: In this activity, sensitive topics are discussed. The problems described in the texts are only examples and do not include all the problems that occur within a life-cycle of cosmetic products.

Some texts have been based on texts from activity *Stories behind our cosmetics* in Toolkit GreenGate 1.

MOTIVATION

To get into the topic, show the participants this video: The Story of Cosmetics https://www.youtube.com/watch?v=pfq000AF1i8.
(It is sufficient to watch till min 5:20, after that the legislation in the USA is discussed, if there is interest, more about legislation in the EU can be found here: https://green-gate.eu/blog/good-to-know/your-beauty-care-in-numbers/).

Now invite the participants to:

- *Everyone please think about how many cosmetic and personal care products you use per day.*

After 2 minutes continue:

- *Now we're going to move a little bit. Let's form a line based on the number of products each of you use, starting from the most to the least. We will create a queue and we have a time limit of 2 minutes.*

Participants can talk during the activity. The time limit is intended to increase group dynamics. Once the participants are lined up, divide them into 4 groups according to how they stand next to each other in the line.

CORE

Give each group one set of pictures from Appendix 1. Explain that each set shows problems related to one phase of the life cycle of a cosmetic product. A simplified life cycle has the following four phases:

1. resource extraction,
2. production,
3. consumption,
4. disposal and discharge.

The task of the groups will be to discuss what problems they think the images represent and at which stage of the product's life cycle these problems may occur. Give them a time limit (max. 5 min).

When the time has elapsed, give each group a set of texts from Appendix 1 related to the pictures they received. Each set focuses on one stage of the product life cycle and the problems associated with it:

1. **Extraction of resources (Group 1. - Set of images and texts 1.)** - child labour, deforestation caused by palm oil monoculture, destruction of the environment caused by crude oil extraction.
2. **Production (Group 2. - Set of images and texts 2.)** - water use and pollution, animal testing, harmful ingredients used in cosmetics.
3. **Consumption (Group 3. - Set of images and texts 3.)** - greenwashing, chemicals entering the body, chemicals released into the environment.
4. **Disposal and discharge (Group 4. - Set of images and texts 4.) -** waste from packaging, chemicals in wastewater treatment plants, microplastics into the environment.

The task of the group is to read the texts, connect them with the pictures and then present the 3 problems to everyone.

Set up a flip-chart, where each group can stick their pictures and write 2-3 key words describing the problem.

CONCLUSION

Each participant gets 3 sticker dots. The sticker dots represent a voting system. Each participant should place a sticker dot to a problem that they see as the most problematic and they would like to discuss it further.

According to the time left, select 3 or 4 problems that received the most dots and lead a discussion with all the participants.

Discussion:

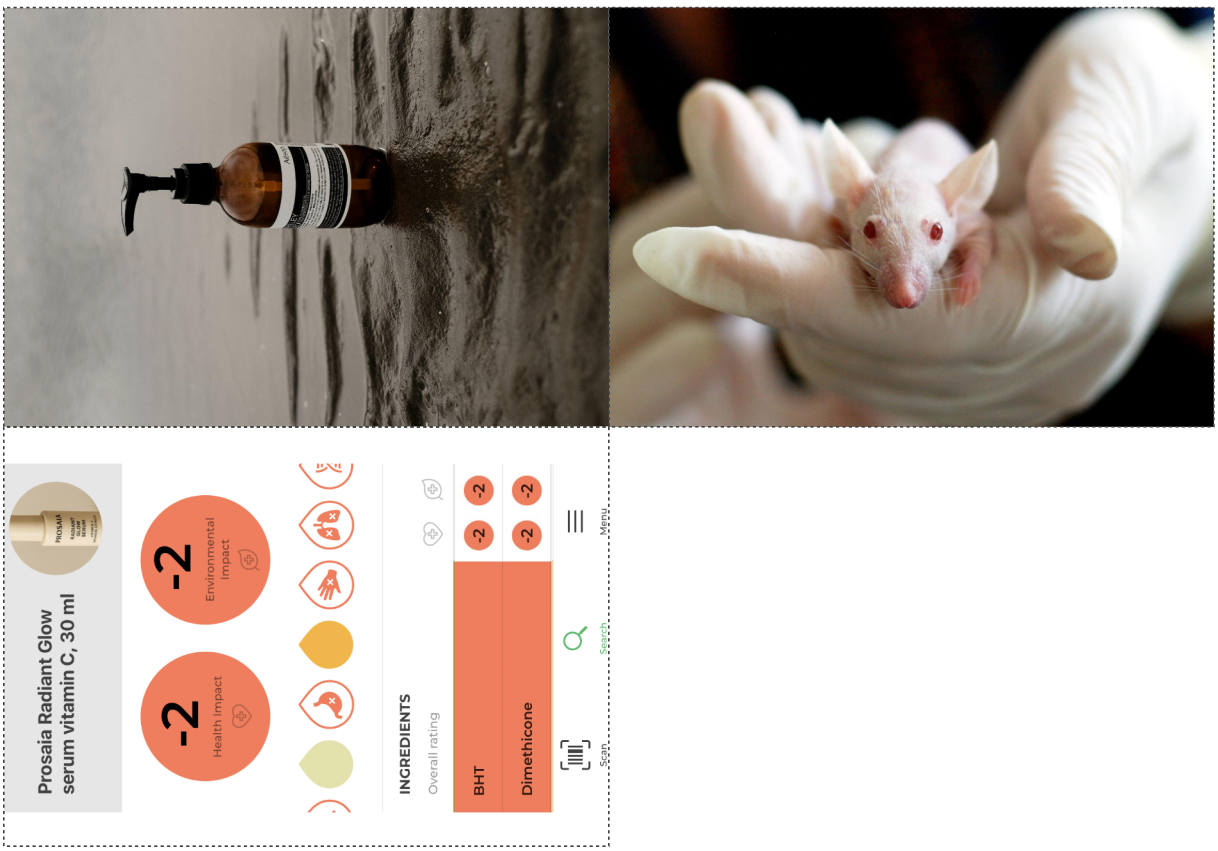
- How could we solve these problems that you assessed as most problematic?
- What is our role?
- Can we as customers do something?

Brainstorm possible solutions to the problems together. Recommendations and suggestions can be found in the Appendix 2.

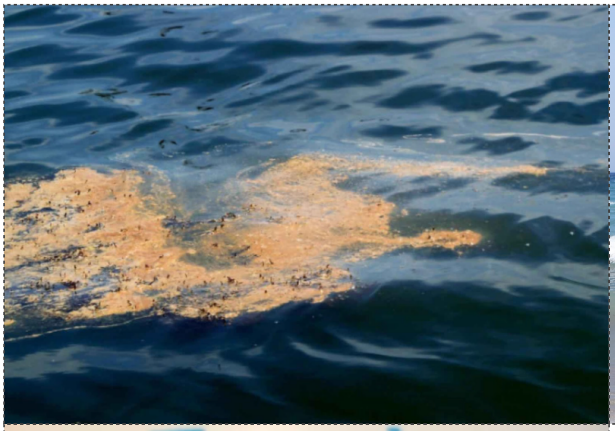
Appendix 1
PICTURES

Set 1.

Set 2.



Set 3.




Fresh
Natural
NATURALLY
GOOD

Set 4.


POLLUTED BY
SINGLE-USE PLASTIC

TEXTS:

Set 1. Extraction of resources

Child Labour

One of the key ingredients in makeup, like eyeshadow, face powder, lipstick, and body gloss, is a mineral called mica. Most mica comes from Madagascar and India, where child labor is often used in the mines. Kids work in dangerous conditions to collect the shiny mineral that gives makeup its sparkle.

“Felicia is a 13-year-old girl who works in a sorting company in Amboasary. She lives with her mother and eight siblings. She explained that she has never attended school. In the sorting company where she works, she does all the sorting tasks adult workers engage in as well. In addition, just like them, she complains about the harshness of her tasks. From Felicia's statements, it is clear that accidently hurting oneself comes with the job: “Sometimes, we hit the mica but it's our fingers that receive the blow” or “Every day we hit the mica and our nails are all damaged”.

Like the other children in the group, she is not in good health; she coughs a lot and talks about her deplorable nutritional situation. Very often, she leaves early to work at the company on an empty stomach and can only eat at night if she can find something to eat. During the day she drinks water to suppress the feeling of hunger: 'If we do not have any food, we only drink water'. As she does not go to school, she works from Monday to Sunday, without a rest, from 7 a.m. to 3 p.mrane, pijem to isté vodo."

Felicia is conscious of the harsh reality of her life and is aware of the fact that things may never improve for her.”

Sources:

https://www.datocms-assets.com/22233/1623490704-child-labour-in-madagascars-mica-sector-terre-des-hommes.pdf

Deforestation caused by palm oil monoculture

Palm oil is everywhere, it's in about half of the packaged stuff you see at the store. Think chocolate, pizza, shampoo, deodorant, toothpaste, and even lipstick. But there's a big problem: growing palm oil means cutting down massive amounts of forests. Every hour, the world loses up to 300 football fields of trees to make space for palm plantations. This destroys the homes of endangered animals like orangutans, Sumatran tigers, and rhinos, pushing them closer to extinction.

“When We Lost the Forest, We Lost Everything. Before our lives were simple, not rich, but enough. Since oil palm came, there is more suffering. I can’t feed my family. I have a baby. I must put food on the table every day... Every day I must figure out how to do this.”

- Leni, May 2018

“A decade and a half ago, lush forests with evergreen fruit-bearing rambutan trees surrounded the home of Leni, a 43-year-old woman and mother of two, in Indonesia. Today, they have little land to farm and no forest in which to forage after the land was cleared to make way for an oil palm plantation.”

Sources:

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https://earth.org/how-palm-oil-contributes-to-environmental-destruction/

https://www.hrw.org/report/2019/09/23/when-we-lost-forest-we-lost-everything/oil-palm-plantations-and-rights-violations

Destruction of the environment caused by crude oil extraction

Crude oil is the raw material from which petroleum products are derived, including gasoline for cars and mineral oil. It might sound surprising, but mineral oil is in tons of beauty products like face creams, foundations, makeup removers, wipes, and even lip balms. The problem? Extracting oil is terrible for the environment. It can lead to pollution, destruction of nature, and even be connected to war, displacement, and political conflicts.

Almost every day, Udengs Eradiri is informed of another oil spill in Bayelsa state, in the Niger Delta. “You just need to take a tour to understand the magnitude of the environmental abuse,” he adds. “[Bayelsa] used to be green, you could go to farm or fish.”

In Bayelsa and other regions, communities have been hit by an environmental disaster. Approximately 40 million litres of oil are spilled annually throughout the Niger Delta, polluting the air, land, and water. Out of Bayelsa’s roughly 2 million residents, around 75% depend on fishing or farming for their livelihoods.

“Those communities are getting involved in other ways of surviving. And that’s why there’s been a lot of upsurge in criminal activities as well as artisan refining, all to survive.”

Sources:

https://journals.sagepub.com/doi/full/10.1177/19427786221084281

https://www.theguardian.com/global-development/2019/dec/06/this-place-used-to-be-green-the-brutal-impact-of-oil-in-the-niger-delta

Set 2. Production

Water use and pollution

Water is one of Earth’s most valuable resources, but we’re using it way too fast. Only 3% of the world’s water is freshwater, and most of that is trapped in glaciers or deep underground, meaning less than 1% is actually available for us to use. With the population growing, water shortages are becoming a huge problem. Already now almost two thirds of the world’s population experience severe water scarcity for at least one month each year.

Cosmetics use a ton of water. Face creams are 60-80% water, lotions can be up to 90%, and shampoos or shower gels are often 95% water. But it's not just the products, water is used at every step, from growing ingredients to processing, cleaning, and packaging. This hidden water use adds up to thousands of liters per product.

Even worse, some of the water used in production gets polluted and released back into the environment. Pesticides from farming and chemicals in beauty products, like surfactants, which are common in shampoos and soaps, can end up polluting rivers and oceans, harming wildlife and ecosystems.

Sources:

https://www.sciencedirect.com/science/article/pii/S235255092200094X

https://www.unicef.org/wash/water-scarcity

https://natrue.org/water-in-cosmetics-a-dive-into-water-free-beauty/

Potentially harmful ingredients used in cosmetics

The European beauty industry is massive - worth a shocking €96 billion in 2023, making it the biggest cosmetics market in the world!

EU laws say that anyone selling beauty products has to make sure they're safe and meet strict regulations. But checking ingredients is a slow and complicated process. Some chemicals in makeup and skincare have been linked to scary stuff like cancer, hormone issues, fertility problems, and allergies.

The EU is way stricter than the U.S. about banning harmful ingredients, 1,641 chemicals are banned in Europe, while the U.S. has only banned 11.

Sometimes brands don't even know their products contain harmful stuff, or the risks haven't been fully proven yet. But in some cases, they do know and hide the truth. One of the biggest scandals was in 2018 when Johnson & Johnson got sued by 22 women who claimed their baby powder gave them ovarian cancer. J&J swore their product was safe, but leaked documents showed they knew it had asbestos in it and kept it a secret. As of 2023, more than 38,000 women with cancer have sued the company.

Sources:

https://www.ctpa.org.uk/eu-and-worldwide

https://cosmeticseurope.eu/cosmetics-industry/understanding-cosmetics-regulation/

https://www.fda.gov/cosmetics/cosmetics-laws-regulations/prohibited-restricted-ingredients-cosmetics

https://www.reuters.com/investigates/special-report/johnsonandjohnson-cancer/

Animal testing

"More than 100 million animals suffer and die in the U.S. every year in cruel chemical, drug, food, and cosmetics tests. Examples of animal tests include forcing mice and rats to inhale toxic fumes, force-feeding dogs pesticides, and applying corrosive chemicals into rabbits' sensitive eyes. Even if a product harms animals, it can still be marketed to consumers. Conversely, just because a product was shown to be safe in animals does not guarantee that it will be safe to use in humans." Some states in the U.S., like California, already prohibited animal testing but in many countries around the world it is still allowed or even required.

In the European Union, selling cosmetic products tested on animals is prohibited. "The message was clear: No animal deserves to suffer and be killed for the sake of lipstick or toothpaste". However, the ban in the EU is not 100% effective. There are some exceptions under which testing on animals is still allowed. Also, it doesn't mean that the product was not tested on animals before the ban came into force.

Sources:

https://www.peta.org/issues/animals-used-for-experimentation/

https://www.peta.org/blog/european-union-cosmetics-testing-ban-reach-loophole/

Greenwashing

You might not have heard the word *greenwashing* before, but you've definitely seen it in action. It's basically when companies try to trick you into thinking they're *super eco-friendly*, even when they're not. They slap words like *natural, organic, biodegradable*, and *eco-friendly* on their products, hoping you'll feel good about buying them. But what do those labels *actually* mean?

More and more people want to buy environmentally-friendly products, and the beauty industry *knows it*. That's why they go all out with green packaging, nature images, and fancy eco-labels. Just to confuse us even more, there are over 200 different eco-labels in the EU alone and more than 450 worldwide.

Brands also love to distract us with "feel-good" campaigns. Ever seen a beauty brand promoting a beach clean-up? Sounds great, right? But what if the biggest source of trash on those beaches is *their own plastic packaging*? They make it look like they care, but really, they're just covering up the bigger problem they *helped create*.

Sources:

https://www.cbi.eu/market-information/natural-ingredients-cosmetics/what-demand

https://ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm

Chemicals entering the body

Have you ever thought about how many different beauty products you use every day?

A study from 2004 found that women use around 12 products daily, men use 6, and teens? *Seventeen*! And that was back in 2008, chances are, the number is even higher now.

But here's the wildest part: a 2009 study in the UK found that the average woman puts 515 *different chemicals* on her body every single day. Not all of them are bad, but some have been linked to serious health issues like cancer, hormone imbalances, fertility problems, and allergies.

The scariest thing? Most of these chemicals haven't been fully tested for their long-term effects. And when multiple chemicals mix together, they can create completely new reactions in the body that scientists still don't fully understand.

Sources:

https://www.ewg.org/research/teen-girls-body-burden-hormone-altering-cosmetics-chemicals

https://www.theguardian.com/us-news/2019/may/23/are-chemicals-in-beauty-products-making-us-ill

https://www.reuters.com/article/us-britain-cosmetics-idUSTRE5AI3M820091119

https://www.ewg.org/news-insights/statement/fda-warns-cosmetics-industry-follow-law-untested-ingredients

Chemicals released into the environment

Ever thought about where your beauty products go after you use them? Every time you rinse off face wash, spit out toothpaste, or swim with sunscreen on, some of those chemicals end up in the environment.

In 2015, researchers looked into whether sunscreen was killing coral reefs and the results were pretty bad. Around 14,000 tons of sunscreen washes into the ocean every year, especially in tourist hotspots like Hawaii and the Caribbean. “At the end of the day, when the tourists had left and the water had calmed, you could see the sunscreen sheen on the surface of the water”.

One of the biggest culprits? Oxybenzone - a chemical in many sunscreens that kills baby coral before it can grow. Without new coral, entire reefs start dying off.

This isn’t just an ocean problem. Over 500 million people rely on coral reefs for food, protection from big waves, and tourism jobs. Reefs that used to be 70-80% alive in the 1970s now have less than 10% living coral left. And if things don’t change, scientists warn that most coral reefs could be gone in the next 30-50 years.

Sources:

https://www.hawaii.edu/news/2021/06/04/coral-reef-survival/

https://www.nytimes.com/2018/05/03/travel/hawaii-sunscreen-ban.html

https://www.hawaiipublicradio.org/news/2019-05-31/how-scientists-discovered-the-link-between-sunscreen-and-coral-reef-death

https://link.springer.com/article/10.1007/s00244-015-0227-7

Set 4. Disposal and Discharge

Waste from packaging

In 2022, people in the EU threw away 16,1 *million tonnes* of plastic, but only 40,7% of it got recycled. That means a lot of it ended up in landfills, oceans, or just scattered in the environment.

And guess what? The beauty industry is a big part of the problem. Most cosmetic products still come in plastic packaging or are made of plastic themselves.

“David Kumordzi is a composer and musician based in Ghana's capital Accra. He spends a lot of his time mobilising people to clean up his country's beaches. The waste Kumordzi and his team collect includes plastics and discarded clothing. "Most of the waste is coming from Europe because we are connected to the Atlantic Ocean. Most of the waste we are seeing around our beaches is not from Ghana." He blamed Europe for the tons of waste constantly being washed ashore.”

Sources:

https://www.dw.com/en/activists-slam-europe-for-dumping-on-africa/a-61315412

https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20221020-1

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Packaging_waste_statistics

http://www.cleanocean.org/cotton-bud-survey.html

Chemicals in WWT

More and more harmful chemicals are being released into the environment through wastewater treatment plants, and it’s causing major problems for aquatic ecosystems and fish populations. It highly depends on the advancement of the technology in a specific plant, however, many common treatment plants aren’t equipped to remove some of the nasty chemicals, like phthalates. In fact, only about 18% of phthalates can be removed under normal conditions.

Even worse, chemicals like PFAS (also known as "forever chemicals") can’t be cleaned out at all and end up getting released right back into our water. Many of these chemicals are endocrine disruptors, meaning they mess with the body’s hormone system.

When fish are exposed to these chemicals, it affects their ability to reproduce. Studies show that these chemicals mess with the number of sex cells in fish and even cause sterility, meaning they can’t reproduce at all.

Sources:

https://www.sciencedirect.com/science/article/pii/S0013935121013359

https://www.mdpi.com/1420-3049/26/22/6966/htm

Microplastics into the environment

Microplastics are tiny plastic particles, usually no bigger than 5mm, and we're using around 145,000 tonnes of them every year in the EU alone!

In cosmetics, you could mostly find them in scrubs and toothpaste or glitter make-up. When we used these products, some of the microplastics ended up in our bodies, and the rest got washed down the drain.

The problem? Most wastewater plants can't filter out these tiny particles, so they end up in rivers and oceans. Then fish and sea creatures swallow them, and guess what? We end up eating the fish that's contaminated with microplastics. Because microplastics act like little sponges, they absorb toxic chemicals and bring them right into our bodies. It's a total cycle of bad news for us and the planet.

"It has been estimated that the average person can ingest up to 5 grams of microplastic a week. Some of the microplastics pass seamlessly through the digestive system and are expelled in faeces, some microplastics are accumulated within bodily organs, and recent research has shown that some pieces cross cell membranes and enter the bloodstream."

In 2023, the EU Commission restricted use of microplastics, there is now a ban on loose glitter and microbeads (microplastics used as exfoliants, meaning scrubs) and further bans will be implemented. This doesn't mean that there will be no more microplastics but it is a step in the right direction.

Sources:

https://echa.europa.eu/sk/hot-topics/microplastics

https://www.theguardian.com/science/2021/sep/22/more-microplastics-in-babies-faeces-than-in-adults-study

Appendix 2.
Solutions with tips for improvement

(Note: Mentioned problems can occur in more than one stage and these are just suggestions or most common occurrences)

1. Extraction of resources

		
https://1.bp.blogspot.com/-1f7pjLLoObY/XTbKaCrAwUI/AAAAAAAAijs/Nd7LRUxzn9UcTceK3CHq6Hxjmq_E6uXJQCLcBGAs/w1200-h630-p-k-no-nu/mica3.png	Greenpeace	pixabay.com
child labour	deforestation caused by palm oil monoculture	destruction of the environment caused by crude oil extraction
It is possible to buy fair-trade mica. In fair-trade, companies pay fair-price to the mine workers. If the adult workers earn enough to support their families, they do not have to send their children into the mines.	Choose sustainable palm oil by looking for RSPO (Roundtable on Sustainable Palm Oil) certification on labels. You can also check the WWF Palm Oil Buyers Scorecard to find brands committed to sourcing palm oil which doesn't contribute to deforestation or environmental harm.	Give preference to products without mineral oil. Try to use less plastic overall, even things like synthetic colourants are made out of oil derivatives.

2. Production

		
unsplash.com	pixabay.com	GreenScan
water use and pollution	animal testing	potentially harmful ingredients used in cosmetics
It is often possible to find solid alternatives to cosmetic products: bar soaps, shampoos, etc or highly concentrated products. Water-free product formulation saves packaging and distribution emissions as well.	According to the law, products sold in the EU should not be tested on animals, hence, avoid ordering cosmetics online from non-EU websites. Support organisations fighting for animal rights, look for vegan products.	Be aware of what you are buying, choose better products, show the producer that you care - they will only produce products that people are buying.

3. Consumption

		
GreenScan	unsplash.com	https://pixnio.com/nature-landscapes/waves/an-oil-slick-from-the-oil-spill#
greenwashing	chemicals entering the body	chemicals released into the environment
Think critically about the claims on the products. Do additional research if necessary. Be familiar with the most common eco certifications and what they mean.	Try to use less products overall, be cautious and mindful – prevent filling up your shelves with many unnecessary products and rather focus on a few, trustful pieces for a minimal skincare routine.	Try to use less products, choose products that are less harming the environment. Follow the time instructions on sunscreen before entering the water or use mechanical protection instead: swimwear or t-shirts with UVblock, hats.

4. Disposal and Discharge

		
https://www.dw.com/en/activists-slam-europe-for-dumping-on-africa/a-61315412	unsplash.com	pixabay.com
waste from packaging	chemicals in WWT	microplastics into the environment
Choose other packaging than plastic, (glass, paper, alu). Try to use less products overall, when possible opt for refill options.	Choose products that are safe for the environment, don't use more than the recommended amount. For most cleaning products, it is usually sufficient to use ⅔ of the recommended amount.	Choose products without microplastics, apps such as GreenScan can help you with this.

Greenwashing detective

INTRO

Not all "eco-friendly" products are as green as they seem! In this activity, you'll look at product images and their flashy, persuasive commercials - just like real consumers do. Based on what you see, you'll decide which product seems better for people and the planet.
But here's the catch: some claims might be tricking you with greenwashing! We'll uncover the truth behind the nature filled images.

Aim: Participants experience and will understand different greenwashing strategies.

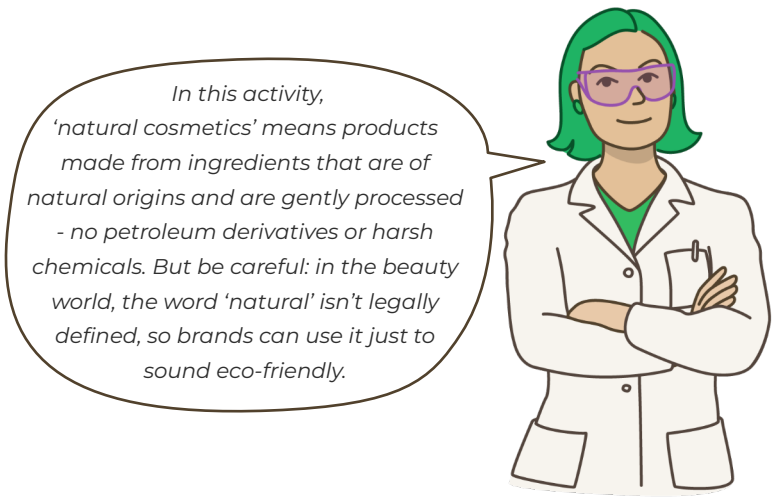
Time: 30 minutes

Space: Indoors

Tools:
- ▹ 4 flipchart papers
- ▹ markers
- ▹ printed worksheets 1-4 (appendix)

MOTIVATION

Facilitate a discussion on certifications and labels found on cosmetic products. Ask participants which certifications they are familiar with. They should already understand the basic differences between natural and conventional cosmetics. Use the conversation to see how much they know about industry labels and standards.



CORE

Divide participants into four groups.

Provide each group with one worksheet corresponding to a specific product, along with a flipchart and markers.

- Groups with Worksheets 1 and 2 will focus on Eco-Lux Shampoo.
- Groups with Worksheets 3 and 4 will focus on Pure Harmony Shampoo.

Within 5 minutes, each group will gather as much information as possible about their assigned product using comics or product descriptions, documenting key points on their flipcharts.

Merge groups working on the same product to exchange findings and prepare a presentation for the other product group. Given time is 8 minutes.

Each merged group will present their insights to the opposing product group within 2 minutes.

Participants will vote on which product is more sustainable and engage in a discussion on the reasoning behind their choices.

CONCLUSION

Brainstorm or brainwrite what is Greenwashing and where do you see it on these products.

While Eco-Luxe shampoo may appear to be a sustainable and ethical choice, it is important to be aware of the potential for greenwashing. By understanding the signs of greenwashing, consumers can make more informed decisions about the products they purchase.

Greenwashing Indicators in Eco-Luxe shampoo:

- **Vague and Misleading Claims:** The commercial uses phrases like "lush, vibrant rainforest" and "pristine mountain springs" to evoke an image of purity and sustainability but fails to provide specific information about the source of the ingredients.
- **Focus on Image Over Substance:** The commercial highlights the beauty of the rainforest and the woman's shiny hair without offering concrete evidence of the shampoo's effectiveness or environmental benefits.
- **Use of Buzzwords:** Terms like "climate conscious," "zero waste," and "cruelty-free" are used to create an impression of ethical and sustainable practices, yet no details are provided to substantiate these claims.
- **Inclusion of Harmful Ingredients:** While the commercial promotes the product as "paraben-free," it does not disclose the presence of other potentially harmful ingredients, such as BHT, SLS which may have negative effects on human health.

Indicators why Pure Harmony might be considered more health and environmentally friendly:

- **Real independent certification:** NATRUE (natural and organic ingredients) FairTrade (decent working conditions and a fairer deal for farmers and workers), Vegan (free of ingredients made of or by animals)
- **Source:** Only plant-based ingredients and the source of ingredients is listed.

Infobox

Key takeaway:

- Be a critical consumer: Don't blindly trust marketing claims.
  - **Look for buzzwords:** "Eco-friendly," "natural," "green," "sustainable" are often used without clear definitions.
  - **Be skeptical of vague claims:** "Reduces your carbon footprint" – how much? "Made with natural ingredients" – what percentage?
  - **Hidden trade-offs:** A product might be recyclable but made with harmful chemicals.
  - **"Green" features that are irrelevant:** Claiming a product is "CFC-free" when CFCs were banned decades ago.
  - **Lack of Transparency and Evidence:**
    - ◇ No third-party certifications: Independent certifications (like Fair Trade) provide more credibility on extraction or production, but doesn´t mean that the product has zero impact on environment or health.
    - ◇ No clear explanation of their environmental impact: How are they reducing their carbon footprint? Where do their materials come from?
    - ◇ Creating fake certifications: Be wary of labels that look official but are made up by the company, as for example these:

https://eyeondesign.aiga.org/cruelty-free-dont-believe-all-the-cute-bunny-labels/

- Do your research: Look beyond the advertising and investigate the company's actual practices.
  - **Focus on one small "green" aspect:** A company might highlight recyclable packaging while ignoring its manufacturing processes that heavily pollute.
  - **"Greening" one product while the rest of the company isn't:** A single "eco-friendly" product line doesn't make an entire company sustainable.
- **Support truly sustainable companies:** Choose companies that are transparent about their environmental impact and have verifiable certifications.

MORE INFORMATION

https://www.europarl.europa.eu/topics/en/article/20240111STO16722/stopping-greenwashing-how-the-eu-regulates-green-claims

https://earth.org/all-you-need-to-know-about-the-eus-new-greenwashing-directive/

Green claim directive

https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2023/0085(COD)&l=en

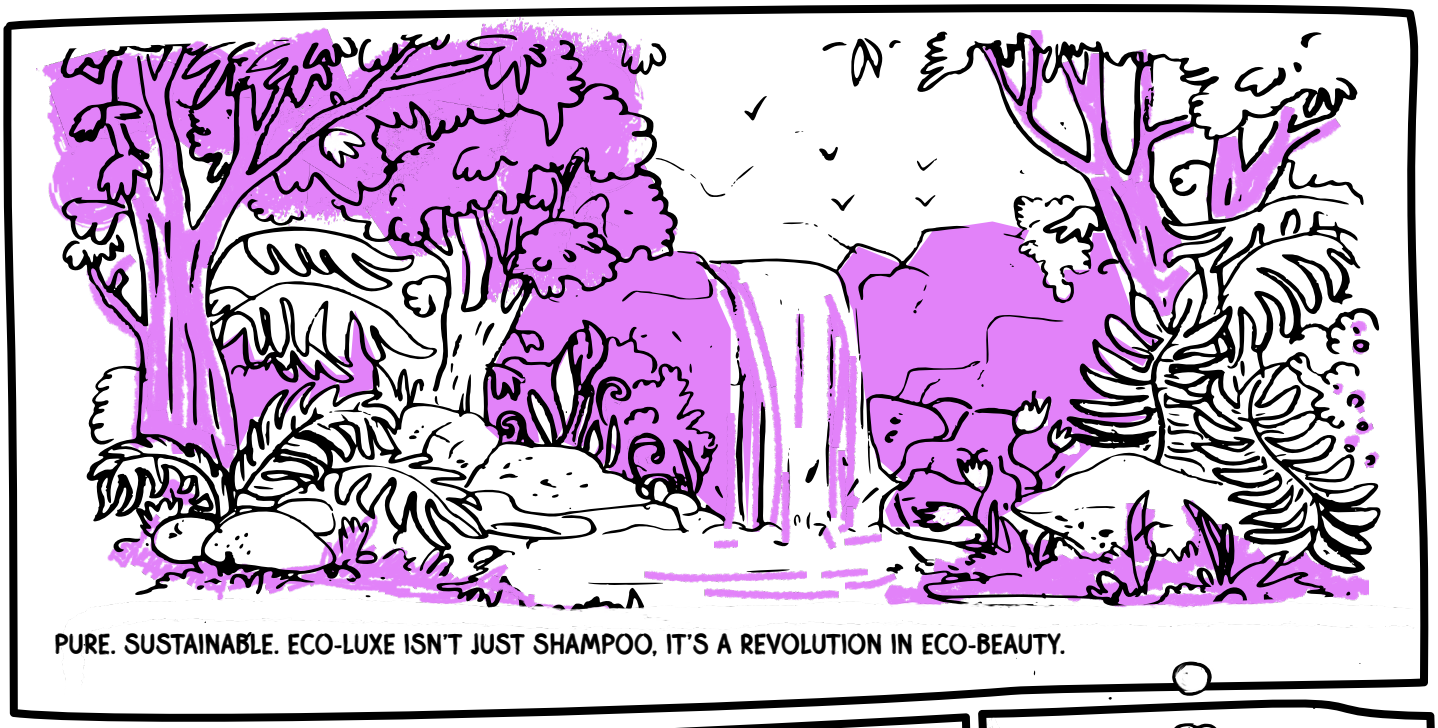
https://www.europarl.europa.eu/news/en/press-room/20240112IPR16772/meps-adopt-new-law-banning-greenwashing-and-misleading-product-information

Let participants revise the commercial of Eco-Luxe shampoo. Here's how to make it better:

✅ Real Talk on Ingredients – provide more information about the source of the ingredients and the manufacturing process to increase transparency.

✅ Actual Benefits – Instead of just saying "pure & nourishing" (whatever that even means), focus on the shampoo's actual benefits, rather than relying on vague and misleading claims.

Appendix
Worksheet 1.



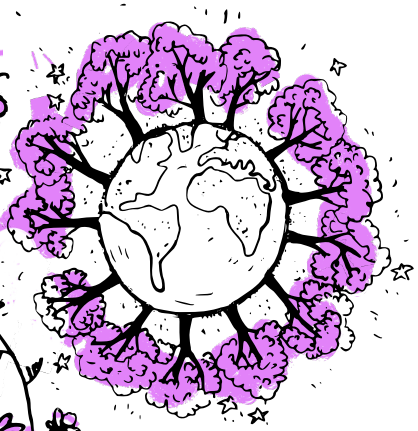
PURE. SUSTAINABLE. ECO-LUXE ISN'T JUST SHAMPOO, IT'S A REVOLUTION IN ECO-BEAUTY.

INFUSED WITH SUSTAINABLY WILD-HARVESTED BOTANICALS AND 100% ETHICALLY SOURCED INGREDIENTS, ECO-LUXE GIVES YOU THE GLOW-UP YOU DESERVE, WITHOUT HARMING THE PLANET.

NO TOXINS. JUST PURE GOODNESS IN A 100% BIODEGRADABLE BOTTLE. BECAUSE YOUR HAIR DESERVES LUXURY WITHOUT THE GUILT.

EVERY WASH = A WIN FOR YOU AND THE PLANET. ECO-LUXE IS CLIMATE-CONSCIOUS, WATER-POSITIVE, AND DESIGNED FOR A ZERO-WASTE FUTURE.

ECO-LUXE



ECO-LUXE:
BECAUSE SAVING THE PLANET SHOULD LOOK THIS GOOD
🌍✨💚

Appendix
Worksheet 2.

Indulge your senses with Eco-Luxe Shampoo, a harmonious blend of nature's finest ingredients mixed with mountain fresh water. Crafted with care and sustainability in mind, this luxurious formula nourishes and revitalizes your hair, leaving it soft, shiny, and healthy.

Ingredients:

Water, Coconut Oil, Argan Oil, Aloe Vera, Essential Oils of Lavender and Rosemary, citric acid, glycerin, hydrolyzed wheat protein, Panthenol, SLS, xantan gum, urtica dioica leaf extract, BHT, Parfum.

How to use:

Apply a generous amount of Eco-Luxe shampoo to wet hair. Massage gently. Rinse thoroughly. Repeat as needed.

For best results: Use Eco-Luxe conditioner to follow up your shampoo.

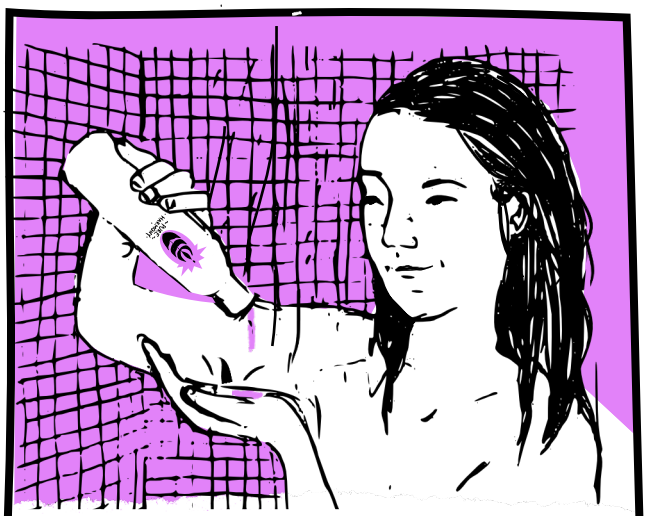
Storage:

Store in a cool, dry place. Avoid direct sunlight.

Disclaimer:

This product is not intended to diagnose, treat, cure, or prevent any disease. If you experience any adverse reactions, discontinue use and consult a healthcare professional.

Appendix
Worksheet 3.



NO GIMMICKS. NO FAKE PROMISES. JUST SHAMPOO THAT ACTUALLY WORKS

MADE WITH INGREDIENTS THAT DO THEIR JOB - HYDRATING, STRENGTHENING, AND KEEPING YOUR HAIR FRESH WITHOUT THE HARSH STUFF.

COCONUT OIL FOR MOISTURE. ARGAN OIL FOR STRENGTH. ALOE TO SOOTHE. LAVENDER AND ROSEMARY BECAUSE THEY JUST SMELL THAT GOOD.

SOFT, HEALTHY HAIR WITHOUT THE B.S. THAT'S THE VIBE.

~PURE~
HARMONY

PURE HARMONY SHAMPOO. SIMPLE. EFFECTIVE. FOR HAIR THAT JUST GETS IT.

Appendix
Worksheet 4.

Experience the harmony of nature with Pure Harmony Shampoo. Crafted with a blend of the finest natural ingredients, this gentle yet effective formula cleanses and nourishes your hair, leaving it soft, shiny, and healthy.

Ingredients:

Water, Coconut oil, Argan Oil, Aleo Vera, Essential Oils of Lavender and Rosemary*

* Organic Coconut Oil: Cold-pressed coconut oil from sustainably farmed coconuts.

Fair Trade Argan Oil: Ethically sourced argan oil from cooperatives in Morocco.

Wildcrafted Aloe Vera: Hand-harvested aloe vera from the desert.

Essential Oils of Lavender and Rosemary: Organic essential oils distilled from lavender and rosemary plants.

How to Use:

Apply a small amount of Pure Harmony shampoo to wet hair. Massage gently.

Rinse thoroughly. Repeat as needed.

Storage:

Store in a cool, dry place. Avoid direct sunlight.

Disclaimer:

This product is not intended to diagnose, treat, cure, or prevent any disease. If you experience any adverse reactions, discontinue use and consult a healthcare professional.

Experiment

Water Filtration

INTRO

Imagine you're out in the wild with only dirty water, how would you make it clean? In this hands-on experiment, you'll build your own water filtration system! Exclaimer: not for drinking.

Aim:
- To simulate a simple water filtration process and observe the effects.
- Discuss the importance of clean water.

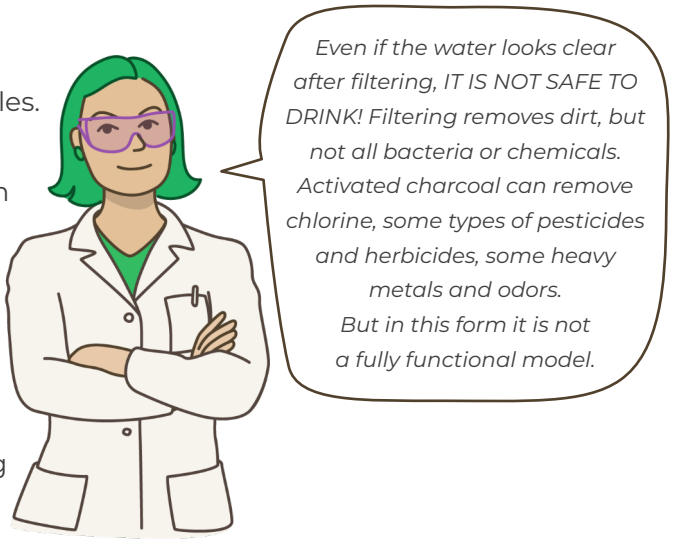
Time: 40 minutes

Place: Indoors or outdoors

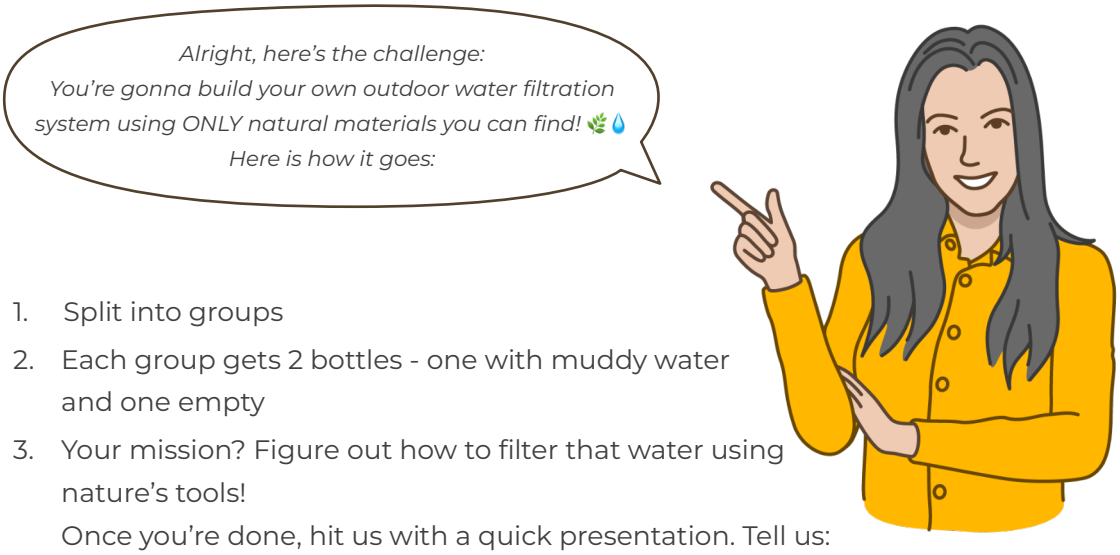
Tools:
- 2 clear plastic bottles (2-liter)
- gravel
- sand
- activated charcoal
- coffee filters or gauze (you can use also non-woven fabric or perlan)
- rubber bands
- water container
- water pollution material (e.g. dust, dirt, food coloring)

CORE

1. Prepare the Filter:
   - Cut the bottom off one of the plastic bottles.
   - Place a coffee filter or piece of gauze over the mouth of the bottle and secure it with a rubber band.
   - Add layers of gravel, sand, and activated charcoal to the filter, ensuring each layer is distinct.
2. Create Muddy Water:
   - Mix a small amount of dirt or food coloring into a container of water to simulate polluted water.



3. Filter the Water:
   - Slowly pour the muddy water into the filter.
   - Collect the filtered water in the second plastic bottle.
4. Observe and Compare:
   - Compare the color and clarity of the filtered water to the original muddy water.



1. Split into groups
2. Each group gets 2 bottles - one with muddy water and one empty
3. Your mission? Figure out how to filter that water using nature's tools!

Once you're done, hit us with a quick presentation. Tell us:

- What natural materials you used
- How your system works
- Was it actually effective?

Let's see who can make the clearest water! 🚀💡

CONCLUSION

Discuss:

- What happened to the muddy water after it passed through the filter paper?
- Why did the water become clearer?
- What role did the filter paper and other layers play in the filtration process?
- Why is it important to purify water?
- Can you think of other ways to purify water?
- How does this experiment relate to real-world water purification processes?

Alternatives:

- Prepare the filtration system before the activity. Participants will just observe the filtration process and discuss it.
- For better observation of the effect of the different filter materials (gravel, sand and activated carbon), separate them into several bottles and observe the water after each filtration.

Extra Experiments to Level Up the Water Filtration Game

If you want to take your participants' water purification skills to the next level, you can add these further experiments:

- **Water Quality Check:** Use pH strips or a conductivity meter to test how clean your water is before and after filtration. Drinking water should have a pH between 6.5 and 9.5.
- **Material Comparison:** Test different natural and household materials: cotton balls, wool, newspaper and see which one filters best.
- **DIY Distillation:** Try evaporating and condensing water to purify it - simple but effective.
- **Chlorination:** Add a few drops of bleach to disinfect the water.
- **UV Power:** Let sunlight or a UV light disinfect the water. To prove the disinfection, place water samples in dishes with agar jelly and use a microscope to observe bacteria before and after exposure.
- **Full Water Test:** Use pH test strips or a full water quality kit (can be ordered online) to check for chlorine, acidity, and other key factors available and described in the kit in the water before and after filtration. See which factors were affected by filtration and which not.

Experiment

Bacteria in makeup brushes

INTRO

Think your makeup brushes are clean? Think again! In this eye-opening experiment, we're diving into the hidden world of bacteria living on your everyday beauty tools. Using lab techniques, we'll test makeup brushes for germs and discover just how much bacteria builds up over time.

Aim: Observe (naked eye or with a microscope) the colonies of bacteria present in used face brushes and sponges.

Time:
- ▸ 45 minutes for the experiment
- ▸ + a few days for bacteria growth

Place: Indoors

Tools:
- ▹ Small plastic or glass petri dishes
- ▹ Nutrient agar - agar culture medium (self-made or ordered from an online shop)
- ▹ Used face brushes and sponges
- ▹ Latex gloves
- ▹ Alcohol (to sterilise the petri dishes)
- ▹ Microscope (not necessary if doing only naked eye observation)
- ▹ Phone or tablet for researching bacteria types (optional)

PREPARATION

Ask the participants to bring used makeup sponges or brushes for face and makeup. Divide them into pairs or small groups so that each group has at least 1-2 brushes/ sponges.

Together prepare a nutrient agar jelly. If bought online, follow the instructions on the package of the ordered nutrient agar.

It is also possible to make a self-made nutrient agar (this is a homemade recipe rather than a professional setup):

For 1 litre of nutrient agar jelly, you will need:

- 1 litre of boiled or distilled water

- ca. 22 g or 2 stock cubes

- 10 g agar (agar powder is used as a natural thickener and gelling agent, it can be purchased from online stores or some shops).

Process:

1. Bring 1 liter of water / distilled water to a boil.
2. Add the stock cubes and continue boiling until they are fully dissolved.
3. Reduce the heat (do not boil) and add the agar. Stir continuously until the agar is fully dissolved, making sure no lumps remain.
4. Allow the solution to cool to about 50 °C, then pour into sterilized Petri dishes. Let it set until the jelly has completely solidified.

MOTIVTION

Ask participants how often they clean the tools they use on their face. Ask them to guess how many colonies of bacteria will show up in the experiment, write the guesses on the board.

CORE

Use sterile gloves throughout the procedure.

1. Press the sponge or brush into the prepared jelly several times.
2. Immediately seal and label (name, date) the petri dish.
3. Place the petri dishes in a warm (more than 20°C, ideally 30°C - but not directly in the sun), sterile environment.
4. Prepare one control sample: a Petri dish containing only nutrient agar jelly, without touching it with the brush. Label it and store it alongside the other samples.
5. Clean the sponge or brush thoroughly from agar solution residues after pressing it in.
6. Wait at least 48 hours, then observe (naked eye or/and with a microscope) and record the number of bacterial colonies.

V ideálnom prípade prebieha pozorovanie počas niekoľkých dní.

CONCLUSION

Compare the amount and type of bacteria in the petri dishes. What bacteria are likely to be present?

It is possible to research on the internet which type of bacteria is present, alternatively use GoogleLens for guess-identification.

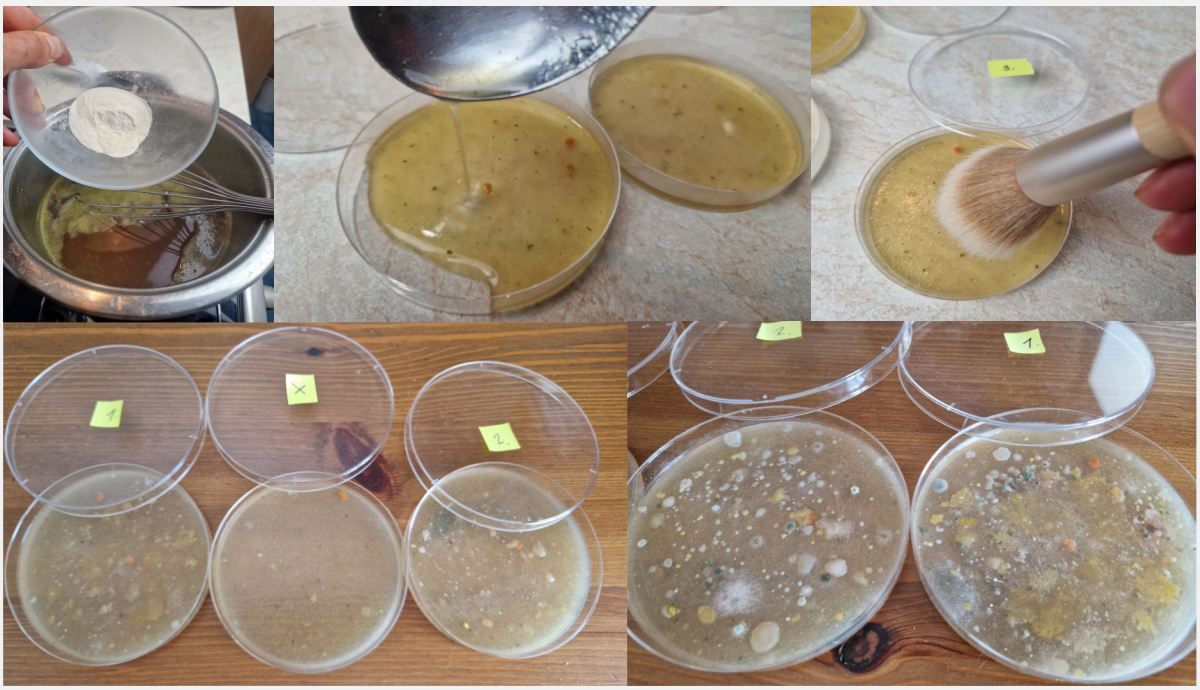
After the experiment, make a joint summary of the results and discuss what options exist to minimize the amount of bacteria.

IMPORTANT! SAFELY DISPOSE OF THE JELLY:

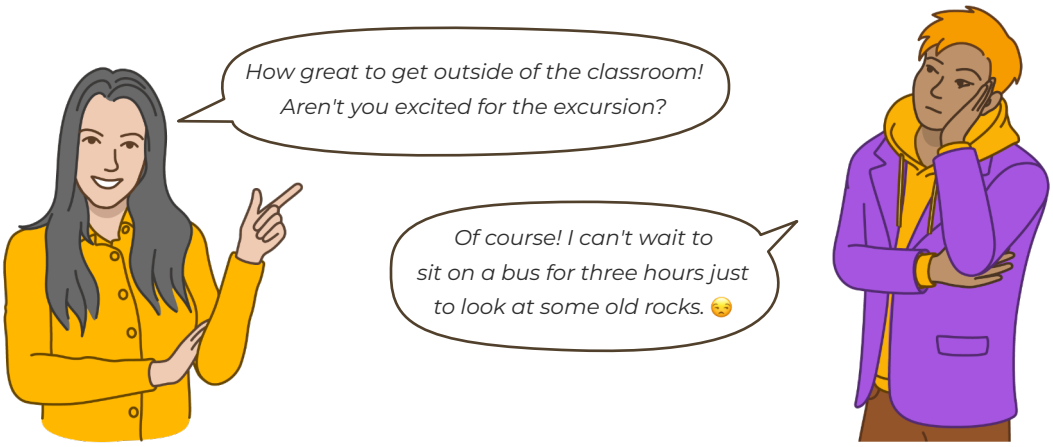
1. Sterilise the contents:
   ▶ Put on latex gloves.
   ▶ Cover the agar in the dish with 70% alcohol.
   ▶ Close the dish with its lid and leave it for at least 30 minutes.
2. Dispose:
   ▶ Option A - dispose of everything: Place the sealed dish into a plastic bag or sealable container. Dispose of it in mixed municipal waste.
   ▶ Option B - keep the petri dishes: Carefully tip the agar jelly into a plastic bag or sealable container. Dispose of it in mixed municipal waste.
3. Clean the petri dishes (only if you chose option B in the previous step):
   ▶ Wash with hot water and detergent.
   ▶ Rinse with alcohol.
   ▶ If it's a glass dish, ideally sterilise further by placing it in a hot oven or by boiling for 15–30 minutes.

And / or always follow your organisation's internal rules for handling biological material as well.

Appendix
Process and results



How to prepare a good excursion?



INTRO

Tired of sitting at a desk? It's time to break free and take learning on the move! An excursion is all about exploring, discovering, and seeing things from a whole new perspective - outside the classroom!
Whether we're diving into nature, uncovering hidden gems in the city, or visiting a cool place, a trip will make learning feel like an adventure. No textbooks, no whiteboards - just real experiences, fresh air, and maybe even a little fun along the way!

Aim:
- To verify and supplement the knowledge acquired at school directly in the field or in a real environment.
- To learn through personal experience.

Note: Excursions should not be just a 'day out of the classroom' - participants should be active on the field trip. Their curiosity can be encouraged by well-chosen methods that need to be carefully planned.

PREPARATION

First, as an educator, you should consider the following questions:

1. **What is your goal?** What should young people learn or take away from the excursion?
2. **Where should you go?** What locations best support the learning objectives?
3. **Who will guide the excursion?** Who will provide explanations or lead activities?
4. **What should participants know beforehand?** What preparation or background knowledge is necessary?

5. **How can participants share what they've learned?** What methods can they use to reflect and communicate their experiences?

After addressing these key questions, prepare some extra activities for:

- **Motivation phase** - before going anywhere prepare some activities to introduce the main topic of the excursion
- **Icebreaker activities** - use to energise the group and get them comfortable
- **Teambuilding (can be also done during the journey)** - activities that help participants improve teamwork, fun activities to entertain during the journey to the excursion place
- **Activities for focused listening** - encourage active listening and engagement of participants during lectures or other activities (e.g. worksheets).
- **Knowledge transfer activities** - reinforce learning by having participants share their knowledge through peer education, social media posts, videos, or creative presentations.

Preparing these activities is optional. Knowing your group, assess which activities work best.

MOTIVATION (before the excursion)

Activities for the motivation phase

- **Online quiz (e.g. Kahoot!)** - an introductory fun online quiz focusing on the field trip topic.
- **Quick team quiz ('pub quiz')** - a short fun quiz for small teams or individuals.

Icebreaker activities ('icebreakers')

- **Line up by...** - participants line up by a chosen criterion that may be related to the field trip topic.
- **True or false** - everyone writes 3 things about themselves (1 lie and 2 truths) on a sticky note, sticks it to their chest and the others try to guess what is true and what is a lie.

CORE (during the excursion)

Activities for teambuilding:

- **Human knot:** Team members stand in a circle while each person grabs the hand of someone across from them. The goal is to untangle the "human knot" without letting go of hands.
- **What do we have in common?:** participants should find 5 things they share in common
- **Lost on a desert island:** each participant shares one item they would bring along with them and why.

Activities for focused listening:

- Just attending an excursion isn't the main aim, the participants should take an active part in activities and listen to lectures. This can be encouraged by worksheets that participants need to fill in during the excursion. Worksheets should be fun. For example worksheets look at excursion plans in this toolkit. If the lecturer of the excursion doesn't cover all the answers, participants should be encouraged to ask questions.

CONCLUSION (after the excursion)

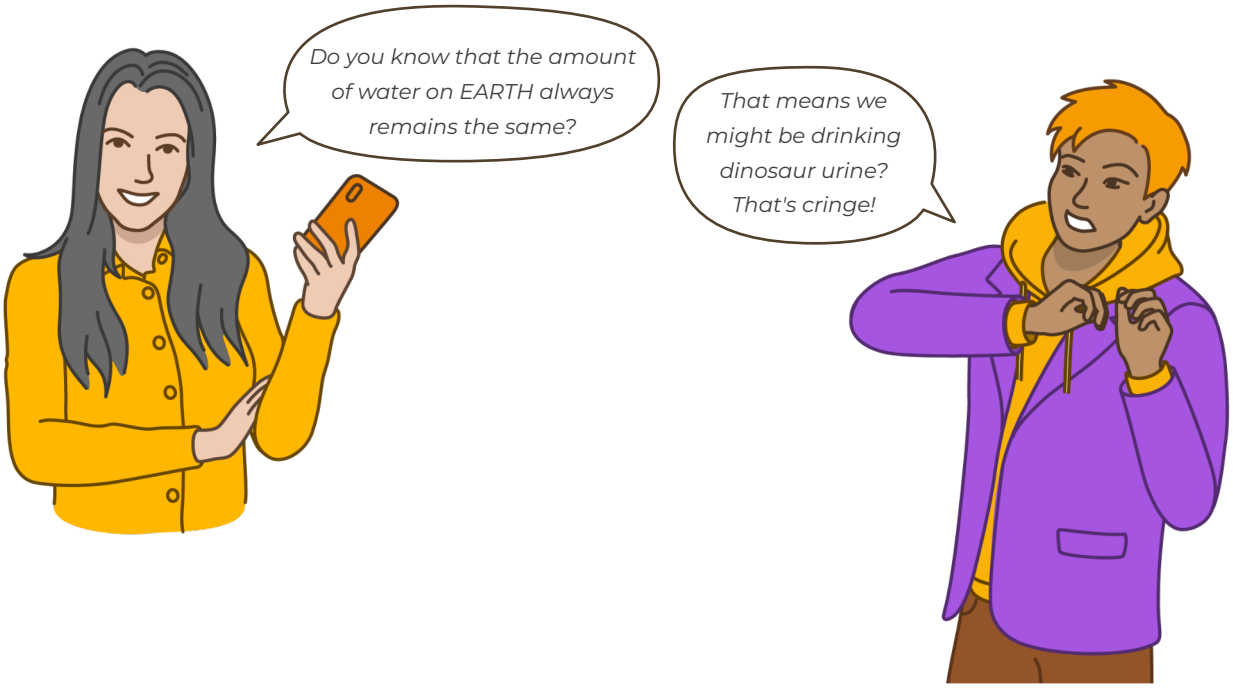
Activities for knowledge transfer:

- **Peer education:** participants prepare a presentation and present what they learned to other students/classes/clubs/etc
- **(fictional) Social media post:** participants create a (fictional) social media post specifying what new and surprising things they learned and what they liked the most
- **Videos:** participants create a video about 1 interesting thing they saw on the excursion

Waste Water Treatment Plant Visit

INTRO

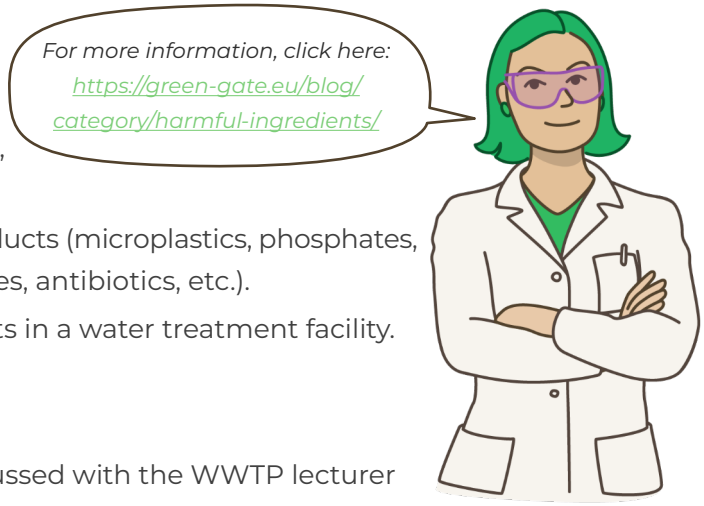
What if the water you flush today ends up in your tea tomorrow? Treatment plants can handle a lot, but not everything - microplastics, phosphates and chemicals from cosmetics, cleaning products and pharmaceuticals often end up back in rivers and then in drinking water. This excursion will show what the plant can and cannot capture and - most importantly - what each of us can change to make the water we use really clean.



Aim:
- Understand how wastewater is treated and purified before being released back to the environment.
- Explore the impact of cosmetics and cleaning products on water pollution.
- Learn about ways to reduce harmful waste in household wastewater.

Tools: ▹ printed worksheet (appendix) for each participant

MOTIVATION



- Discuss how cosmetics, cleaning products but also medication and supplements enter water systems (e.g., washing hands, showering, doing laundry, consuming).
- Explain common pollutants in these products (microplastics, phosphates, parabens, synthetic fragrances, hormones, antibiotics, etc.).
- Predict what happens to these pollutants in a water treatment facility.

EXCURSION SCHEDULE

- The proposed timetable should be discussed with the WWTP lecturer and adjusted according to his suggestions.
- Prior to the start of the excursion, distribute a printed worksheet (appendix) to each participant.

1. **Arrival & Introduction (15 min)**

- Welcome by the plant staff.
- Brief explanation of the plant's role in cleaning wastewater.
- Safety instructions to participants.

2. **Tour of the Water Treatment Process (60 min)**

- **Step 1: Screening & Filtration** – Large debris (plastics, wipes, etc.) removal.
- **Step 2: Primary Treatment** – Separation of solid waste (sludge) from liquid waste.
- **Step 3: Secondary Treatment** – Bacteria break down organic matter.
- **Step 4: Tertiary Treatment** – Removal of some chemicals, toxins, or partiall microplastics.
- **Step 5:** Discharge & Reuse – Cleaned water is discharged.

3. **Q&A time (30 min)**

- Students ask prepared questions from the worksheet in Appendix and discuss findings.

4. **Reflection Activity (15 min)**

- Group discussion on how to reduce cosmetic and cleaning product pollution at home.

FOLLOW-UP ACTIVITIES

- **Reflection Writing:** What surprised you? Is there any plastic in our cosmetics products? What happens to microplastic when you rinse your make-up or shampoo? Is water from WWP really clean? Is there anything that you will change about your habits?
- **Research Alternative Products:** Clean "swap" -find eco-friendly alternatives for common cosmetics and cleaners, Compare common cosmetic or cleaning product with a eco- friendly alternative - "What a difference!"

- **Awareness Campaign:** Create posters or social media content about reducing water pollution.
- **Research project:** Prepare a model of a water filtration station - you can be inspired by the activity *Water Filtration* from this toolkit.

Appendix
Worksheet for participants

Hey hey! 👋 While you're cruisin' through the tour, keep those ears wide open and try to catch the answers to a few lil' questions below. 🕵️ If your brain's like “uhhh… no clue,” don’t stress - there’ll be a quick Q&A at the end of the tour where you can ask for more answers and anything else you are curious about. 💬✨

What Happens to Water After It Goes Down the Drain? 🚰🌍

- How much dirty water gets treated every day? 💧⚙️

- What happens to all the solid waste filtered out of the water at the plant? 🗑️♻️

- What kind of chemicals are removed from wastewater? 🧪🚫

- Which chemicals is it not possible to remove? 🤔🧪

How Do Beauty & Cleaning Products Affect Water? 🛁🌊

- Can water treatment plants remove microplastics? 🤔🌱

- What happens to shampoos, soaps, and detergents after they go down the drain? 🚿🔄

- Why are phosphates in detergents bad for the environment? 😬🌿

- What simple things can we do at home to help keep water clean? 🏡💙

Bonus Question: 💡 What’s one small habit change that can make a big impact on water pollution? 🌍✨

Draw the wastewater treatment process on the backside:

Natural cosmetics producer visit

INTRO

Ever wondered how natural skincare products are made? Get ready for an exclusive behind-the-scenes tour of a real natural cosmetics manufacturing plant!
You'll see how fresh ingredients are turned into awesome skincare and beauty products and you will learn what makes the difference between natural and standard cosmetics.

Aim:
- Learn how natural cosmetics are made.
- Understand the difference between natural and conventional cosmetics.
- Discover how ingredients impact human health and the environment.
- Explore sustainable packaging and eco-friendly production practices.

Tools: ▹ printed worksheet (appendix 1.) for each participant

MOTIVATION

In this activity, 'natural cosmetics' means products made from ingredients that are of natural origins and are gently processed - no petroleum derivatives or harsh chemicals. But be careful: in the beauty world, the word 'natural' isn't legally defined, so brands can use it just to sound eco-friendly.

1. **Discussion:**
- What ingredients are found in the cosmetics we use every day?
- How do synthetic chemicals impact our health and contribute to water pollution?
- What should "natural" cosmetics mean?

2. **Task for at home:**
- Participants check the ingredient list of their own cosmetics and identify potentially harmful substances. For example:
- Parabens (ethylparaben, butylparaben, isobutylparaben, isopropylparaben, methylparaben and propylparaben)
- Phthalates (found in fragrance)
- BHT
- Microplastics

You can also use the GreenScan app to identify ingredients. For more information on potentially harmful substances, please visit: https://green-gate.eu/blog/category/harmful-ingredients/.

EXCURSION SCHEDULE

- The proposed schedule should be discussed with the producer and adjusted according to his/her suggestions.
- Before the start of the excursion, distribute a printed worksheet (in appendix 1) to each participant.

1. **Welcome & Introduction (15 min)**

- Welcome by the plant staff.
- Safety instructions to participants.
- Presentation on the principles of natural cosmetics (sustainability, skin health, eco-friendly production).
- Discussion on certifications (organic, cruelty-free, zero-waste). Which certification the producer has or doesn't have and why.

2. **Full Tour (60 min)**

- **Step 1: Ingredient Sourcing** – Where do natural ingredients come from?
- **Step 2: Production Process** – Mixing, extracting, packaging.
- **Step 3: Sustainability Practices** – How they reduce waste and carbon footprint.

3. **Q&A & Discussion (30 min)**

- Why do some cosmetics have harmful chemicals?
- How does packaging affect the environment?
- What should consumers look for when choosing cosmetics?

Post-Visit Activities (these activities can be done back in the classroom/workshop room to reflect on the excursion):

- **Reflection Writing:** "What surprised you about natural cosmetics?"
- **Campaign Project:** Create a poster or video educating people about choosing healthier, eco-friendly cosmetics.
- **DIY Activity:** Create your own DIY natural product (e.g., deodorant, lotion, or lip balm). https://green-gate.eu/blog/category/diy-tutorials/
- **Product Comparison:** Analyze a natural vs. conventional product (ingredients, impact).

Appendix 1.
Worksheet for participants

Hey hey! 👋 While you're cruisin' through the tour, keep those ears wide open and try to catch the answers to a few lil' questions below. 🕵️ If your brain's like “uhhh... no clue,” don’t stress - there’ll be a quick Q&A at the end of the tour where you can ask for more answers and anything else you are curious about. 💬✨

General Questions for the Manufacturer:

- When a product says it's 'natural' - what does that even mean?" 🌿🤔

- What’s the deal with sketchy ingredients in cosmetics? Why are they even in there?" 😳💄

- How are beauty brands trying to be more eco-friendly and not wreck the planet?" 🌍💅

Are Your Cosmetic Products Safe for You & the Planet?

- What are some ingredients in makeup and skincare that might not be the best for you? 🚨

- How do these ingredients affect the environment? 🌱💦

- How can you choose beauty products that are better for your health and the planet? ✅✨

- Why does eco-friendly packaging matter, and how does it make a difference?