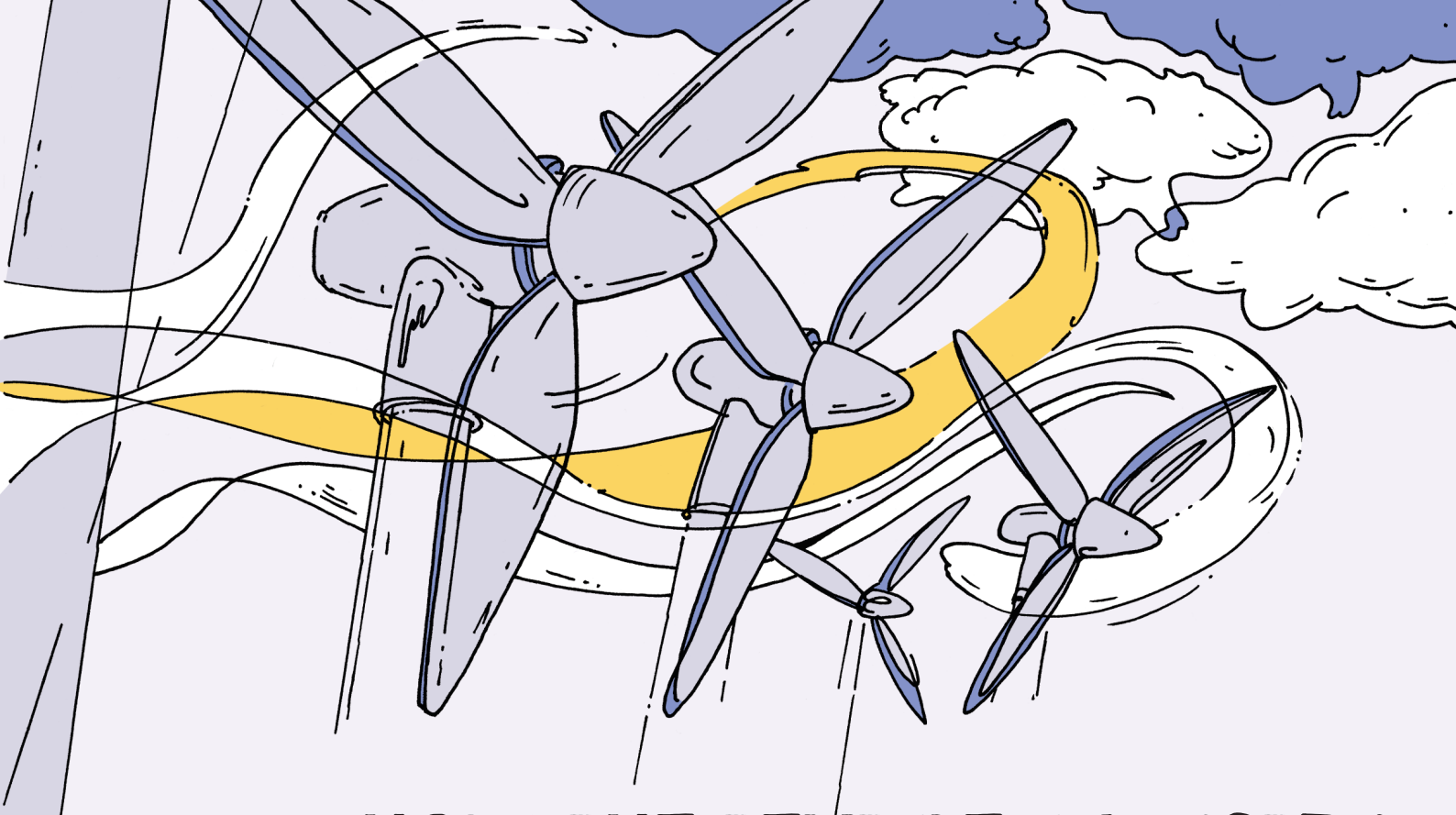
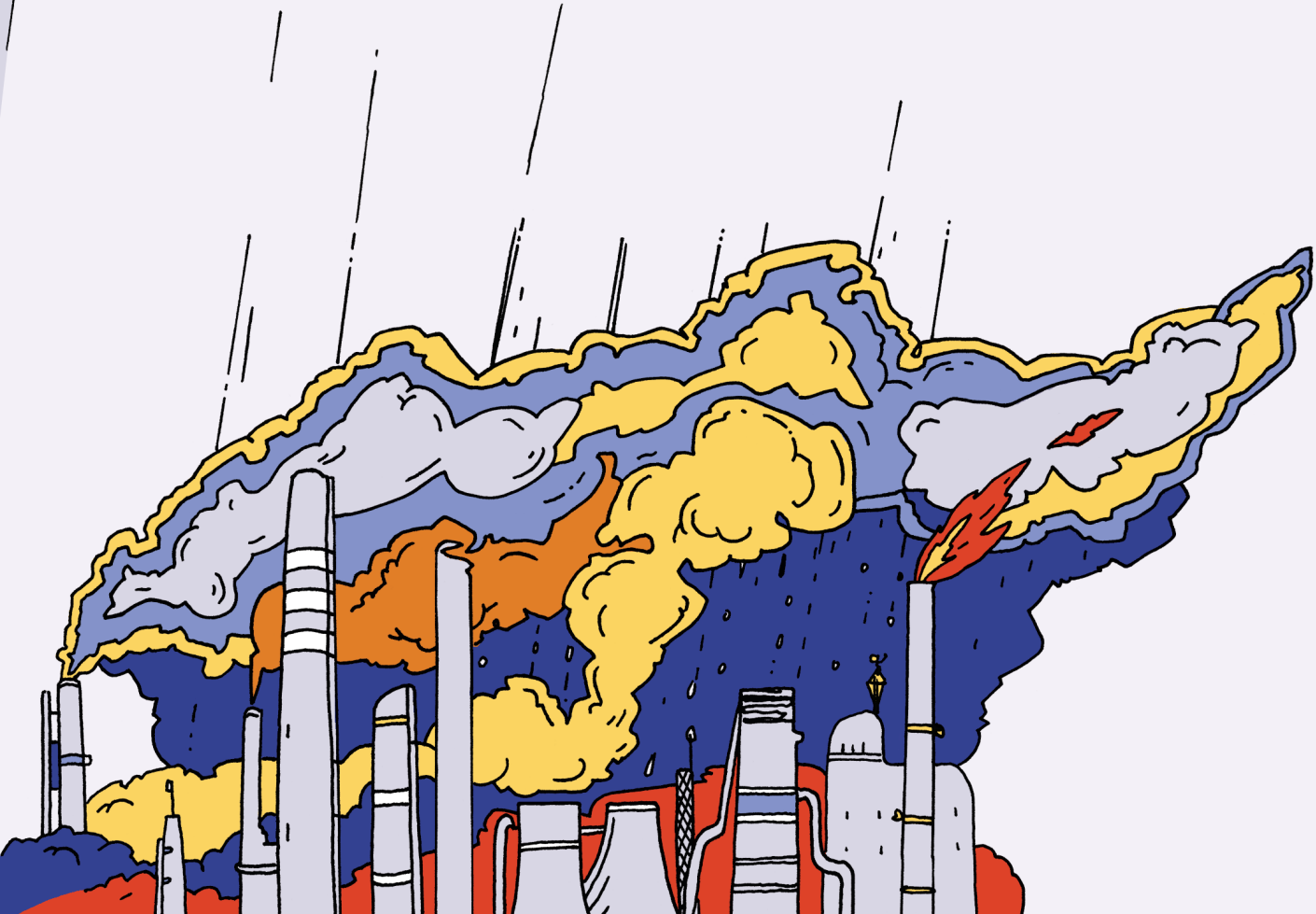


HOW THE TEXTILE INDUSTRY CONTRIBUTES TO THE INCREASE IN CARBON DIOXIDE EMISSIONS



INTRODUCTION

This indicator book was created as part of the Teaching Green project and should support teachers of students aged 10 – 16 years who are implementing education about climate change.

The educational process is divided into 4 steps. The first step is the creation of a group of students who will implement the project activities. In the introductory part, students fill out also an questionnaire about their attitudes link to the indicator mentioned below. The second step is theoretical preparation. You can use online learning models or your own resources. The third step consists of practical monitoring of the indicator (at least twice). The result of the monitoring is a presentation prepared by the students containing findings from the practical part. In the final fourth part, students fill out the attitudes questionnaire again and the changes in their character qualities are evaluated.

CLIMATE CHANGE IMPACT

Textile industries have a huge impact on the environment, expecially water use, water pollution, Greenhouse emissions, textile waste in landfills etc. Globally, 80 billion pieces of new clothing are purchased each year, translating to $1.2 trillion annually for the global fashion industry. The majority of these products are assembled in China and Bangladesh while the United States consumes more clothing and textiles than any other nation in the world. Approximately 85 % of the clothing Americans consume are sent to landfills as solid waste, amounting to nearly 80 pounds per American per year.

INDICATOR: Carbon footprint caused by the textile industry.

Project activities support development of 6 essential character qualities:

- **mindfulness**
- **curiosity**
- **courage**
- **leadership**
- **resilience**
- **ethics**

You can find these icons next to the exercises.

Mindfulness
wisdom, self-awareness, observation, insight
"The awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experiences moment by moment."

Curiosity
open-mindedness, exploration, passion, initiative, enthusiasm
"The essential desire for information, the drive to resolve uncertainty."

Courage
bravery, determination, confidence, risk taking
"The ability to act despite fear or uncertainty, in risky situations or when we are feeling vulnerable."

Leadership
responsibility, accountability, dependability, reliability, selflessness
"The relational and ethical process of people attempting to accomplish positive change."

Resilience
perseverance, grit, tenacity, resourcefulness, self-discipline
"The ability or set of qualities that allow one to overcome obstacles."

Ethics
benevolence, humaneness, integrity, respect, justice, fairness
"The moral principles that govern a person's behavior or the conducting of an activity."

THEORETICAL PART

Introduction to students

The textile industry is growing and has a huge impact on the environment as a result. The impact can be seen in the **Carbon footprint** that the textile industry is having. The impact can be found in the increased number of clothes people bought in the EU, with the numbers to be increased by 40% in just a few decades. Even though that impact is connected more to third countries because of the production that may take place there, the environmental impact from the textile industry in EU is significant and is between 2-10% of the total environmental impact of the EU consumption.

Additionally, is important to clarify the following term. Firstly, the term textile industry refers to the production of yarn, textiles, and fabrics, while the clothing industry (also referred to as the garment/apparel/fashion industry) refers to the production of garments. For the purposes of this presentation, the textile industry will include both industries (textiles and clothing). Additionally, another useful term is fast fashion which is the constant provision of new styles at very low prices, which has led to a big increase in the quantity of clothes produced and thrown away.

The impact that textile industry has on the environment are; on **water use, water pollution, greenhouse emissions, textile waste in landfills etc.** According to the EPRS, -in 2015- 79 billion cubic metres of water were used by the textile and clothing industry. For just one t-shirt 2,700 litres of water is used. Moreover, Washing synthetics releases an estimated 0.5 million tonnes of microfibres into the ocean a year. Also, the fashion sector is thought to be responsible for 10% of global carbon emissions, which is higher than international aircraft and marine shipping put together. Textile purchases in the EU in 2017 resulted in around 654 kg of CO_2 emissions per person, according to the European Environment Agency.

? Questions for students

- **Have you ever wondered how much is the carbon footprint in our wardrobe?**
- **Have you ever wondered the journey a cloth makes?**
- **Do you know how long is the intended use for clothes? And how could it be extended?**
- **Are you aware of any ways to minimise the carbon footprint in textiles industries?**
- **Have you ever wondered, how many of your clothes are recyclable?**
- **Before buying a new piece of cloth, do you think if you really need it?**
- **Before buying a new piece of cloth, do you wonder what will happened to it after you don't like it anymore?**

RESOURCES FOR FURTHER STUDING:

- MODULE 1
- MODULE X
- Websites with information on carbon footprint of a textile industry.

NECESSARY TOOLS:

Access to internet/laptop, pen/pencil, markers, A4 or A3 paper for the map.

Mention only what is necessary to support their efforts to search for data, others will be available in the module for teachers.

PRACTICAL PART

Aim of activity

The aim of the activity is to **increase awareness about the journey of our clothes** and to understand **what I can do with them when the first phase of their use is over**. By creating a map, we will discover the journey of a garment. From the creation of the product to the end.

Orientation or Engagement

Bring a piece of clothing (T-shirt, jeans, bag, towel) to school and research the product (***Where was it made? What was used to make it? Where did you buy it?***) and therefore create a map and start from the beginning of the clothing's journey to now.

Create the **product journey** - where your clothes were produced, how many miles it took to get to your wardrobe, what are the CO_2 **emissions** from transport, etc. In addition, you can research the **water consumption** your clothes make when they are made or after purchase (laundry, etc.).

You should then continue to ask what happens next to your piece of clothing and continue to fill in the map.

Before the students start with the journey of their clothing, they can try to understand what their personal fashion CO_2 footprint is.

Students can complete the quiz about the Fashion Footprint Calculator.

Therefore, students can discuss ***"What is their CO_2 level? Is it higher or lower than average consumer?"***

They should also describe how they feel about the results.

Students can spread awareness by make a survey between their pupils or family/friends, with questions such as:

- **how often you renew your clothes?**
- **how long do you have your clothes?**
- **do you care about the brand?**
- **would you buy second hand clothes?**
- **before buying a new piece of cloth, do you wonder what will happened to it after you don't like it anymore?**

After the students found out their **personal footprint**, they should try to describe their opinion about the Carbon footprint caused by the textile industry. How does the rising footprint affect them personally?

Conceptualization

Prepare for the creation of the map for the journey of the clothing.

1. The map should first step is for students to research the before life of their cloth, from the factory to their wardrobe. Find out where it was produced, how it came into your wardrobe, how long you've been using it, what materials is made from.
2. The next step is for students to write down the journey from now on. They should imagine that throwing away the cloth is not an option; the purpose is to minimise the impact on the environment and the CO_2 footprint. Students can discuss in small groups and brainstorm ideas about what they can do with their piece of clothing. They should write on their map what can happened to the piece of cloth after the first use.
3. They will have to decide what will be their next step with the current piece of clothing and why is the best decision for the environment.

Investigation

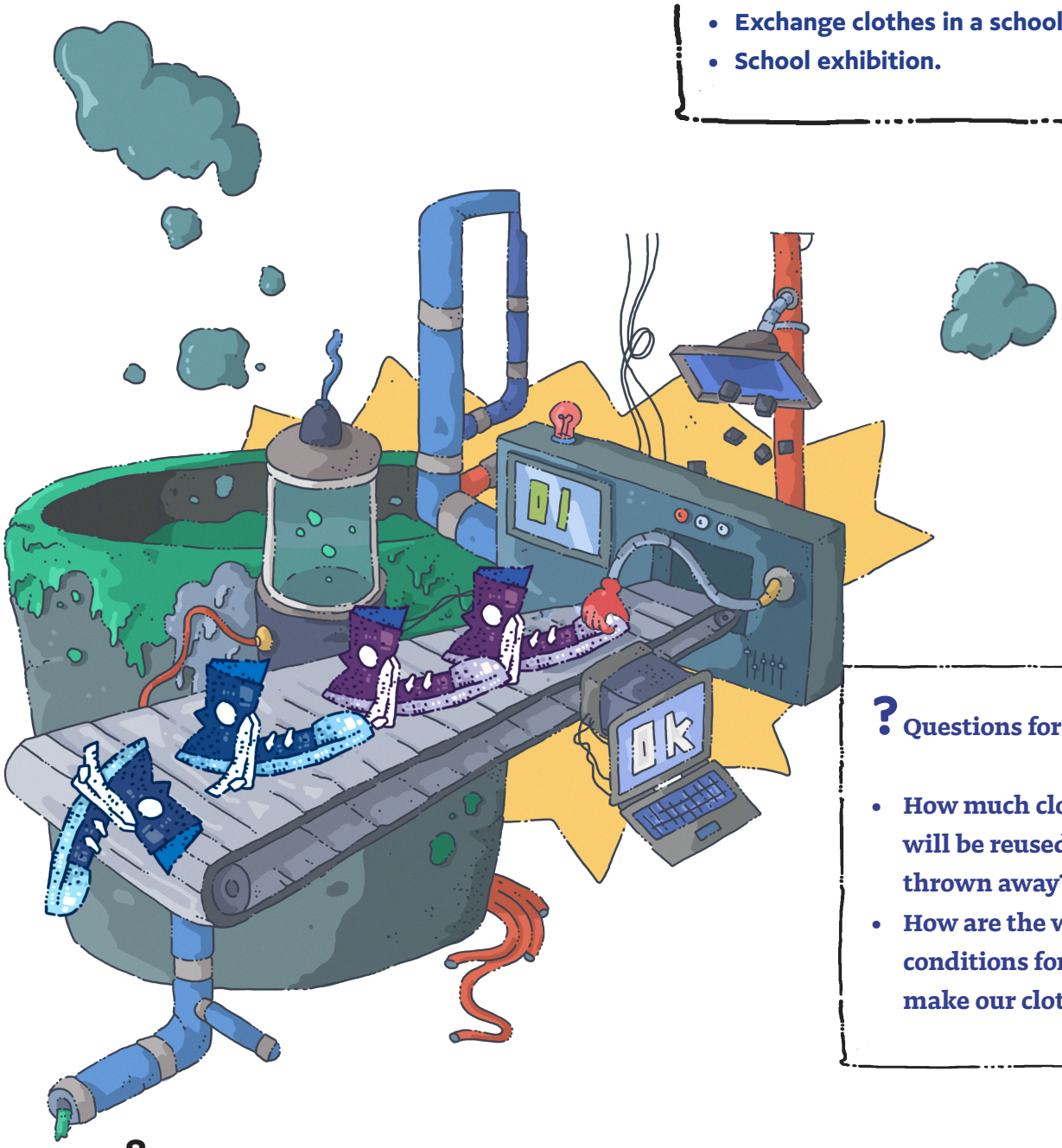
Students can discuss and research possible ways to minimise the carbon footprint by finding ways to reuse their piece of clothing without something from textiles in their local community or school.

Conclusion

The final step is to present the students' cloth journey and share the journey in the community or school so that other students can see the results and the journey.

Suggestions for possible solutions:

- **Learn new practical skills such as how to make a bag from a t-shirt, or how to reuse your old jeans instead of throwing them away.**
- **Organise a workshop for students, community etc, on how to repair their clothes instead of throwing them.**
- **Collect and recycle the clothes or make a festival/event in school and sell/donate second hand clothes, while informing your local community of the impact of the textile industry on the environment.**
- **Exchange clothes in a school event.**
- **School exhibition.**



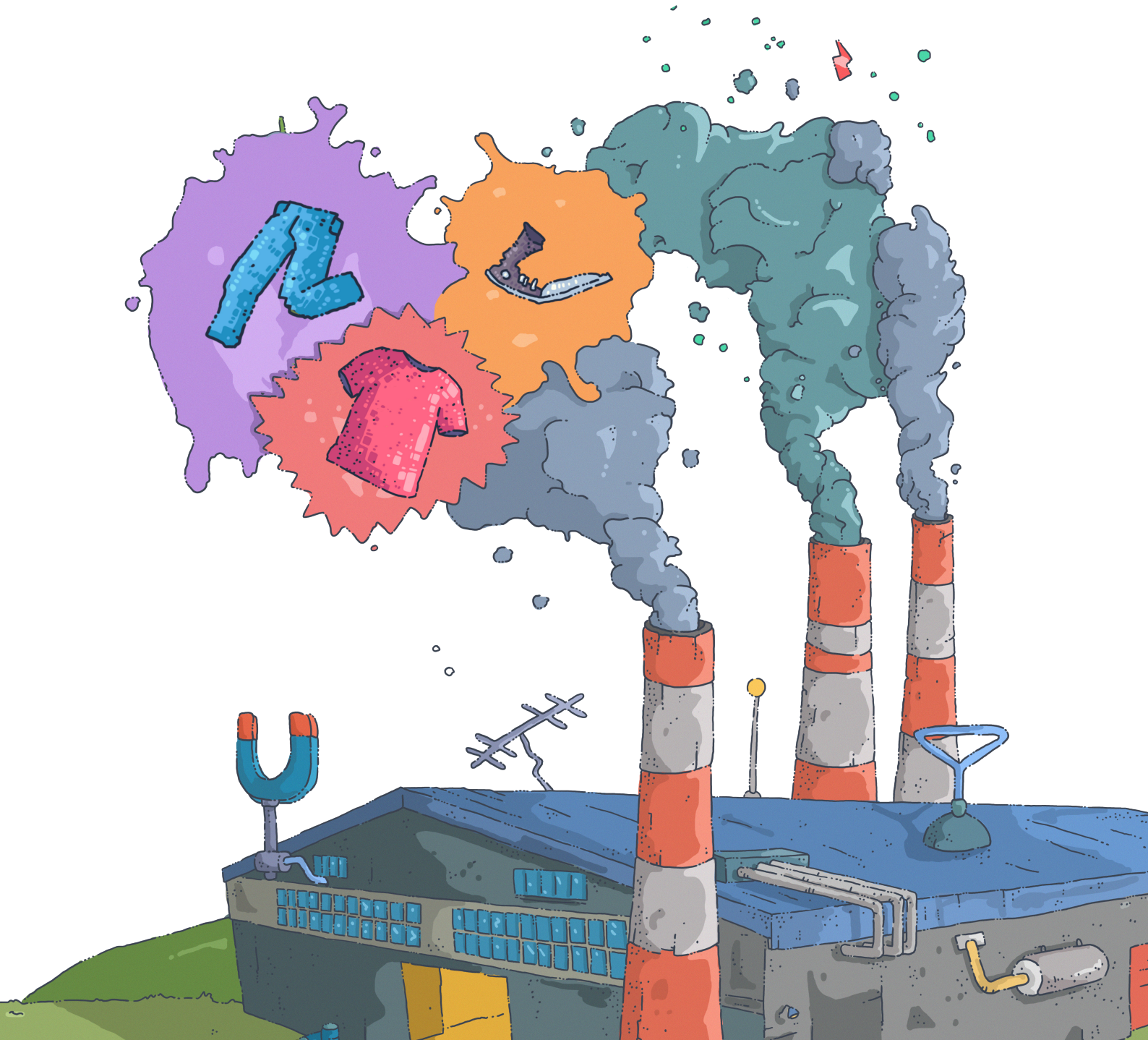
? Questions for students

- **How much clothes/textiles will be reused instead of thrown away?**
- **How are the working conditions for people that make our clothes?**

ACTIVE PART

Students can introduce the idea of **thrift shops/demonstrations** at school and/or workshops for students/young people in the local community and schools to learn how to repair their own clothes.

Create an **informative video** about the workshops/events etc. and organise to do it once a year.



RESOURCES

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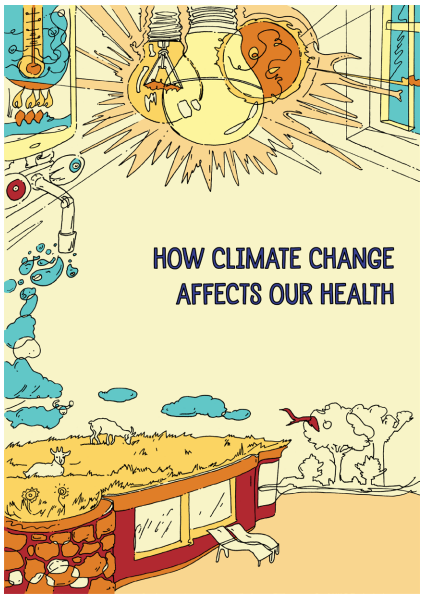
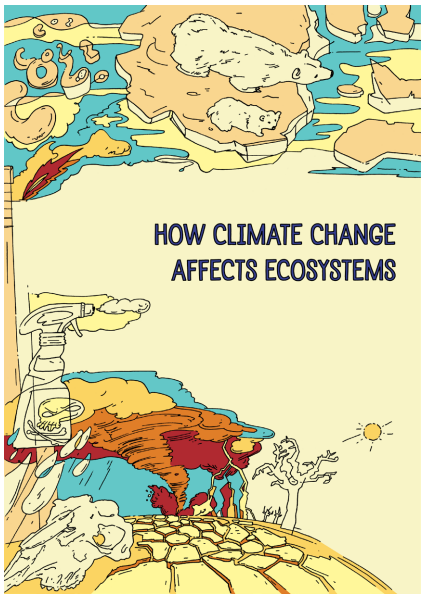
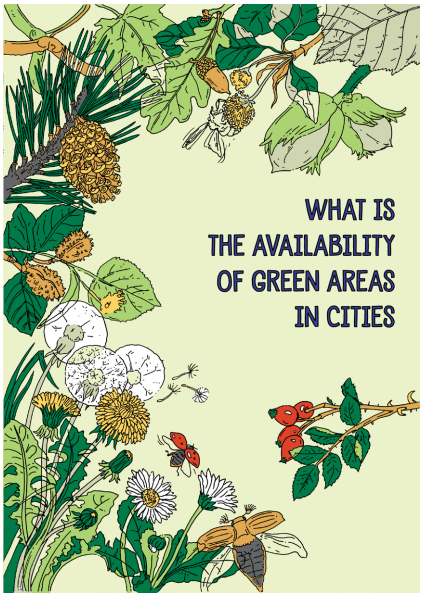
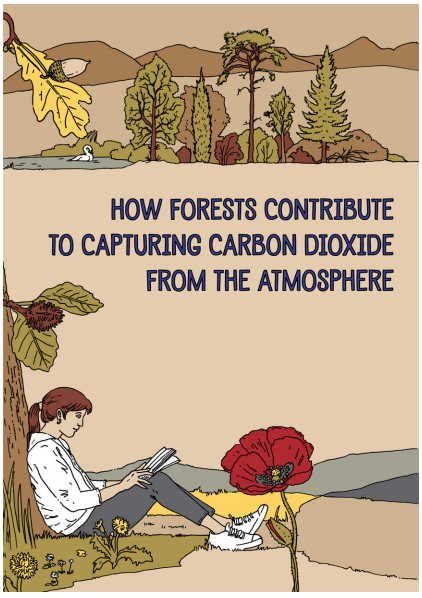
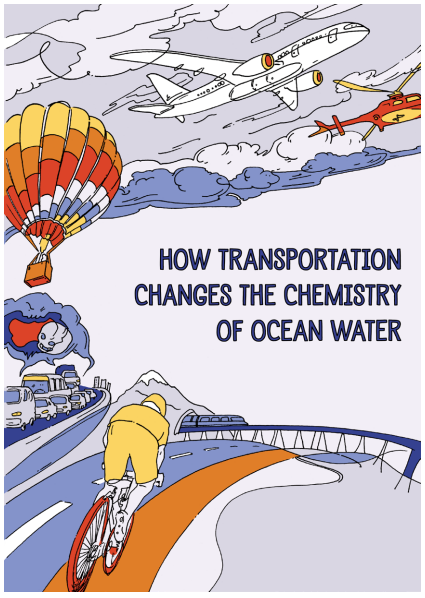
OTHER INDICATOR´S BOOKS YOU MAY LIKE CAN BE FOUND ON: TEACHINGGREEN.EU

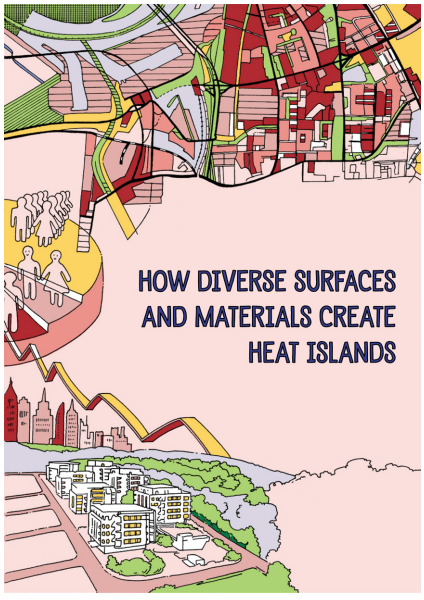


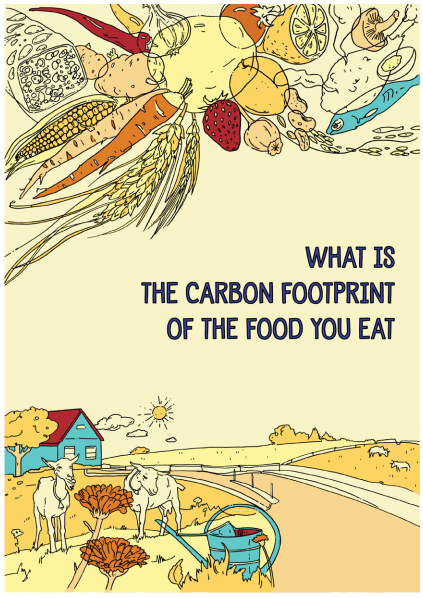


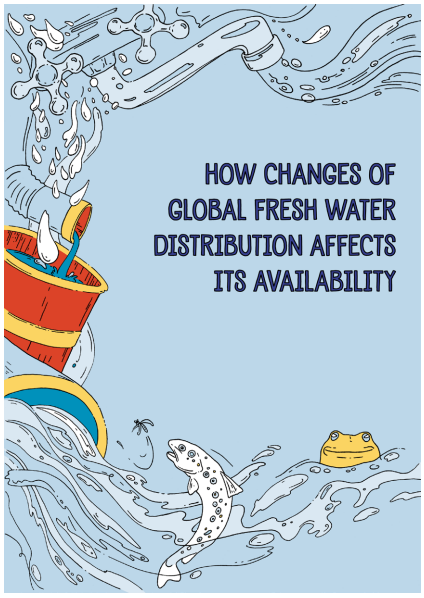


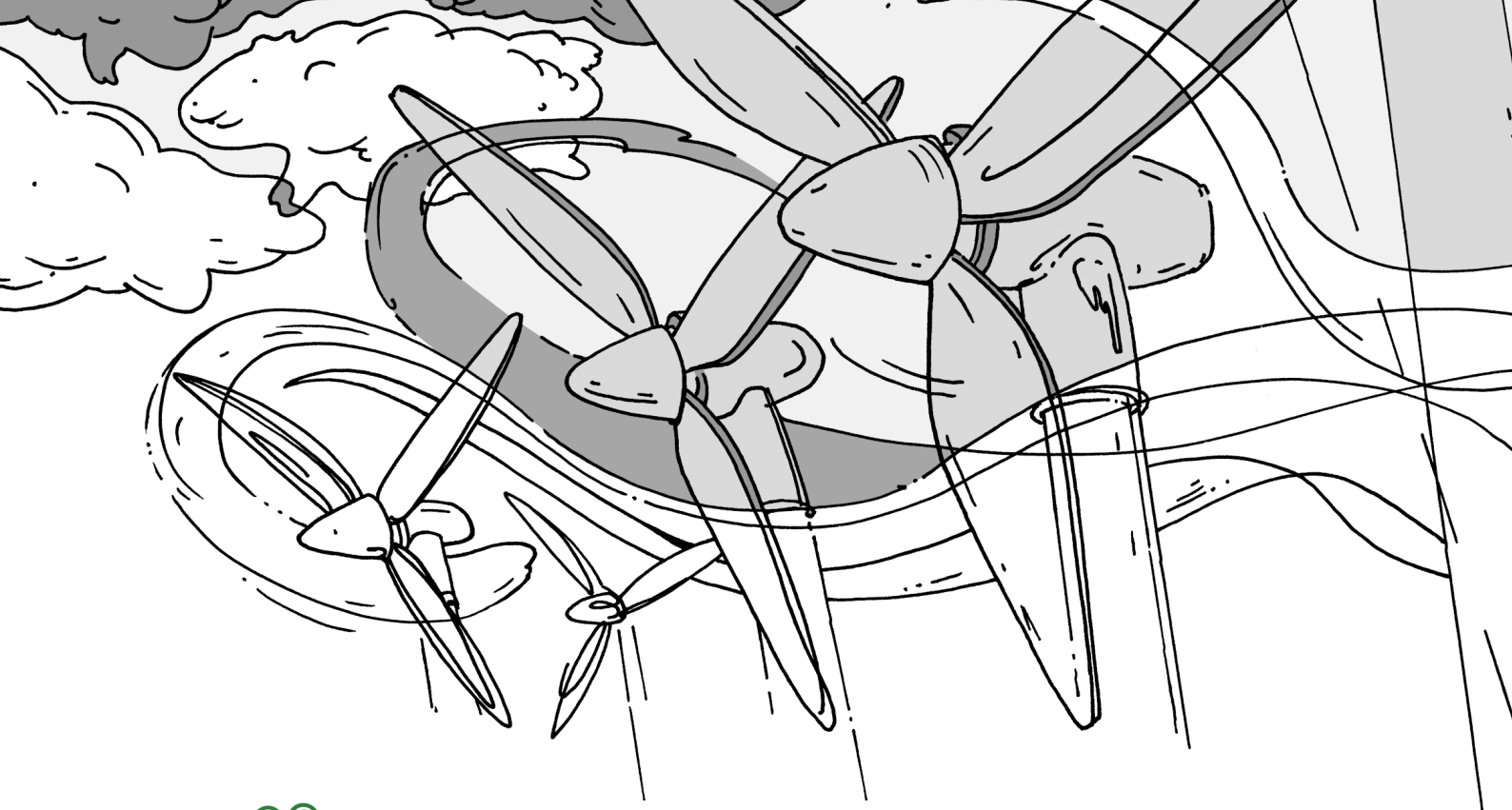












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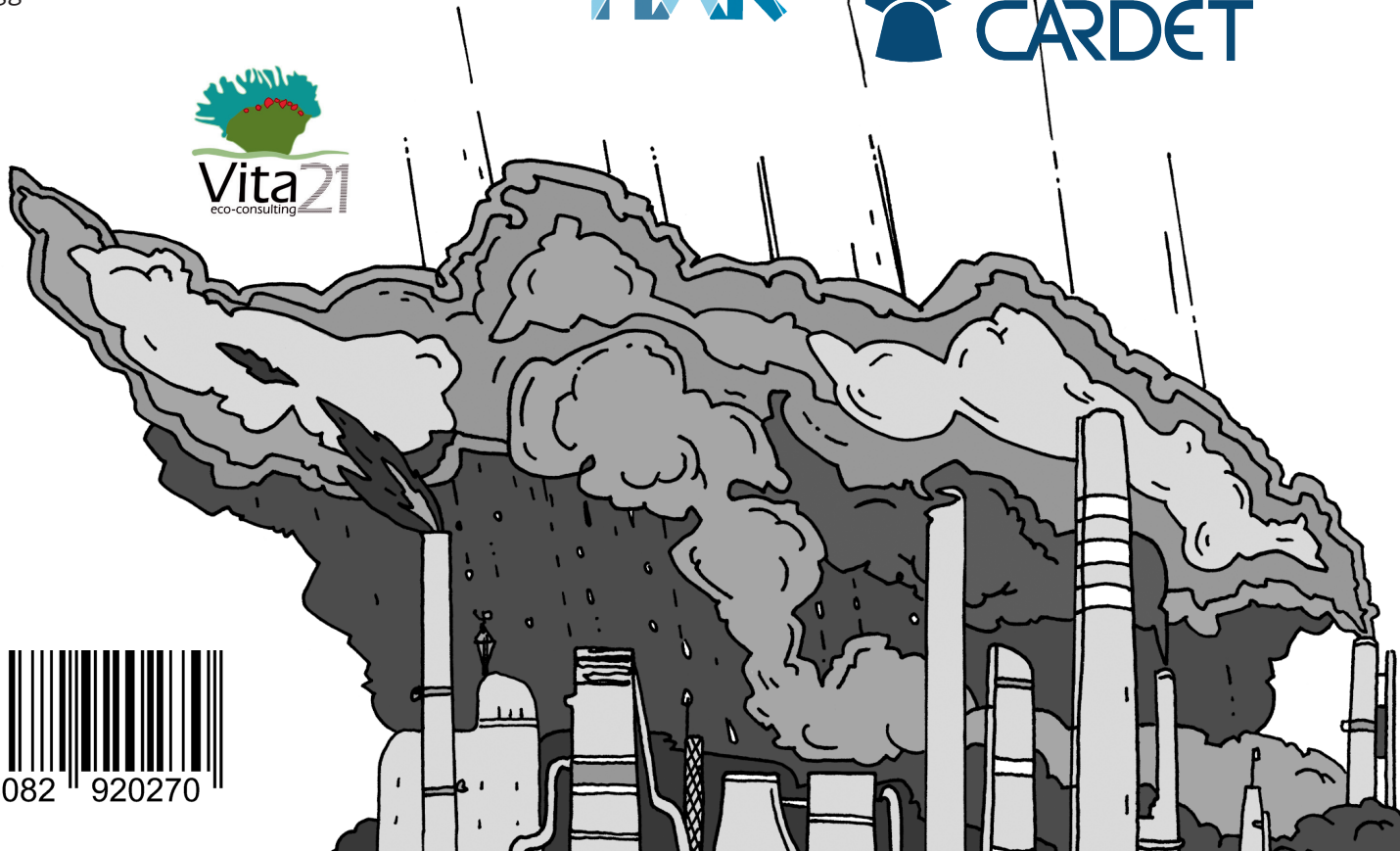

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