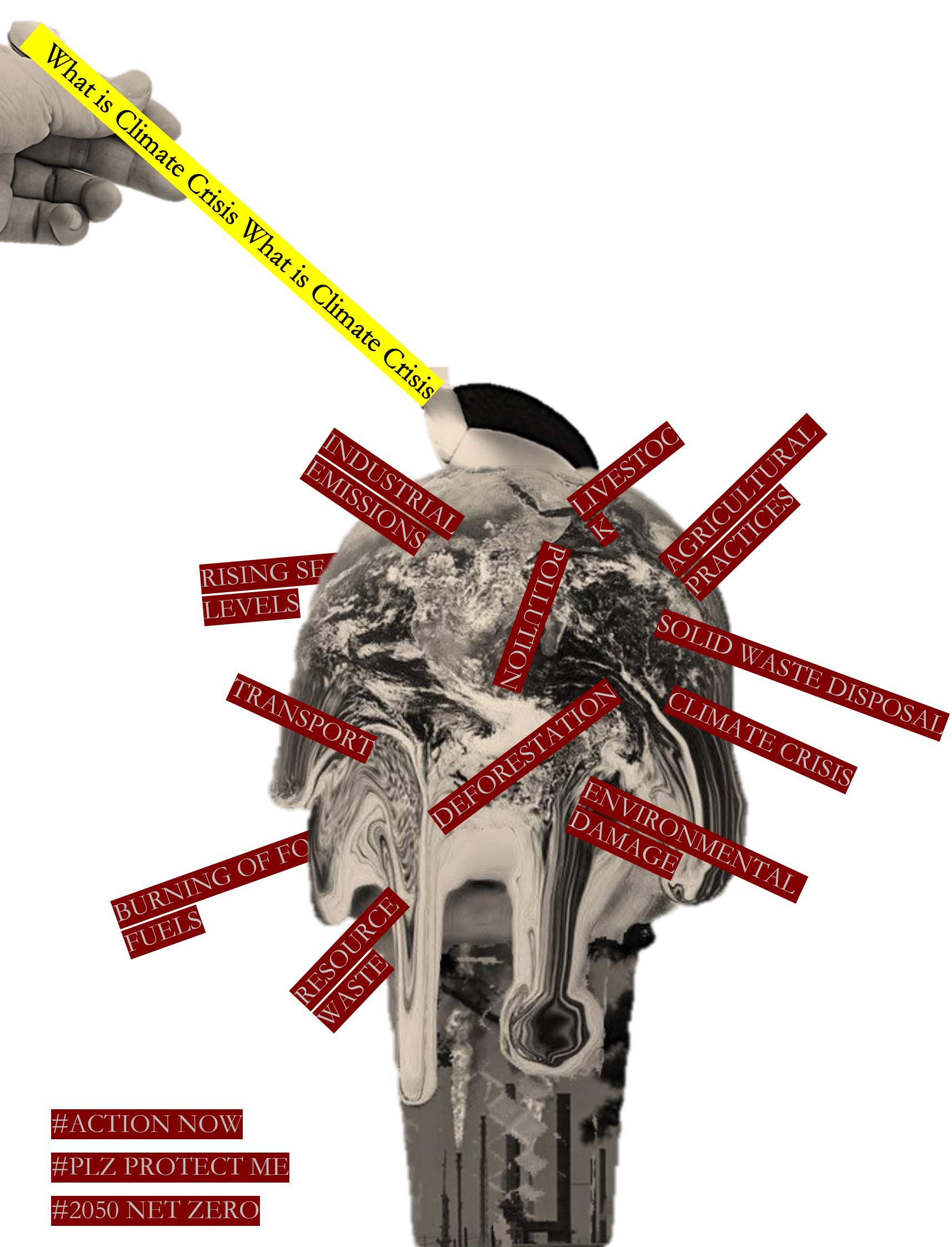


Cradle to C

ECOPOLY

Sijia Chen
Yichen Wang
Po-Tsang Ho(Fred)
Ying Yu(Cindy)
Tianye An



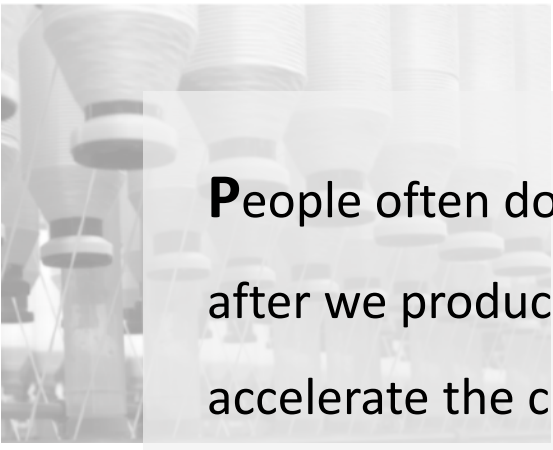
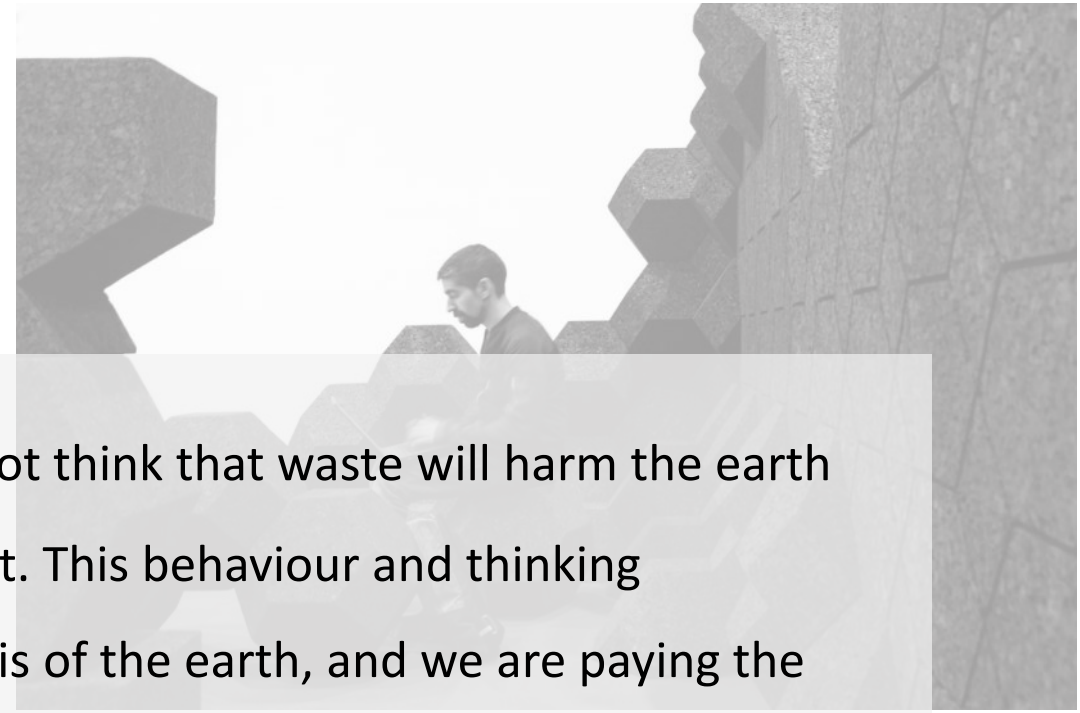


Abstract

Our project Eco-poly has received a lot of attention for its unique gameplay and educational aspect. Through the interactive nature of the game, players can gain insight into how climate change affects our lives and how each of us can take action to mitigate its effects. The game not only provides entertainment, but is also a tool to inspire awareness of environmental challenges.

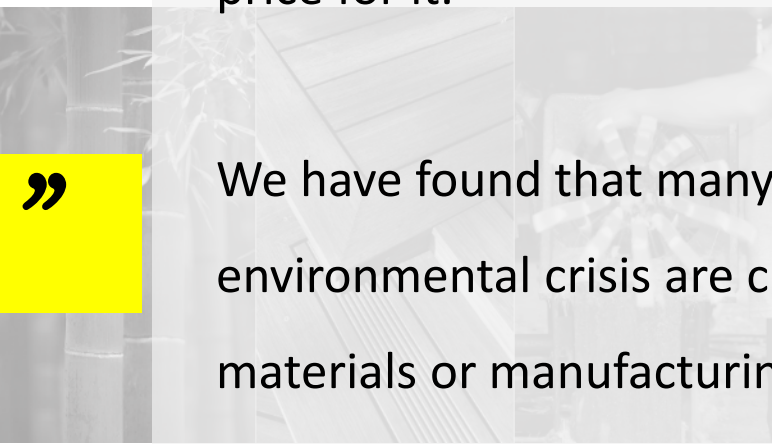
In the context of the current growing global climate crisis, education is the key to solving the problem. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) has highlighted the importance of education in achieving the Sustainable Development Goals. As a result, education was placed at the centre of our consideration of the direction of the project. We recognise that it is only through in-depth education that the public will be able to better understand the root causes of climate change and its long-term impact on the planet.

Through Eco-poly, we are committed to integrating environmental education into daily life, so that the public can enhance their environmental literacy through entertainment, deepen their understanding of the climate crisis, and inspire a sense of action to make positive contributions to protect the Earth. It is not only a game, but also an educational tool that aims to promote society's attention to environmental issues and contribute to the realisation of sustainable development.

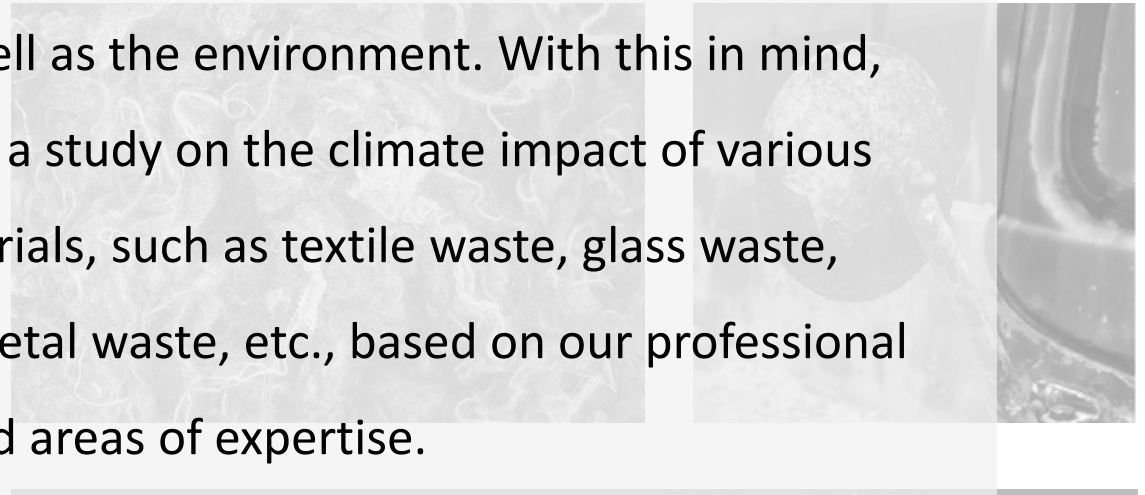
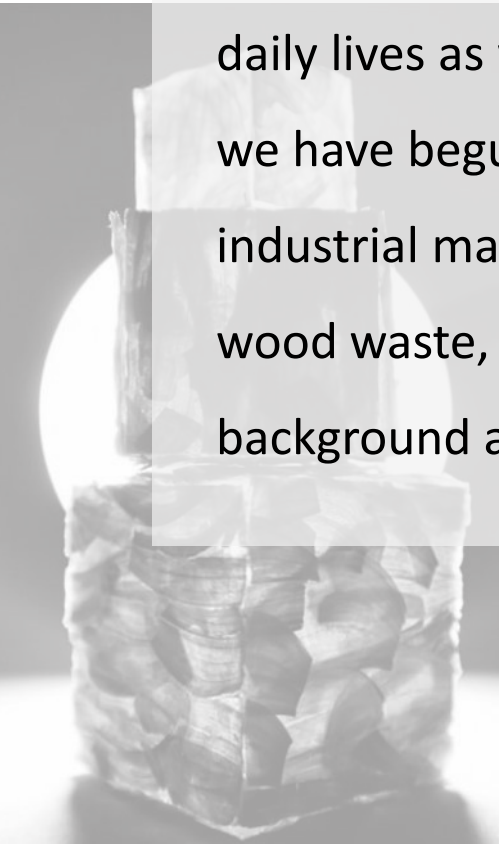


People often do not think that waste will harm the earth after we produce it. This behaviour and thinking accelerate the crisis of the earth, and we are paying the price for it.

“ I Waste therefore I am ”



We have found that many of the root causes of the environmental crisis are closely linked to the use of materials or manufacturing processes. These industries play a vital role in our society and are closely linked to our daily lives as well as the environment. With this in mind, we have begun a study on the climate impact of various industrial materials, such as textile waste, glass waste, wood waste, metal waste, etc., based on our professional background and areas of expertise.





Education

+Action

+Climate

= Change

Step 1-Knowing

The causes and effects of the climate crisis, as specified in the United Nations Climatep Action, make it clear that this crisis is present and worsening in our lives.

Step 2-Understanding

Based on the International Energy Agency (IEA) report on the share of carbon emissions by industry and tracking data, we can see which industries are more carbon-intensive and relevant to the design industry.

Step 3-Action

Environmental awareness has become a universal value in today's society and is a sustainable way to protect the planet, but if we only focus on recycling without further action and thought I think it is not enough for the whole climate change crisis.

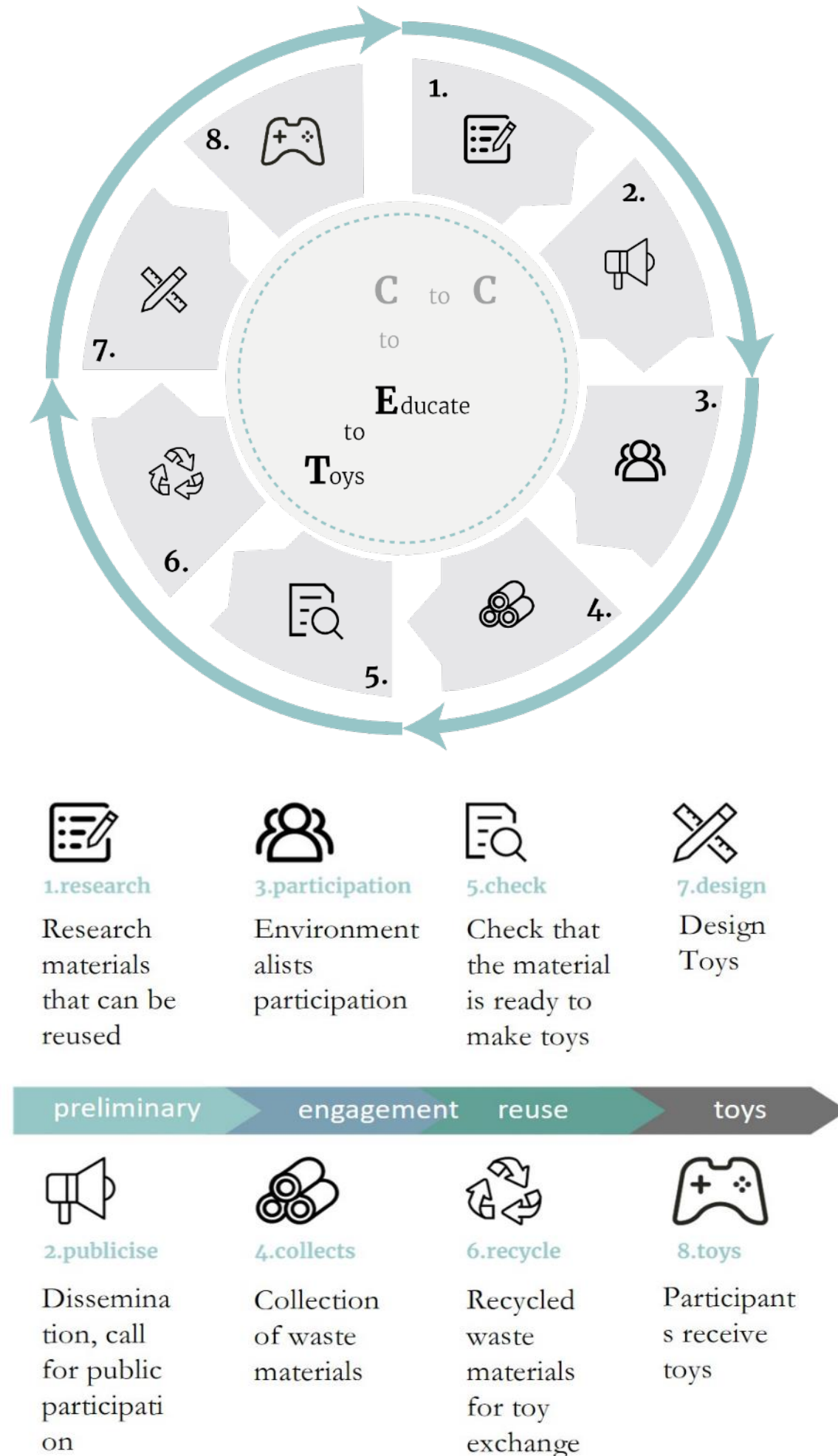
Step 4-Reflection

We want to convey the waste and pollution that comes from the materials themselves. Utilizing the fundamental “**Education**”, this message can be conveyed in more ways, resulting in another collective social reflection.

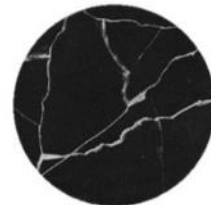
Initial progress

It is an interactive, encouraging and educational concept that can continue to promote the three-way cycle of collection, recycling and reuse.

This study explores new ways to promote sustainable development and environmental awareness through the design of an educational and interactive toy/game using waste materials as raw materials. This innovative design not only guides individuals to take environmental actions, but also stimulates social concern and action for sustainable development. Through the participation and interaction of the game, this study aims to subconsciously enhance the environmental awareness of individuals and motivate them to take effective actions to protect the environment, thus jointly addressing climate change.



Waste Materials sort



Construction

Wood Veneer	Cement	Brass/Copper	Marble
Timber	Concrete	Stainless steel	Granit
Solid Wood	Plaster	Tin	Limestone
Plywood	Grout	Steel	Artificial Stone



Textile

- Clothes
- Fabric
- Yarn
- Fiber

Metal

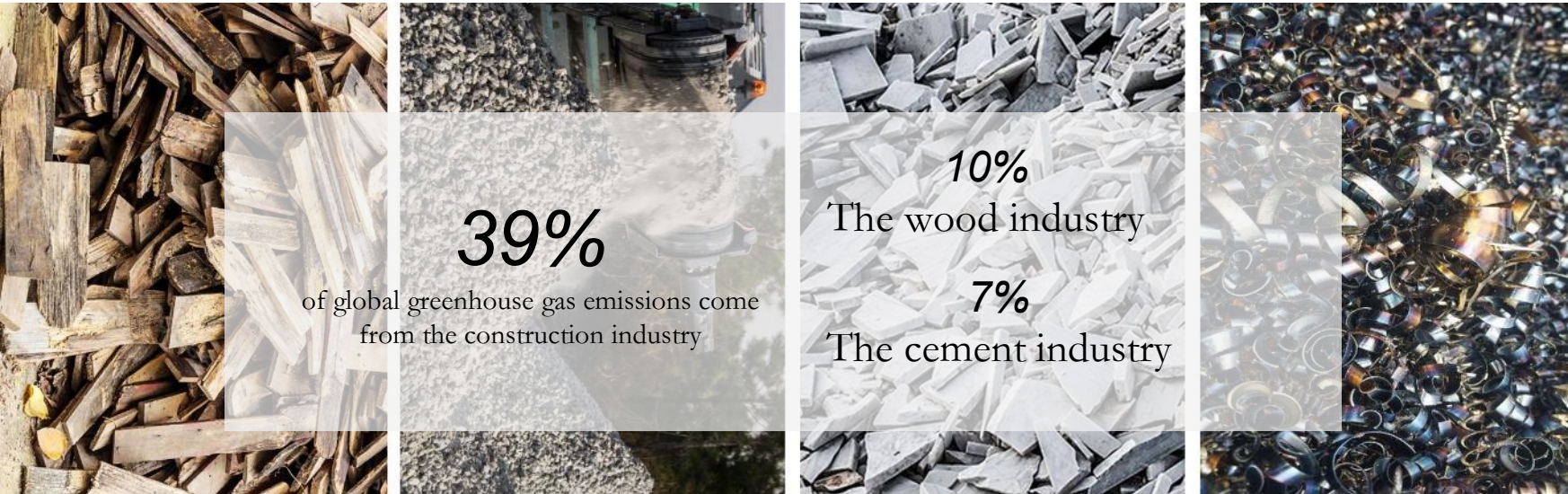
- Cupronickel
- Brass/Copper
- Aluminium
- Silver

Paper & Print

- Paper
- Ink print
- Digital print
- Ink cartridge

We have set out four broad categories of material: construction waste, textile waste, metal waste and printing waste, and we have also refined the range of materials that we can recycle. Our team selects materials that can be recycled in as environmentally friendly a way as possible, and we want to minimise the involvement of other materials in the recycling process.

These four categories have also been shown to have high emissions in our research, which makes us even more convinced that this is the right direction to go in, and that it can be seen everywhere in life, making it easier to promote the concepts we want to promote and educate the public about them.



39%

of global greenhouse gas emissions come from the construction industry

10%
The wood industry
7%
The cement industry

Materials Research

The construction industry is a major contributor to carbon emissions worldwide. In 2018, it accounted for 39% of energy and process-related carbon dioxide (CO₂) emissions, as stated in the Global Status Report for Buildings and Construction 2019.

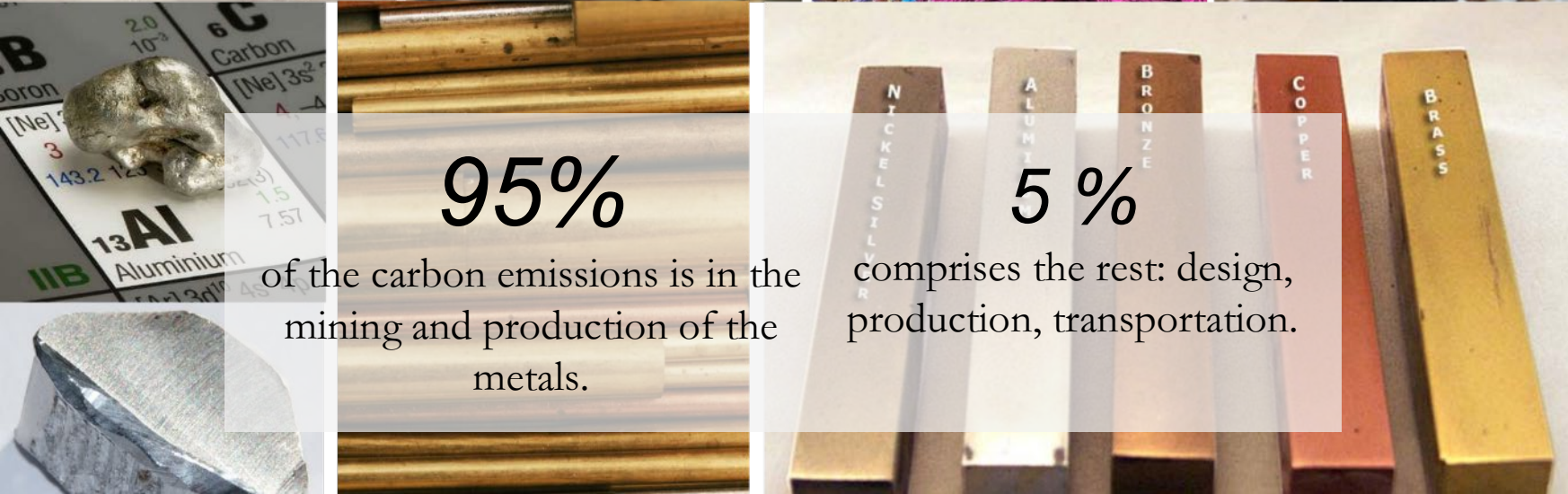


8-10%

of global greenhouse gas emissions come from the fashion and textiles industry

956,000 tonnes
of clothing is discarded annually in the UK

The textile industry is a sector with a strong impact on climate change. With 1.7 million tons of CO₂ emitted annually, accounting for 10% of global greenhouse gas emissions, the textile industry is a major contributor to global warming.



95%

of the carbon emissions is in the mining and production of the metals.

5%
comprises the rest: design, production, transportation.

The carbon footprint of your jewellery can be very important as mining requires a large amount of energy. For instance, in 2012, the heat-trapping CO₂ emissions from diamond mining were equivalent to about 1.5 million cars on the road.



2%

The Paper industry

1%
The Ink industry

The CO₂ emissions of the paper and printing industry are relatively low compared to other sectors. The pulp and paper sector was responsible for just under 2% of all emissions from industry in 2022.



Play

&

Grow

&

Learn





The most comfortable learning process and atmosphere is when people can learn interesting knowledge together while playing with toys.

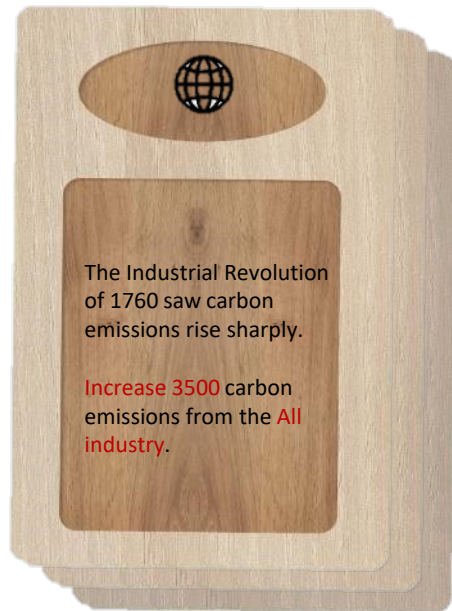
Board Game-concept



We want to create fun toys using recycled materials that everyone in the community can join in on making. These toys show the importance of taking care of our planet and using resources wisely. They come in all shapes and sizes, just like the diversity of our world. By making them, we hope to teach everyone about protecting the environment and why it matters.

Board Game - ECOPOLY

- CO2 Emission Point-1 10000/10000 
- CO2 Emission Point-2 10000/10000 
- CO2 Emission Point-3 10000/10000 
- CO2 Emission Point-4 10000/10000 



Collecting/Testing

In terms of the collection of materials, we want to convey our concepts, so we target the school workshop, all the materials are from various shop waste, and in the process of processing, we try to maintain the characteristics of the raw materials and texture, without excessive processing steps to change its appearance. We try to keep the prototype as much as possible in order to achieve the concept we want to present.

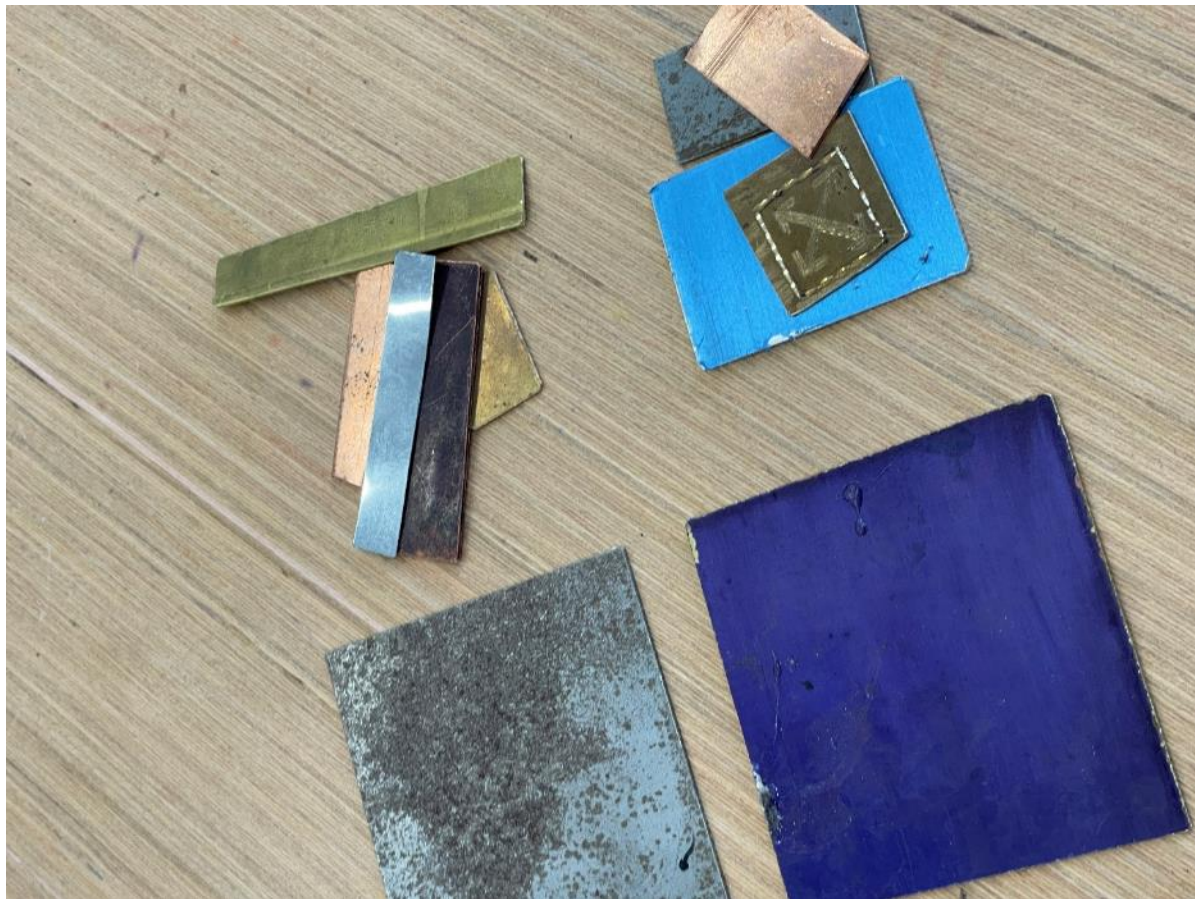
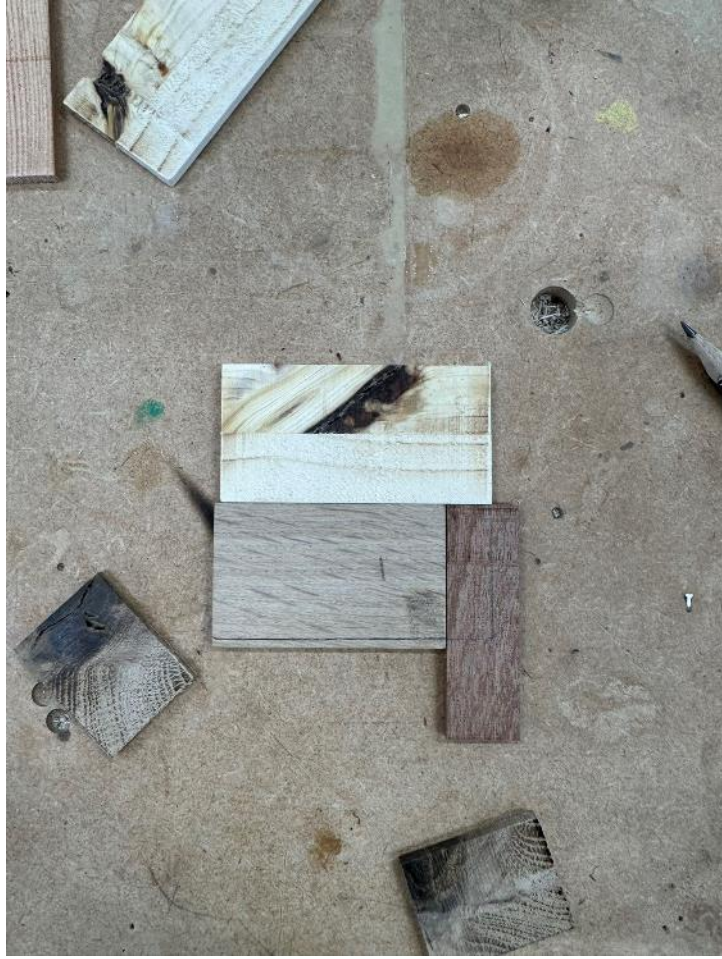
Collect materials



Material processing

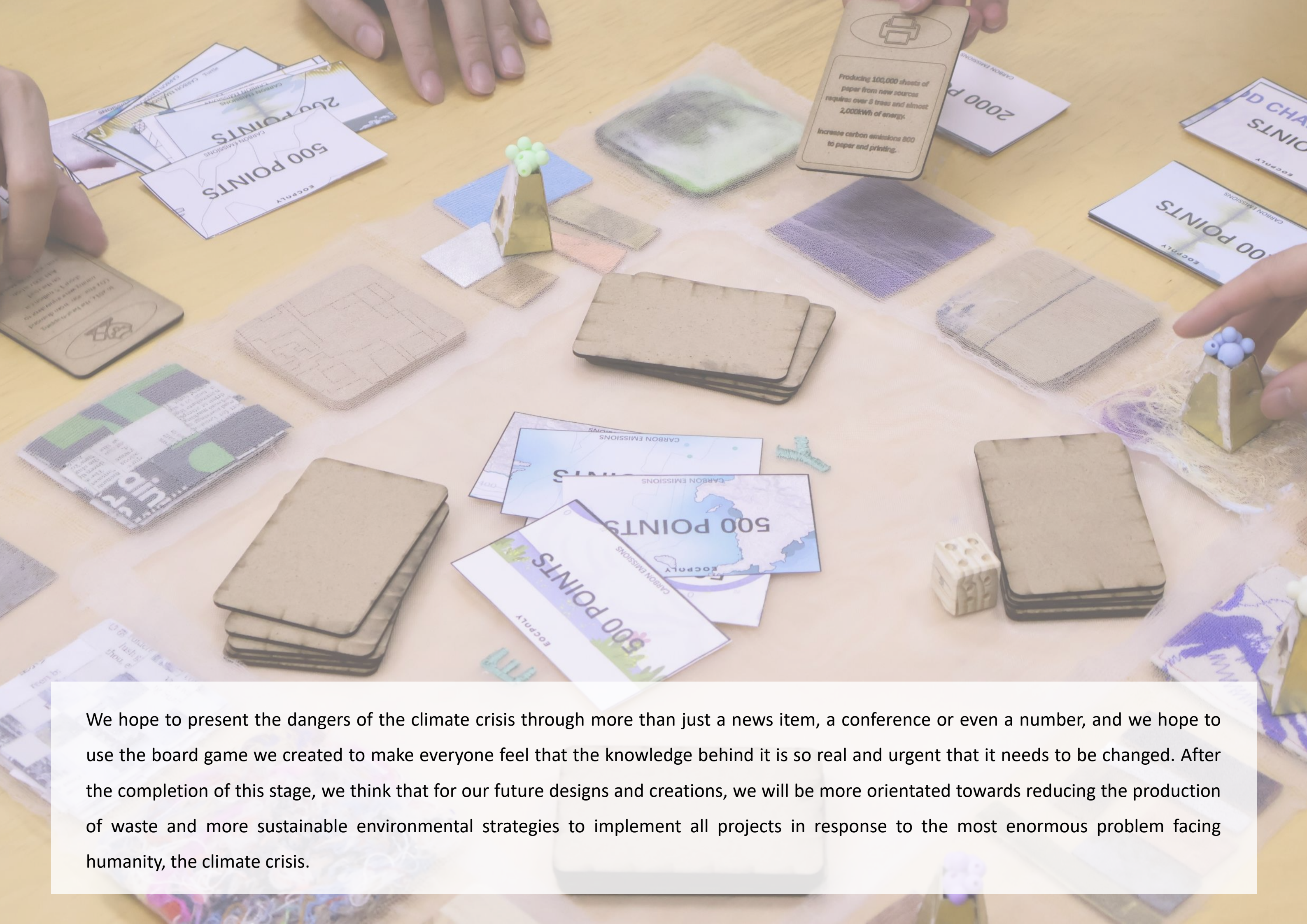


Material processing



Texting





We hope to present the dangers of the climate crisis through more than just a news item, a conference or even a number, and we hope to use the board game we created to make everyone feel that the knowledge behind it is so real and urgent that it needs to be changed. After the completion of this stage, we think that for our future designs and creations, we will be more orientated towards reducing the production of waste and more sustainable environmental strategies to implement all projects in response to the most enormous problem facing humanity, the climate crisis.