

Interactive Storytelling for Fostering Adolescents' Sustainability Mentalities

Design of a Physical Installation to Provoke Reflections About the Relationship Between Human, Nature and Consumption

Master's Thesis in Industrial Design Engineering

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Abstract

Amidst rising concerns about climate change and overconsumption, this thesis explores how interactive storytelling can support adolescents in reflecting on their consumption behaviors and discovering sustainable alternatives to possibly unsustainable behaviours. Drawing on theories of overconsumption, fundamental needs, and speculative design, the thesis investigates how abstract sustainability issues can be made tangible and personally relevant for young people. A mixed-methods user study involving 52 upper-secondary school students in Gothenburg revealed that adolescents primarily associate sustainability with personal wellbeing rather than environmental or societal dimensions. The study also highlighted a greater willingness to change behaviors that directly affect their health and lifestyle over those perceived as environmentally impactful.

Based on these insights, an interactive storytelling installation, *Vänskapsprövningen*, was developed to symbolically represent the relationship between humanity, nature, and consumption. Through metaphor, multisensory elements, and participatory reflection, the installation aimed to bridge the gap between abstract sustainability narratives and everyday experiences. User evaluations demonstrated that the design fostered emotional engagement and self-reflection, suggesting that speculative and interactive storytelling can be effective tools for activating sustainable attitudes among adolescents. The thesis contributes to the field of design for sustainable behavior by proposing a replicable work for emotionally resonant behavior change interventions targeted at youth.

Acknowledgement

This master's thesis was carried out during the spring term of 2025 at the Department of Industrial and Materials Science at Chalmers University of Technology. We, the project group, are two students from the Masters of Science program in Industrial Design Engineering. The project was conducted in collaboration with Digidem lab and aligned with their initiatives in Scale, a pilot project launched by the Environment and Health Department of the City of Stockholm, as part of the EU's NetZeroCities programme.

We would like to begin by expressing our sincere thanks to our supervisor, Siw Eriksson, for her incredible support, guidance and inspiration throughout the entire project. We also want to deeply thank our examiner, Helena Strömberg, who has been a great source of help and guidance to the group during the process

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1 Introduction

The climate crisis is one of the most pressing challenges of our time, with its effects becoming increasingly visible across the globe. A major driver of the crisis is unsustainable consumption, especially in high-income countries. Indicators such as Earth Overshoot Day emphasize how quickly natural resources are depleted, underlining the urgent need to reduce our environmental impact (Earth Overshoot Day, 2025).

In Sweden, consumption-based emissions remain a significant obstacle to achieving sustainable development goals (United Nations, 2023). Each person emits an average of 8.4 tons of carbon dioxide per year, which remains well above the global average (Naturvårdsverket, 2025; Our World in Data, 2024). Household consumption accounts for 60% of these emissions and includes areas such as energy usage, food, consumer goods, and leisure activities (Naturvårdsverket, 2025).

However, environmental impact is not only a matter of statistics, but also of perception and behavior. In modern societies, the line between necessity and excess is often blurred. What constitutes "overconsumption" varies widely among individuals and is shaped by social norms and political discourse. Scholars such as Wethal and Hansen (2023) highlight how overconsumption is often framed as a controversial topic in public debates, met with resistance or indifference rather than concern. Håkansson (2014) emphasizes that tackling this issue requires a deeper understanding of the underlying societal mechanisms.

Overconsumption is especially relevant among adolescents, a group growing up in a world defined by both rising climate anxiety and entrenched consumer culture. Typically aged between 10 and 19 (World Health Organization, n.d), adolescents are navigating complex identity and lifestyle choices, while also facing societal expectations about sustainability. Encouraging reflection and fostering emotional engagement with the future in this age group is therefore essential for promoting lasting sustainable behaviors (Lenhard et al., 2024).

1.1 Aim and Objective

This master thesis aims to explore ways to facilitate upper secondary school students' self-discovery of lasting sustainable behaviours to possible identified overconsumption behaviours.

The project objective is a probing medium for encouraging more sustainable consumption behaviours among upper secondary school students. The format of the probing medium will be interactive to effectively stimulate reactions and reflections from the target group, and the target user is expected to gain a realisation or motivation for behaviour change as an outcome.

1.2 Research Questions

To fulfill the aim, the answer to the following research questions will be sought:

- 1. In what ways is overconsumption manifested among Swedish upper secondary school students?**
- 2. How can upper secondary school students be facilitated to discover sustainable ways of satisfying the identified needs?**

1.3 Thesis Project Process

The thesis project contained different design activities, organised in three phases as illustrated in Figure 1.1. The pre-study phase aimed at finding an adequate delimitation for the project, as mentioned above. The User Study phase aimed at understanding the target group in aspects of overconsumption and sustainability attitudes in real life context. The project concluded with a design phase for the trigger product to concretise the insights gathered from the previous phases, and to deliver the project objective. In upcoming chapters (see 3, 4 & 5), the methods and conduction for the mentioned project phases are elaborated.

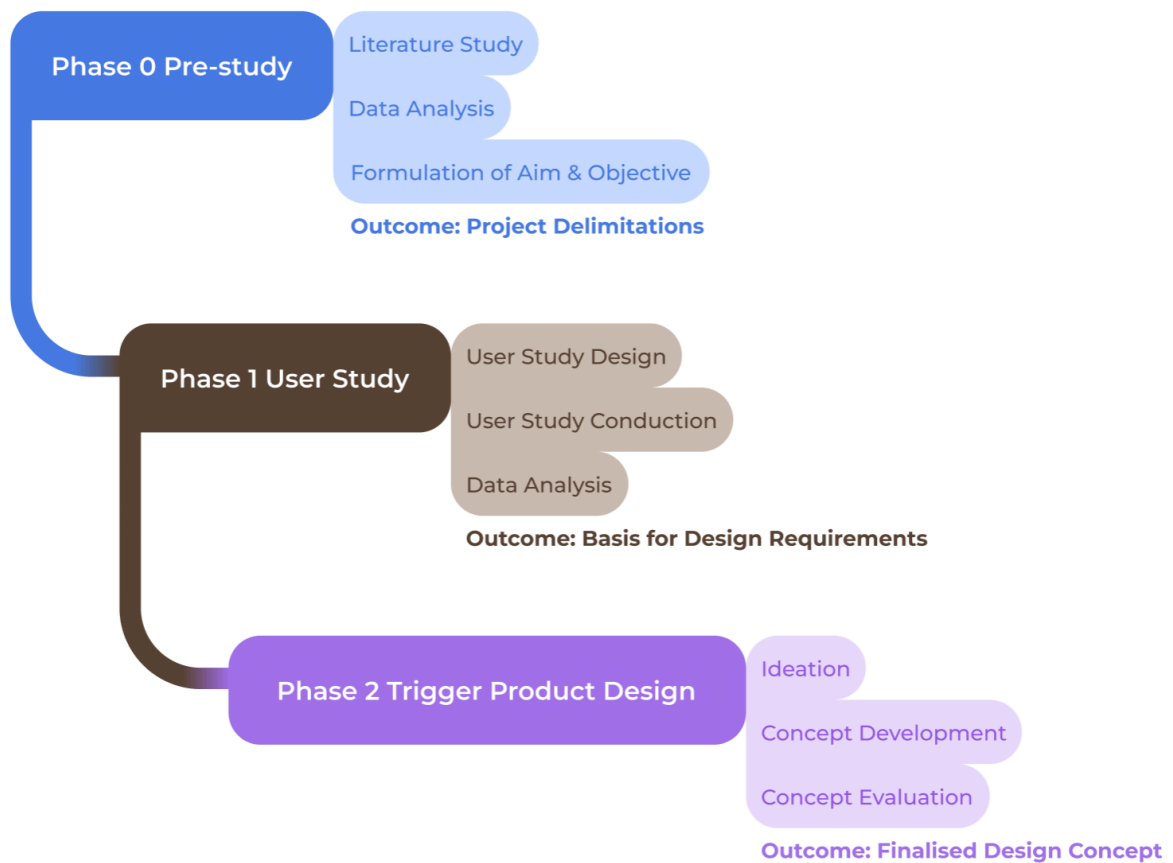


Figure 1.1 Overall structure of the thesis project containing three phases.

2 Frame of Reference

In this chapter, the results of the literature pre-study are presented. The theoretical framework includes research on overconsumption, consumption behaviors, fundamental needs, emotional needs, and the challenges adolescents face in relation to these topics. This frame of reference served as a foundation for formulating the aim, objectives, and research questions, and also informed the design activities that followed.

2.1 Overconsumption

Overconsumption is often highlighted as a key issue within household consumption. In everyday language, the word “overconsumption” often refers to purchase and usage of excessive goods and services. Researchers have acknowledged the challenge of defining overconsumption (Håkansson, 2014), noting the blurred distinction between necessity and excess. The perception of necessity is subjective, context-dependent (Khan et al., 2004), and influenced by personal values and environmental awareness. Therefore, it is suggested that future research on overconsumption should address this issue through elaborating on the relevant aspects of overconsumption (Håkansson, 2014).

To better understand the individual's role in overconsumption behaviors, it is crucial to examine both the consumer's motives and the consequences of their consumption. Overconsumption is often framed as the consumer's sole responsibility. However, purchasing decisions are not always fully conscious. This is particularly evident in the concept of hedonic consumption (Dhar & Wertenbroch, 2000), which refers to the purchase and use of goods and services for pleasure, comfort, or self-expression rather than necessity. Marketing and advertising frequently exploit hedonic motives to encourage consumption behaviors (Kim & Ratner, 2019).

The consequences of overconsumption for individuals vary depending on the type of goods or services consumed. Some researchers highlight direct physical health risks, such as the overconsumption of unhealthy food and alcohol (Barson et al., 2011). Additionally, hedonic consumption provides instant gratification at the moment of purchase, but satisfaction tends to fade over time. This emotional dynamic can lead to feelings of guilt or regret after realising the lack of sustainability in consumption (Jain, 2012). In some cases, these negative emotions create a cycle where individuals consume more to distract themselves from guilt, perpetuating overconsumption.

Based on Hartmut Rosa's sociological theories of social acceleration and resonance (Cassegård et al., 2023; Rosa, 2003), overconsumption can be framed as a consequence of social acceleration and an experienced disconnection from fundamental human needs, including a connection to nature and the world. In the pursuit of deep fulfillment, hedonic goods and services serve as temporary substitutes. However, as fulfillment fades, the desire for it intensifies, fueling the

cycle of overconsumption. Rosa explains the state of deep fulfillment as *Resonance*, which occurs when an individual feels a connection and meaningful engagement with the world, where experiences "speak back" to an individual. Similar to love, resonance cannot be purchased as a hedonic good (Rosa, 2023). This perspective underscores the complexity of overconsumption and highlights the vulnerable position of individual consumers.

Tracing back to the topic covering misdistribution of responsibility with regards to overconsumption, Wethal and Hansen (2023) discuss overconsumption as a societal challenge with social conditioning at its root. One of the points brought up is the reaction of the public on the few occasions in which overconsumption is discussed as a societal issue in political contexts. These reactions often involve accusations against said politicians of aiming to lower living standards and reversing societal development. This mentality is said to be a result of the normalisation of overconsumption, and fostering societies to believe that excessive consumption patterns are preconditions to a normal and healthy lifestyle.

For the most part, consumption is driven by habits and is automatic rather than deliberate (Warde, 2014). However, habits are mostly not formed by the individual, but instead created and reinforced by peoples social and material surroundings, the people and the infrastructure around us. The infrastructure within the society around us therefore makes some habits and actions appear more appropriate and hence more likely. These habits are the core cause of the establishment of social norms, in this case making high levels of consumption the norm in many societies. These norms can then become uncomfortable obstacles in the way of societal reform, and can really change the possibilities of finding alternative ways of living.

Further, and building upon the concept of social acceleration mentioned earlier, Wethal and Hansen (2023) discuss what role convenience plays in an age where people regularly find themselves in a shortage of time. Consumption is therefore structured to become increasingly streamlined as businesses find ways to encourage consumption by making it easier and more efficient to consume, thereby causing people to consume even more. These streamlining processes can be seen across different industries and are illustrated in the concept of McDonaldization by George Ritzer (1993). This concept refers to society as a whole adapting the efficiency and predictability models of fast-food chains, thereby also showing how modern life values speed, efficiency and standardization over quality and human experience. This type of transformation, as discussed above, will inevitably be a barrier towards the implementation of pro-environmental behavior in individuals' daily lives.

2.2 Pro-environmental Behaviour

Pro-environmental behavior (PEB), also referred to as sustainable or ecological behavior, is defined by an individual's conscious intent to nurture and protect the environment through their actions (Tian & Liu, 2022). Research on PEB has become a significant topic in science, driven by the growing urgency to take action against the climate crisis.

Desirable consumption behavior falls under the private sphere of PEB, which is characterized by habitual tendencies rather than deliberate, awareness-driven actions (Lou & Li, 2022). Previous research has established correlations between private PEB and various psychological theories, aiming to map the internal factors and cognitive prerequisites that influence individual decision-making. Other studies have explored PEB through a sociological lens, situating it within external contexts, such as interpersonal relationships, group dynamics, societal structures, and environmental influences.

An important direction for future research is to integrate both internal and external perspectives on PEB, bridging psychological and sociological approaches. Additionally, there is a need to explore practical applications of these theoretical frameworks in real-life contexts (Tian & Liu, 2022).

2.3 Fundamental Needs and Emotions

In the process of understanding consumption patterns and their connection to human needs and emotions, it is relevant to explore various motivational and emotional models and how consumer behavior is reflected in each of these models.

Firstly, one of the most historically relevant motivational models is Maslow's hierarchy of needs, comprising a five-tier model of human needs. From the bottom of the hierarchy up, the needs begin at the physiological level, moving to safety needs, love and belonging, esteem, and self-actualisation (Maslow, 1943). The core concept of the model is that needs lower down in the hierarchy need to be satisfied before an individual can divert their attention to higher needs. Brands use this motivational model to their advantage by understanding how their product serves the user at each stage of the hierarchy and adjusting the product to specialize in that category. Luxury experiences will for instance often be marketed to consumers on the self-esteem stage while essential products will market functionality and safety aspects (Swifterm, 2023).

Amidst emerging criticism of Maslow's hierarchy of needs through the years, another motivational model is explored. Max Neef proposes a motivational model which depicts a few, finite and classifiable needs which never change over time, over contexts, or over cultures. These needs are the same across all societies, however the needs are met with satisfiers that are formed and altered depending on culture, context, norms and time (Max-Neef et al. 1989). The satisfiers for the fundamental human needs are categorized into five different classes; destroyers, pseudosatisfiers, inhibiting satisfiers, singular satisfiers and synergic satisfiers. Explained shortly, destroyers pretend to satisfy a need while actually inflaming it, pseudosatisfiers give false senses of satisfaction, inhibiting satisfiers satisfy one need by inhibiting the satisfaction of others, singular satisfiers satisfy one need only, and synergic satisfiers satisfy many at the same time.

Among these categories, pseudosatisfiers and synergic satisfiers are particularly interesting to explore in the understanding of the reflection of consumption behavior. Firstly, synergic satisfiers contradict the work of Maslow by suggesting that various fundamental needs, from across the height of a potential hierarchy, can be satisfied at the same time. This is exemplified with the act of breastfeeding a baby which satisfies the needs of subsistence, protection, affection and identity. The argument is that these kinds of satisfiers similar to breastfeeding disprove the existence of a hierarchy (Max-Neef, 2008). Further, a study in the University of Oslo shows that synergic satisfiers can naturally be connected to environmental sustainability by not being detrimental to any fundamental human need. The study also shows that in the case of information and communication technology (mobile phones, radios, etc.), when they enable the emergence of synergic satisfiers, their impact can be seen to be greatly enhanced (Guillen-Royo, 2019). While synergic satisfiers are presented as having a significant link to environmental sustainability and pro-environmental behaviors, pseudosatisfiers are instead the most important for, and a condition to, the reproduction of unhealthy consumption behaviors.

In the words of Max-Neef himself:

“The pseudosatisfiers are a condition for the reproduction of a capitalist system of a neo liberal type of the one we have today. And in this respect, one of the most colossal industries that we have, is the industry of advertisements. Advertising. Why? What is the purpose of advertising? To induce consumption. And in a way, I induce more and more consumption, well, this system can continue reproducing itself. And how do I do it? Well, trying to convince you that you are satisfying a really fundamental human need. You see, if you use this last blue jean, men will go crazy when they look at you. And you in turn, as a man, you have to use this deodorant or this after shave, and they will jump at you, the girls. And then of course you go and buy it, so on and so forth. So if one morning we all would wake up, absolutely sober, and not consume anything that we don't need, the system collapses in 48 hours. Absolutely” (Max-Neef, 2008).

This quite clearly explains the reflection of consumption behaviors in pseudosatisfiers, and the use of them in marketing and the encouragement of excessive consumption patterns.

2.4 Adolescents

Adolescents or young people, typically defined as individuals between 15 and 25 years old, belong to Generation Z, which is a generation growing up amidst significant societal and environmental shifts. This group plays a crucial role in fostering sustainable behaviors, yet they are often portrayed as the primary victims of the climate crisis, as they most likely will bear the consequences of previous generations' environmental degradation (Palupi & Sawitri, 2018). Beyond its direct threats to their physical and mental well-being, climate change also evokes emotions such as hopelessness and anxiety about the future, which can influence

the extent to which they engage in pro-environmental behaviors (Lenhard et al., 2024).

Despite growing climate worry, the gap between environmental awareness and pro-environmental action among adolescents stems from various factors, such as lack of control in decision-making. Their attitudes on sustainability are strongly influenced by their immediate social context, including family dynamics and cultural norms. Additionally, as they navigate the process of self-identity formation, they are particularly sensitive to peer influences and societal trends (Palupi & Sawitri, 2018).

As “digital natives,” adolescents are also exposed to high risk for mental health issues, as consumption of digital services and entertainment became a major part of their everyday lives. Moreover, they are also a primary target for social media advertisements, which shape new consumption patterns and reinforce materialistic values (McKinsey, 2024). To prevent the risks of increasing overconsumption, it is essential to explore how adolescents can actively contribute to sustainable development and what strategies can effectively bridge the gap between their environmental concerns and tangible pro-environmental actions.

2.5 Direction and Delimitations

After compiling the findings of the literature study, the adequate delimitations for the thesis project was to be identified. Initially, the topic of overconsumption emerged as particularly compelling, due to its correlation to both societal phenomenon and individual handling of emotions.

Subsequently, a conceptual ambition was formulated based on the identified gaps in the current research: to support adolescents in reimagining the relationship between humans and consumption. The thesis project wanted to explore ways in which adolescents can be supported to enhance their health amidst a rising need to decrease climate impact. This ambition became a guiding principle for further delimitation. The focus of the thesis project was gradually refined to focus on the emotional dimensions of overconsumption, particularly how individuals engage in consumption to fulfill deeper emotional needs.

In order to address the aim and ambition, overconsumption behaviors and the attitudes towards them amongst the target group have been explored. This was done to create an understanding of the target groups daily life and the self-perceived level of overconsumption exhibited in their lives. Additionally, the importance of identified overconsumption behaviors for adolescents was explored from the lens of fundamental and emotional needs, in order to create an understanding of what needs overconsumption is engaged with to satisfy.

Furthermore, while the theme of overconsumption is relevant across all age groups, the thesis specifically focused on adolescents, particularly upper secondary school students. This age group was chosen for several reasons. First, they are in a formative stage of identity development where long-term habits and values are shaped. They

experience high emotional growth which is a precondition to change in attitude and behavior in relation to surrounding environments (Larson & Brown, 2007). Secondly, they are among those who will be most impacted by the consequences of the climate crisis. Their demonstrated climate awareness makes them a meaningful and responsive group for exploring sustainable behavior change. It is also shown that increased levels of awareness and knowledge of environmental issues also cause great change in attitude and behavior for upper secondary school students (Prabawani et al., 2020). Lastly, the target group excluded adolescents under the age of 18 to partake in research activities due to ethical guidelines for conduction of research and master's thesis.

2.6 Speculative Design as a Catalyst for Change of Worldview

In light of the project's aim to challenge overconsumption, encourage reflection and change of perspective among adolescents, speculative design was identified as a plausible and relevant approach. In this chapter, the recognition of the need for change of worldview is presented. Further, the emergence of speculative design as a suitable approach and its use within the project as well as external speculative projects that have provided inspiration will be discussed

2.6.1 Worldview Change as a Prerequisite for Sustainable Behavior

Before behavior can change meaningfully, there is growing recognition that deeper shifts in values, worldviews, and attitudes must take place (O'Brien, 2018; Ives et al., 2019). This idea aligns with theories of social acceleration and resonance, where the experience of meaningful connection or resonance requires a redefined relationship between the self and the world.

However, striving for such transformation is not without ethical concerns as it risks becoming culturally invasive (O'Brien & Selboe, 2015). Rather than viewing people as objects to be changed, it is essential to see them and empower them as subjects of change, capable of contributing to broader systemic shifts.

This thesis embraces a perspective where the designer's role is to create the conditions for reflection and social consciousness, not to dictate behavior. Speculative design emerges as a relevant framework, especially when practiced in combination with design for sustainable behavior. It offers a way to ethically explore and challenge values, enabling emotional engagement and space for imagining alternative futures (Dunne & Raby, 2013).

2.6.2 Speculative Design

As a broad term, speculative design is a framework used to help individuals look into and speculate about the future. It is used to build future scenarios and experience

new perspectives, thereby exploring and understanding complex problems (Vinnova, 2022). The approach can be used as a catalyst for exploration of processes for identification of emotional needs for the individuals' overconsumption behaviors and increased self-efficacy. Rather than aiming to immediately solve a defined problem, speculative design enables the creation of artefacts or experiences that provoke thought, question norms, and imagine alternative futures. In this project, it served as a foundation for developing a trigger product, a designed experience meant to prompt emotional reflection and shift perspectives around consumption.

In practice, speculative design allows for exploration of interventions that go beyond conventional solutions. For instance, a potential outcome might be an installation where participants engage in symbolic or simulated consumption activities and are invited to reflect on the emotional needs these behaviors are tied to. The intention is not to prescribe behavior change directly, but to provide a space for self-discovery and critical engagement with everyday habits.

Speculative design, as framed by Dunne and Raby in *Speculative Everything: Design, Fiction, and Social Dreaming* (2013), is a design practice that challenges assumptions and invites audiences to explore what could be rather than what should be. Unlike traditional user-centered or problem-solving approaches, speculative design intentionally creates ambiguity, contradiction, and open-endedness. It seeks to reimagine habits by exposing the values and ideologies embedded within them.

Dunne and Raby emphasize that speculative design is not predictive but provocative and its purpose is not to forecast the future, but to make alternative futures thinkable and discussable. It operates in a space between science fiction and real-world plausibility, using designed artefacts to materialize possibilities that might otherwise remain abstract. These artefacts, commonly known as trigger products, can function as "what if" scenarios that enable people to engage with complex social issues, such as climate change, automation, or consumption. In doing so, speculative design creates a platform for imagination, questioning the trajectory of our society and making room for cultural or behavioral shifts.

In the context of this thesis, speculative design is used as a reflective tool to make sustainability emotionally resonant and personally relevant for adolescents. By embedding speculative thinking into the design process as well as the final design, the project aims to stimulate empathy, self-reflection and critical thinking. The speculative mindset applied in this project has been inspired by earlier works that use design fiction and immersive narrative to explore social issues. The following section introduces some sources of inspiration.

2.6.3 Trigger Product Design Inspirations

Additionally, it is relevant to highlight some of the work that has inspired the initiation and result of this thesis project, some of which embrace speculative design as a foundational framework in the developmental phases, and some that do not.

Vinnova, Sweden's innovation agency, promotes future-oriented processes and has developed tools using speculative design, such as Nova, a card-based tool for norm-creative innovation. It addresses the lack of user centrality in current products and services by highlighting how norms and values influence innovation and limit user needs (Vinnova, 2025).

Nova is structured like a 52-card deck, divided into four suits: societal norms, creative tactics, examples of norm-creative innovations, and different examples of ways in which the same type of product can take shape. While not directly focused on the future, the cards help imagine alternative realities where limiting norms are removed, encouraging reflection and new thinking.

In another project titled *Preventionsmottagningen*, Vinnova explores the quantity of sacrifices individuals are willing to take in order to receive detailed information about their health and well-being. In a speculative preventive care center, the participants are asked to give a genetic sample through their saliva, a digital sample by giving up their mobile phone, and finally to swallow a pill. To complete the interaction, the participants are given the possibility to visit the final station, the Oracle, an AI that can predict all the future health risks of said participant based on their microbiome data. Of course, this is all imaginative and simulated, but the installation explores the implication of science and technology for the future healthcare system: What if healthcare will be more based on prediction because we simply are able to know much more in the future? And if you as an individual would be able to know about the risks you face for your health, would you want to know that and would it be enough of a trigger to change behavior or lifestyle? Through experiencing it in a tangible format, insights and opinions are generated for the participants, which is important in the imagination of possible futures (Vinnova, 2023).

Another inspiring project specifically connected to environmental sustainability is *Matplikten*. Executed by a number of actors, two of which are the collaborator of this thesis project *Digidem Lab* and Vinnova, *Matplikten* explores a future where instability and vulnerability in society has caused governments to implement an obligatory yearly food service for civil society. The civil food service would force all citizens to participate in a sustainable initiative for four weeks every year. Simultaneously, there would be a scoring system which benefits sustainable choices. This simulation includes a set of future prototypes, one of which is the food service glove. This is to be used while performing the yearly food service in order to create fellowship and solidarity with earth. The glove provides functions that allow the user to gain information about the status of the earth, in order to create a deeper sensorial experience of plantation and management of the ecosystem. This kind of prototyping elevates the experiences from imagining to doing, and helps the participant answer questions like how a system can balance our freedom and obligation, and whether or not trust can be rebuilt through collective obligation and responsibility (Visual Arena, 2025).

Finally, an overview of the work done within the theme of narratives, storytelling and gamified experiences has been important for the thesis project. One of the outstanding inspirational projects is *Survive the Century*, is a branching narrative game showcasing the impact of political, environmental and social choices that humans will make in the coming century. While being pure fiction, it is inspired by factual science and puts the player in a position where actions and choices result in real consequences. This project is also important for the understanding of what storytelling, in combination with interactivity, can provide for future insight (*Survive the Century*, 2021).

3 Phase I: Mentality Exploration

Phase I of the thesis comprised a study titled Mentality Exploration, which investigated adolescents' attitudes and emotional drivers behind (un)sustainable behaviours in everyday life. The aim was to translate the theoretical background into practice by observing how sustainability-related mindsets manifested in a real-world context. In doing so, the study sought to uncover emotional preconditions for behavioural change among adolescents.

The core of Mentality Exploration consisted of facilitated workshops conducted at two upper-secondary schools in Gothenburg. During these sessions, participants engaged with a custom-designed questionnaire booklet, allowing them to reflect on their lifestyle choices and their relation to sustainability.

3.1 Method Across Phase I

The Mentality Exploration study was carried out through four main steps: the iterative design of a questionnaire booklet, recruitment of adolescent participants, facilitation of workshops for data collection, and data analysis of the responses. This procedure is illustrated in Figure 3.1.

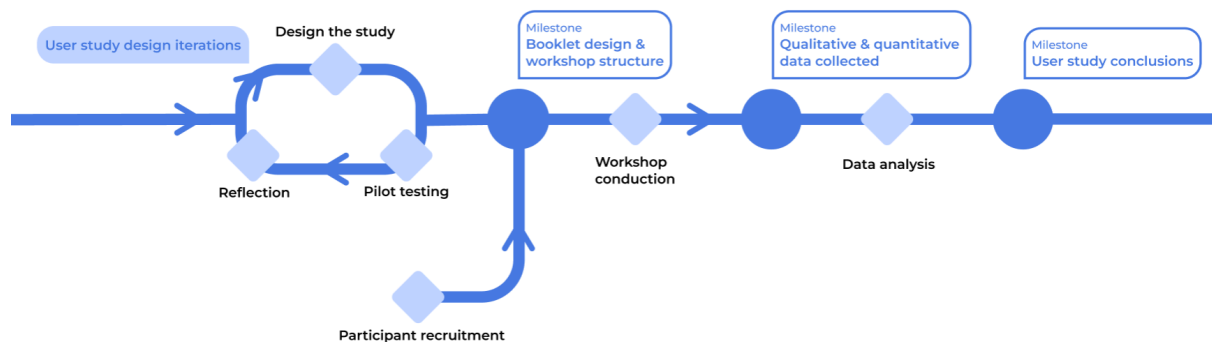


Figure 3.1. Process map of Phase I.

3.1.1 Designing the Questionnaire Booklet

The primary tool for data collection in Mentality Exploration was a questionnaire booklet developed through multiple iterations of planning, pilot testing, and refinement. The final version (see Appendix A) was designed to support deep individual reflection while remaining accessible and engaging. It was structured into three thematic sections:

- **My Everyday**
- **Sustainability to Me**
- **Chosen Behaviours**

The first section, *My Everyday*, encouraged reflection on daily behaviours in general. Various scenarios were provided as prompts to trigger brainstorming of various

types of everyday behaviours, as seen in Figure 3.2. This setup created preconditions for adolescents to start reflecting about their lifestyles and daily activities, which acted as warm-up for the subsequent sections of the booklet.

Min vardag...

Här kommer lite frågor och alternativ, skriv gärna in några av alternativen som passar. Passar inget av alternativen? skriv in dina egna under alternativet "annat".

Detta gör jag varje dag. Det känns fel annars.

1. * _____ 4. _____
 2. * _____ 5. _____
 3. _____ 6. _____

Detta gör jag regelbundet på min fritid.

1. * _____ 4. _____
 2. * _____ 5. _____
 3. _____ 6. _____

Jag gör detta för att unna mig i vardagen.

1. * _____ 4. _____
 2. * _____ 5. _____
 3. _____ 6. _____

Jag gör detta när jag inte orkar göra något annat, eller när jag är uttråkad.

1. * _____ 4. _____
 2. * _____ 5. _____
 3. _____ 6. _____

Jag gör detta när jag har tid att ha väldigt kul.

1. * _____ 4. _____
 2. * _____ 5. _____
 3. _____ 6. _____

* Obligatorisk

* Obligatorisk

Figure 3.2 My Everyday pages in the booklet. Some of the given scenarios were “I do this everyday. Otherwise it feels wrong.” “I do this regularly during my free time.” and “I do this when I don’t have the energy to do anything else, or when I am bored.”

The second section of the booklet, *Sustainability to Me*, included reflective questions about participants’ associations with sustainability and its importance, see Figure 3.3. These questions aimed to help participants define what sustainability meant to them. The responses allowed us to gather data on current sustainability mindsets among the participants. This section concluded with participants selecting three behaviours from My Everyday that they considered least sustainable, based on their personal definition of sustainability.

Hållbarhet för dig...

Du kommer att få svara kort på vad hållbarhet innebär för dig och vad du associerar med hållbarhet.

Saker jag associerar med hållbarhet?

Är hållbarhet viktigt eller oviktigt?
Varför / varför inte?

Välj 3 aktiviteter, baserat på din formade definition av hållbarhet, som du anser är mest ohållbara...

1. _____

2. _____

3. _____

Figure 3.3 Sustainability to Me page in the booklet.

The third and largest section, *Chosen Behaviours*, shown in Figure 3.4, extended the reflection on the chosen unsustainable behaviours. Participating adolescents were first asked to explain openly why they had selected each behaviour. They were then asked to map the emotions associated with these behaviours using a version of the Geneva Emotion Wheel (GEW), which was adjusted for the context of this particular study. Only 12 of the emotions in the original GEW were included to ensure relevance of the emotions, as well as minimising the mental load for using the GEW. The emotions were chosen by eliminating those that were deemed irrelevant for the subject, for instance the feeling of jealousy. The GEW was incorporated to engage participants through a dynamic form of quantitative data collection. It also generated immediate visualisations useful in the analysis phase.

After completing the GEW, participants rated the importance of each behaviour to them, as well as its sustainability in a general sense, using a 7-point Likert scale. Items connected to importance covered areas such as life fulfillment, identity, and meaningfulness, while sustainability ratings covered material use, physical and mental health impacts, and ethical considerations.

A second Likert scale guided participants to reflect on their willingness to change the behaviours, as well as the preconditions for change. They answered whether they had reflected on the behaviour through the study, and whether they were willing to change it. They also rated their perceived capacity for change in terms of knowledge, social acceptance, time, and energy. Finally, space was provided for concluding comments on the selected behaviour.

01

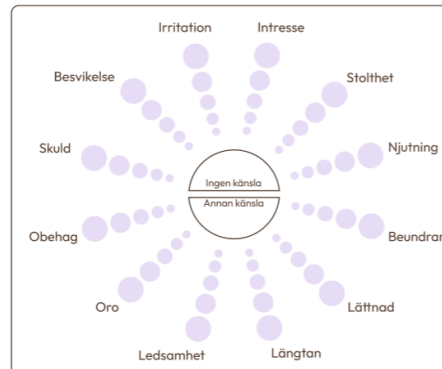
Vald aktivitet:

Varför anser du det vara ohållbart?
Något överlag? Något som särskilt du gör?

Vilka känslor förekommer innan, under och efter aktiviteten?

Kryssa i cirkelarna från innerst till ytterst. Ju mer du känner en känsla, desto fler cirklar ska kryssas i.

OBS vissa känslor i figuren kan vara irrelevanta för en vald aktivitet, det är helt okej att hoppa över dem.



Annan känsla:

Hur skulle du placera denna aktivitet i dessa påståenden?

Kryssa i en av rutorna i skalan som representerar din åsikt.



Baserat på dina svar och reflektion, hur skulle du ta ställning till detta?

Kryssa i en av rutorna i skalan som representerar din åsikt.



Figure 3.4 Chosen Behaviours pages in the booklet. The GEW and Likert scales were conducted for every chosen behaviour. The participants were able to choose up to three behaviours for this section.

3.1.2 Participant Recruitment

The adolescents who participated in the study were recruited via contact with two classes at two different upper secondary schools in Gothenburg, Sweden. To ensure that all participants were over 18 years old, the thesis group targeted third-year classes and visited them during regular school hours. To minimise disruption to their

education, the user study workshop was designed to fit within a classroom environment and require minimal time and effort from the participants.

3.1.3 Mentality Exploration Workshops

Data collection was carried out through two workshop sessions, one at each participating school. Each workshop consisted of multiple small group sessions with 6–8 participants, each lasting approximately 20 minutes. In total, 52 adolescents participated, see Figure 3.5.

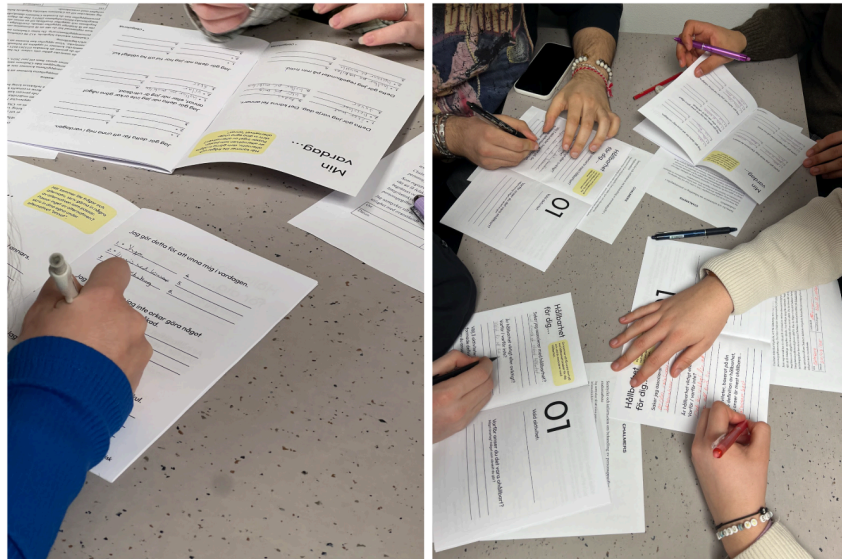


Figure 3.5. Photos from the user study workshops, where a group of participants completed the questionnaire booklet together.

At least one thesis group member was present at the group sessions of the workshops as facilitator. The sessions began with a verbal introduction to the thesis project, followed by a brief walkthrough of the booklet. While the participants completed the booklet, the thesis group member observed and provided help where needed. The booklet format ensured that instructions and guidance were always available to each participant, thereby reducing the need for direct assistance. Swedish was used throughout the study, both verbally and in the booklet, based on the assumption that upper secondary school students would be more comfortable using Swedish.

3.1.4 Analysis of Collected Data

To analyse the data collected from participants, a mixed methods approach was used, combining descriptive statistics with qualitative clustering. Quantitative data, such as responses from the Geneva Emotion Wheel (GEW) and Likert scale ratings, were analysed to detect patterns in emotional responses and perceived importance of various unsustainable behaviours. Qualitative data, including participants' reflections to the open-ended questions in various sections of the booklet, were clustered using the KJ method to identify common themes and underlying needs.




These methods were chosen to provide both measurable trends and in-depth insights into the emotional and motivational factors behind overconsumption.

3.2 Findings

The quantitative data included 102 self-identified unsustainable behaviors from participants' everyday lives. Reflections on these behaviors were partly quantified through four item categories: emotions, importance, sustainability, and potential for change. These categories were derived from the Geneva Emotion Wheel (GEW) and Likert scales, and were translated into numerical scores. A summary of categories of data items is available in Table 3.1.

Table 3.1 Summary of item categories of the quantitative and the qualitative data from the user test.

Qualitative Data Items	Quantitative Data Items
Things associated with sustainability	Unsustainable everyday consumption behaviours (Behaviours)
Reasons why sustainability is important/not important	Emotions associated with the chosen behaviour from Geneva Emotion Wheel (Emotions)
Reasons why a behaviour was chosen as one of the most unsustainable behaviours	Importance aspects of the chosen behaviour from Likert scale (Importance)
Further comments on the chosen behaviour	Sustainability aspects of the chosen behaviour from Likert scales (Sustainability)
	Preconditions for changing the chosen behaviour from Likert scale (Preconditions for change)

	data from <i>My Everyday</i>
	data from <i>Sustainability to Me</i>
	data from <i>Chosen Behaviour</i>

3.2.1 Insights From Qualitative Data

With regards to the “*Sustainability to Me*” section of the booklet, the participants' entries were by majority related to four themes: personal wellbeing, economical aspects, the environment and societal aspects.

In relation to personal wellbeing and personal economic prosperity, the analysis revealed a more detailed and specific articulation in their formulations. To the question about their associations with sustainability, some of the entries within this theme were:

“Not being on my phone for too long.”

“Do things in a reasonable manner, work out sustainably, not too little and not too much, chill a reasonable amount. Be reasonable.”

“Things should not cost too much money.”

Aligned with the themes of the environment and society, the majority of entries were formulated along the likes of:

“The environment.”

“Whatever is sustainable for the climate.”

“A sustainable future.”

“Equality.”

Further, when asked about the importance of sustainability, the entries related to personal wellbeing continued along the same track of detailed formulations such as:

“Important because I want the climate to remain the same so I can go skiing in the future.”

“It is important because people who are not as comfortable are affected and I do not want to lose my comfort in my life.”

In contrast, within the themes of the environment and society, common entries were:

“It is important for the future.”

“It is important, otherwise something can be damaged.”

“It is important because we have one planet.”

The analysis showcased that upper secondary school students can identify in a much more precise and accurate way why it is that sustainability is important to them with regards to personal aspects. It was relevant to mention that the utmost

majority of entries positioned themselves positively to the importance of sustainability, with some minor exceptions.

Further on from the “*Chosen Behavior*” section of the booklet, the adolescents motivated their choices of unsustainable behaviours and explained their personal reasoning for the unsustainability of said behaviours. In connection to the theme of personal wellbeing, some mentioned behaviours were unhealthy diet, phone usage and partying. The explanations accompanying these behaviours often mentioned the harm to personal physical health that comes with alcohol consumption at parties and things such as fast food in an unhealthy diet. Examples of explanations were:

“Eating ice cream feels good at the moment but makes me go up in weight and is bad for my health.”

“I feel unwell from partying due to the fact that I drink and ruin my coming day.”

For phone usage, time waste and addiction were mentioned with common explanations being:

“It affects me mentally as it's very addictive.”

“Sometimes it's easy to just sit there and do nothing but be on the phone, you don't get anything important done.”

In connection to the environment and society however, the most prevalent behaviours were shopping and a variety of transportation related behaviours such as travelling by plane and car. The accompanying explanations followed the trend of higher abstraction level and are formulated as:

“Travelling is bad for the environment.”

“Overconsumption.”

The analysis revealed a tendency of lower abstraction in the communication when connecting sustainability with personal aspects does exist within the target audience. The entries showed a strong incline in the abstraction levels when the topic relates to bigger and more unclear concepts like the environment and society as a whole. It appeared to be easy for the participating adolescents to communicate from a personal point of view how a lack of sustainability might affect the ability to perform certain activities in their life that provide feelings of joy or comfort.

However, there was an apparent barrier in the mentalities of adolescents obstructing the creation of a clear and concrete idea of why sustainability is important from an environmental and societal point of view. Despite the association of the environment and society to sustainability being commonly established by the participants, they lacked the ability to describe specifically what they care about

with the environment. It also seemed to be difficult to identify how their lives were affected by environmental and societal change, something they did efficiently for wellbeing aspects.

The lack of specification reflected the narrative of sustainability that is common in society (through media, news, education about sustainability at school, in textbooks etc). It reflected that developing towards sustainability is a clear goal that the whole of society shares. However there might be a gap between the general view on sustainability and personal experience and prioritisation.

3.2.2 Quantitative Data Supporting the Qualitative Insights

The quantitative data served as a support for the findings derived from the qualitative data in the study. The data was divided into the frequency of mentions for different unsustainable behaviours, the emotions felt in relation to them, the importance of said behaviours in the participants' lives and the perceived sustainability or unsustainability of them. Finally the adolescents assessed their willingness to change, and the preconditions in their lives for achieving change.

Due to the large quantity of the data, only the most mentioned behaviours were taken into account in the analysis. These behaviours are listed in Table 3.2 and made up of 81 of the 102 mentioned unsustainable behaviours collected by the booklets. The majority of these behaviours were chosen by the participating adolescents due to reasons related to personal life, for example phone usage, unhealthy diet, partying and watching TV. Some other behaviours, such as shopping and travelling were often chosen for their negative impact on the environment.

Table 3.2 The chosen unsustainable behaviours that were mentioned the most.

Chosen Behaviour	Count
Shopping	16
Phone usage	15
Unhealthy diet	12
Travelling	9
Partying	7
Driving car	6
Gaming	6
Watching TV	4
Skincare/makeup	3
Food waste	3

Further, the emotional experience for the respective behaviours was mapped out and the behaviours were categorized accordingly. Based on the dominant emotions connected to the behaviours, they were divided into the following groups: 1 Interest-driven, 2 Pleasure-driven, 3 Pleasure- and interest-driven, as well as 4 Pleasure- and longing-driven, see Table 3.3.

Table 3.3 categorization of emotional mapping for mentioned behaviours

Group	Behaviours
1. Interest driven	Phone usage, watching TV, Gaming
2. Pleasure driven	Shopping, travelling
3. Pleasure- and interest driven	Unhealthy food, partying, food waste
4. Pleasure- and longing driven	Skincare, driving car

It was clear that almost all the activities mentioned had pleasure as the main driven emotion, except for the first group consisting of Phone usage, Watching TV, and Gaming. Group 1 behaviours also had a higher average of experienced negative emotions, which corresponds to the absence of pleasure as a dominant driver.

Besides the emotions, the collected data of perceived importance and sustainability of each behaviour were also visualised in relation to each other. The coordinate system in Figure 3.6 was plotted with the x-axis for score of importance in life, and y-axis for score of sustainability. The plot revealed a lower sustainability and importance rating for group 1 specifically. Though there was no claim that this visualisation was objectively accurate, it suggested that participants were aware of the negative effects of these activities and considered them relatively impactful for their lives.

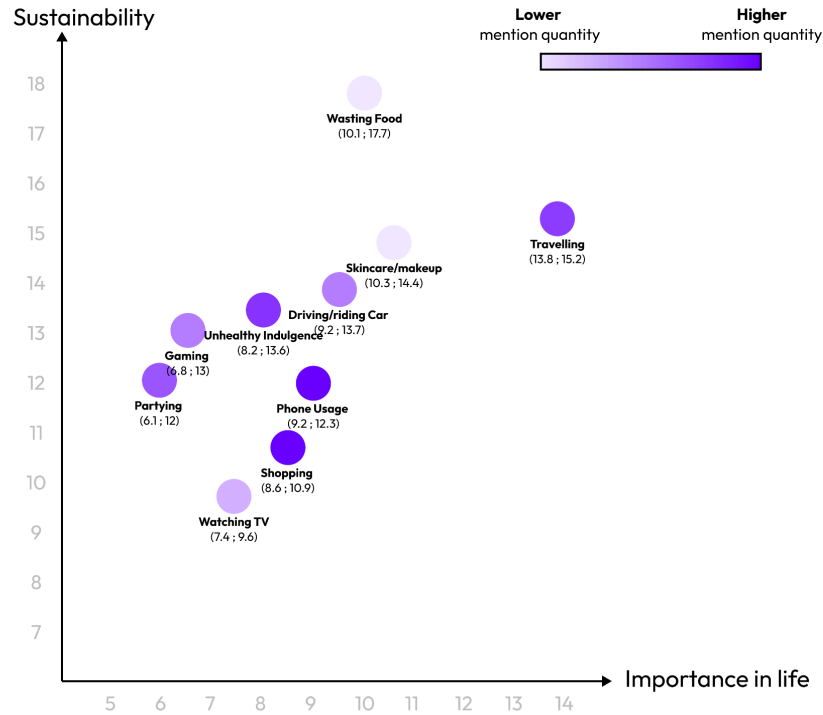


Figure 3.6 Perceived importance and sustainability for mentioned behaviours. The coordinates of each behaviour was created when the corresponding Likert scale items in the booklet were summed.

The quantitative data supports the analysis of the qualitative data by showing the frequency of mentions of activities that are perceived as unsustainable due to their effect on personal wellbeing. Activities like Phone usage, Watching television and Unhealthy diet are often chosen as unsustainable activities due to the participants prioritisation of personal wellbeing. While Shopping is in a similar area in the plotted coordinate system, there is a significant difference in the expressed willingness to change behavior by the participants. In the likert scales, the quantified scores for willingness to change reached 4.2/6 for Phone usage and 4.3/6 for Unhealthy diet, while only reaching 2.9/6 for Shopping and 2.4/6 for Travelling.

3.3 Takeaways From Phase I

Essentially, the outcomes proved the need to design a trigger product which bridges the gap between the abstract concepts related to sustainability and their connection to the concrete sustainability problems in everyday life. Based on the analysis of both qualitative and quantitative data, a number of takeaways emerged:

- Personal framing of sustainability was more tangible. Adolescents demonstrated a notable ability to connect sustainability with their personal lives, particularly when discussing how unsustainable behaviors might limit activities that bring them comfort or joy. This communication tended to be highly specific and grounded in their own experiences.
- Abstraction increased for problems with distanced consequences. When the discussion shifted to broader sustainability concerns, such as the environment or society at large, the level of abstraction increased significantly. Participants did not articulate clear, concrete reasons for the importance of sustainability on these scales, which suggested a mental barrier to internalizing these larger issues.
- Emotional connection to environmental and societal issues was absent. While most participants could readily associate sustainability with the environment and society, they found it difficult to specify what aspects of these larger systems they care about, or how such issues affect them personally. This contrasted sharply with the clarity they exhibited when discussing impacts on personal wellbeing.
- The entries relating to environmental, societal and planetary wellbeing often mimics formulations that can be seen in media, news and educational content. This could indicate that expressed opinions and reflections were mostly inspired by these common views rather than personal affiliations and personal experiences.
- Willingness to change unsustainable behaviors with direct personal consequences was significantly higher than for behaviors with environmental consequences that feel distant from one's personal life. This further underscored the prioritization of more relatable aspects of sustainability, such as personal wellbeing, over broader environmental challenges.

4 Phase II: Provoking Reflection Through Design

The activities from the first phase laid a solid foundation for the development of the trigger product. This chapter presents the second phase of the thesis project, which focused on developing a trigger product based on the insights gathered from the mentality exploration phase. The product was intended to facilitate reflection among adolescents on their consumption behaviours and the emotional needs that drive them. The goal of this phase was to explore how such a product could be conceptualised, developed, and evaluated using design methods.

4.1 Method Across Phase II

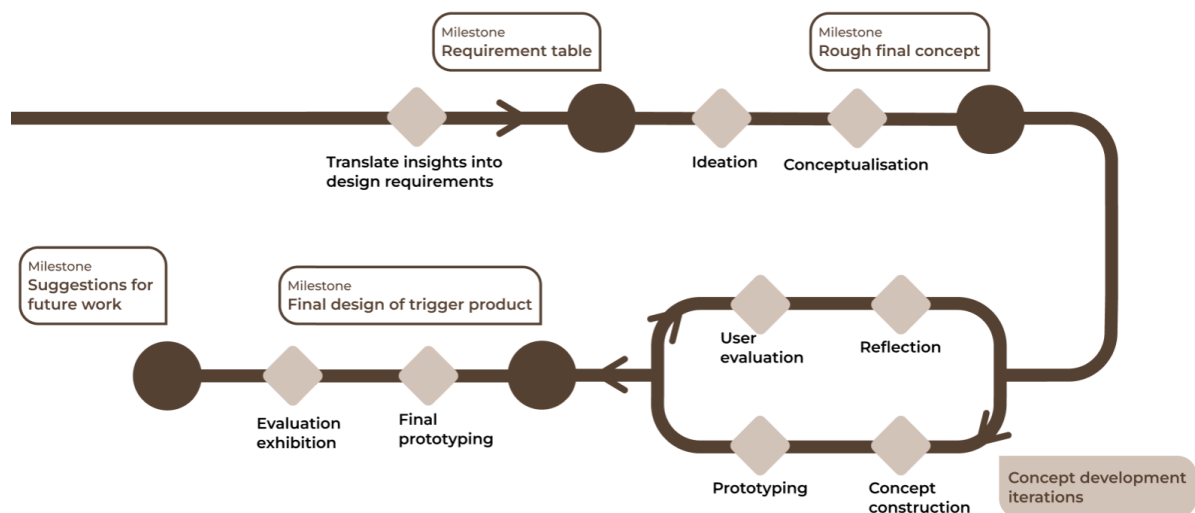


Figure 4.1 Process map of Phase II.

The design activities of Phase II were structured to support both divergent and convergent exploration of the solution space. The process moved from translating analysis conclusions from the previous phase into design requirements, generating a variety of ideas, to deciding design direction and developing the holistic final concept. Finally the trigger product was also evaluated in an exhibition setting. Figure 4.1 provides an overview of the process.

4.1.1 From Insights to Concept Direction

The process of designing the trigger product began with translating insights from the user study into a requirement table, which structured the key findings into actionable design criteria. The construction of the requirement table included identifying hierarchies among the criteria, as well as categorising them to ensure high utility for subsequent design activities.

After completing the requirement table, ideation was carried out in both unstructured and structured formats to generate a broad range of ideas. The unstructured ideation sessions happened spontaneously, as braindumping whenever ideas occurred throughout the project. In contrast, the structured idea generation sessions had specific themes and utilised established ideation methods such as Brainwriting and the Morphological Chart.

To support idea development and facilitate comparison, ideas were elaborated and combined into design concepts. These concepts were more detailed and embraced different manifestations of both the form and content of the trigger product. In the end, three distinct concepts were developed. These were then compared against each other using the requirement table as a reference, in order to identify the most promising one. The concept with the strongest potential was selected and served as the foundation for the design iterations that followed.

4.1.2 Iterative Concept Development

To further explore and refine both the content and format of the chosen concept, the design process was carried out through iterative cycles. Each cycle involved shaping and detailing the idea, prototyping it, and conducting an evaluation workshop with adolescents followed by a reflection session.

The evaluation workshops were conducted at the IDE Master Studio at Chalmers University, each lasting approximately one hour and following a similar structure. Participants were first introduced to the session, then interacted with the prototype through a series of story-based stations, and finally took part in a group discussion facilitated by the thesis group. User interactions were documented through note-taking and audio recordings. Roles during the sessions were divided between facilitation, observation, and active participation in the installation performance.

Iteration 1: Validating the Initial Concept

The goal of the first workshop was to evaluate the rough concept of the storytelling concept and to validate the design direction. At this stage, the focus was on assessing whether the content resonated with the target group and whether the symbolic framing showed potential for supporting reflection and engagement.

Three participants were recruited through the thesis group's social network. During the workshop, they engaged with a low-fidelity prototype consisting of printed text and hand-drawn illustrations, as shown in Figure 4.3. The materials were arranged on separate tables in the evaluation space, which formed a sequence of stations that the participants walked through during the session.



Figure 4.3 The setup and material of the storytelling installation in the first iteration.

Iteration 2: Adding Interactivity

Based on feedback from the first evaluation workshop, the focus for the second interaction was on adapting the content more to adolescents, as well as enhancing user engagement and deepening reflection through improved interactivity and visual clarity.

Two participants participated in the second session and interacted with the prototype together, as seen in Figure .44. Although they were friends to one of the thesis group members, they did not have prior knowledge about the thesis project. For this workshop, the prototype was refined and presented using mounted kapa boards to improve visual clarity and structural stability, see Figure 4.5. Each section of the story was attached to an individual board and spread throughout the room.



Figure 4.4 Photos from the second evaluation workshop, where the participants interacted with the storytelling installation.

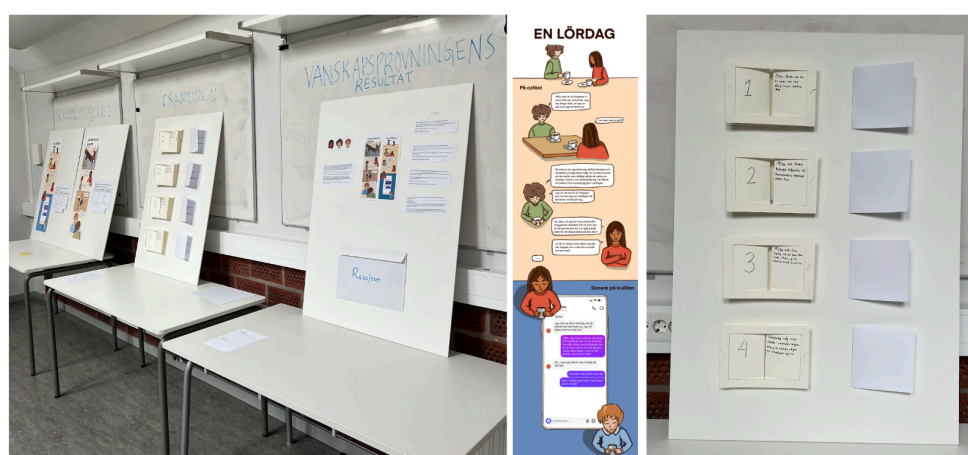


Figure 4.5 The setup and material of the storytelling installation in the second iteration.

The iterative approach allowed representatives of the intended user group, adolescents above the age of 18, to be involved throughout the development process. By continuously observing how users engaged with the prototype and collecting their input, the design was progressively adjusted and refined. The concept development process concluded with a high-fidelity prototype representing the final design.

4.1.3 Implementing the Exhibition Context

To finalise the developed concept, a final test was conducted in the form of an exhibition. Participants were invited to interact with the prototype in a setting that reflected its intended context. The goal was to evaluate how well the design functioned within an exhibition environment, with a focus on provoking reflection among visitors and gathering their input for potential future development.

The evaluation took place at the entrance of the Student Union Building at Chalmers University and was open for four hours. Positioned in a high-traffic area,

bypassing people were welcomed to participate. In total, 28 visitors interacted with the installation, consisting mainly of Chalmers students and one representative from Digidem Lab.

A high-fidelity prototype of the concept was used for the event. Like at any other exhibition, participants interacted with the prototype differently. Most engaged in small groups of two to three people, allowing them to discuss and react together throughout the experience. Some participants came alone, which required the thesis members to act as their discussion partners. Some of the interactions were captured in photographs (see Figure 4.6).

In terms of documentation and feedback receipt, participants wrote their feedback on notes and left them at the feedback station. Others communicated their feedback verbally to the thesis group members, which was then documented as digital notes. The digital notes were categorised through the help of a thematic analysis. The process consisted of sorting entries mentioning similar aspects of the installation together to then identify, analyze, and interpret patterns or themes within groupings and connections between them.



Figure 4.6 Photos from the evaluation exhibition, where the participants interacted with the final prototype.

4.2 Generated Results Across Phase II

The design activities described in the previous sections ultimately led to the creation of an interactive storytelling installation that uses the dynamics of human relationships to symbolise the connection between humanity, nature, and consumption. The installation was called *Vänskapsprövningen*. This section presents the key milestones in developing the concept, starting with its foundations: the design requirement table, initial ideas generated through ideation, and the three concepts developed during conceptualisation. It then follows the concept's evolution, detailing how it was shaped and refined through iteratively. Finally, a comprehensive presentation of the final design, including both its narrative content and materialisation, is provided.

4.2.1 Concept Foundations

The foundations of *Vänskapsprövningen* lie in the design requirement table, the ideas generated through ideation sessions, and the three holistic concepts developed from these ideas.

Design Requirement Table

According to Table 4.1, the requirements in the table were divided into two parts: content and form. The content-related requirements were derived from the data analysis from the mentality exploration, focusing on bridging the gap between abstract and relatable sustainability aspects for adolescents. The requirement reflected what the trigger product needed to communicate and provoke in terms of insight and reflection.

In contrast, the form-related requirements emerged from intentions regarding the quality of the interaction. They were considered essential for enabling the intended content to be effectively communicated and emotionally received. The form requirements therefore served as enablers for delivering the content in a way that is meaningful, approachable, and impactful for the participants.

Table 4.1 Requirement table that compiled the design requirements and specifications.

Part of trigger product	Requirement (What?)	Specification (How?)
CONTENT – what the trigger product is designed for, the meaning behind the facilitated interaction, the intended reactions, reflections and effects of interaction with the trigger product	Decrease distance between abstract sustainability concepts and personal life	Illustrate relationship between human, nature and consumption
		Reveal the connection between daily consumption activities and the consequences on nature
		Encourage strengthened relationship between human and nature
		Facilitate for reflection on sustainable way of practicing daily consumption
FORM – the “shell” that facilitates the interaction between the trigger product and the participants.	Generate insight and knowledge	Present facts of the content
		Represent scenarios of the content
	Facilitate engaging and immersive experience	Facilitate accessible and undemanding interaction
		Involve different senses
		Be tangible and presentable at a fair
	Provoke the feeling of encouragement	Mediate positive narrative around sustainability and wellbeing
		Facilitate for the capability to make up a plan for behaviour change

Collection of Ideas

The early ideas were categorised into content and form themes based on the structure of the requirement table (see Table 4.1). Several ideas were inspired by speculative design references and kept intentionally abstract during the ideation stage. These early ideas are presented in Table 4.2.

Table 4.2 Examples of ideas that were documented throughout the ideation sessions.

	Idea	Description
Content-ideas What is the trigger product about?	Futures based on exaggerated variables related to overconsumption	Inspired by previous speculative projects such as Matplikten, these imagined futures represent anticipations, worries, and consequences of overconsumption.
	Revealing present in another context	Changing the context of a phenomenon may help users break free from the social norms surrounding certain aspects of overconsumption, allowing them to generate new reflections about sustainability.
Form-ideas How is the content presented to the users?	Immersive experience of a specific future	Also inspired by Matplikten, this concept gives users the opportunity to experience a context outside their everyday life, one that may be memorable and therefore have a lasting impact on their mindset regarding sustainability.
	Interactive activity for exploring different futures	Instead of exploring futures constructed by the thesis group, this setup allows users to imagine the future freely. It also provides a space for exchanging ideas and fostering discussion.
	Gamified backcasting of a future	Inspired by previous projects like Survive the Century, this concept uses games as an intuitive way for adolescents to gain insights. A backcasting game helps users reflect on the path from present to future, potentially making behaviour change feel more concrete and achievable.
	Fact-based inspiration kit for behaviour change	Inspired by projects such as Nova, this concept involves a kit containing cards, brochures, or other graphic elements designed to raise awareness about sustainability. It makes know-how related to behaviour change more accessible and engaging.

The Three Concepts

When the ideas were conceptualised, some of the form-ideas and the content-ideas were matched and merged into holistic concepts. In total, there were three concepts that were elaborated.

Concept 1: Board game showing dynamics between different stakeholders in consumption

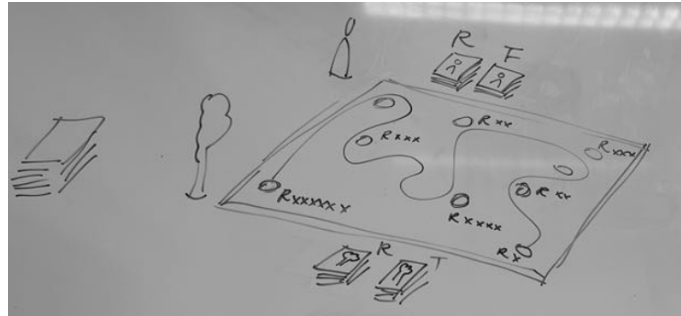


Figure 4.7 Sketching concept 1. The game board is a map with locations where interactions between the players will be designed.

This concept, as shown in Figure 4.7, merged the content idea of “Presenting the present in another context” with the form idea of gamification. It took shape as a board game where players assume different stakeholder roles within a consumption ecosystem. Each player had specific motives and limitations, and the goal was to collaborate in creating a sustainable system. The game format enables reflection on system dynamics, power relations, and trade-offs, while lowering the barrier to engaging with abstract sustainability issues.

Concept 2: Educational tool for exploring the pasts, presents, and futures of consumption

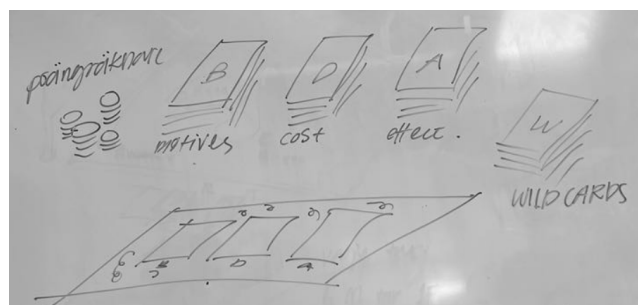


Figure 4.8 Sketching concept 2. Different card decks contain information about the motives, cost and consequences of different types of consumption behaviours.

This concept, as shown in Figure 4.8, brought together exaggerated speculative futures, fact-based inspiration, and interactive exploration of alternative futures. It was structured as a toolkit containing cards that represent three temporal layers: the past (motives and emotional needs), the present (costs and behaviours), and the future (consequences). The setup facilitated personalised speculation and discussion, enabling users to explore how consumption behaviours evolve and what long-term effects they may generate. It was designed to encourage users to construct their own future narratives based on everyday choices.

Concept 3: Metaphorical storytelling about the abstract relations in sustainability

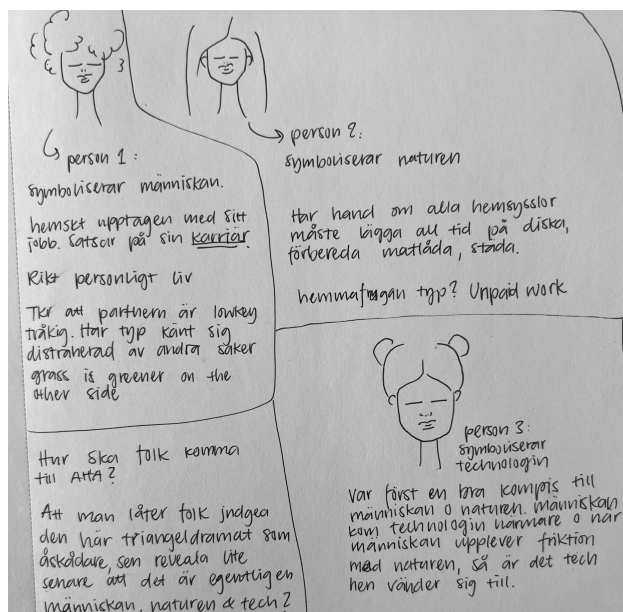


Figure 4.9 Documentation of concept 3. The initial sketches of the characters in the metaphoric storytelling.

This concept merged the content idea of *Revealing the present in another context* with the form idea of interactive future exploration. It built on storytelling as a way to make abstract sustainability topics more relatable to adolescents. By embedding sustainability challenges within a symbolic and familiar narrative, as seen in Figure 4.9, the concept provided a space for users to reflect on consumption behaviours and emotional needs without confronting them directly. Through discussion and guided interpretation, participants could explore how seemingly ordinary experiences relate to larger systemic issues.

Choosing final direction

The three holistic concepts described above were evaluated based on how well they addressed the requirements outlined in the requirement table. While all three concepts offered valuable perspectives, Concepts 1 and 2 were eliminated due to difficulty in reaching convincing completeness. Concept 3 was considered the most promising, as it provided a cohesive and symbolic experience with strong potential to meet the project's goals.

Concept 3 was built around a symbolic narrative conveyed through storytelling. Storytelling was chosen as the main content format due to its strength in expressing abstract ideas and emotional dynamics through metaphor. This approach was considered particularly suitable for making sustainability-related themes more relatable to the target group, as it allowed users to engage with complex topics through familiar and emotionally grounded scenarios.

4.2.2 Concept Evolution

During the concept development iterations, the design of the concept 3 evolved from abstract to detailed and complete.

Initial Concept Design

Based on the initial form of Concept 3, the overarching narrative of the storytelling centred on three characters, three friends whose personalities and relationships symbolised different dimensions of the current dynamic between human, nature, and consumption. The symbolic nature of the characters was intentionally hidden at the beginning. Initially, the story was presented as a social situation among friends. As the narrative unfolded, the underlying metaphor was gradually revealed, with the aim of creating a moment of realisation that connected the storyline to broader societal and environmental issues. Through this design, the gap between abstract sustainability themes and personal emotional experiences could be bridged, thereby addressing the content requirement from the requirement table (see Table 4.1).

The storytelling was intended to be experienced through an interactive activity facilitated by a physical installation. Tangible elements were used to support immersion and enable reflection by guiding users through different phases of the story in a structured and accessible way. This materialisation of the storytelling format created the necessary preconditions for fulfilling the form requirements.

During iteration 1: Complete Storyline

During Iteration 1 of concept development, a complete storyline was developed, consisting of a character introduction, three scenes, and a final reveal. Scripts with descriptive text and dialogue were composed for each section of the story to clarify character dynamics and emotional development. The overview of the storytelling is presented in Table 4.3.

Table 4.3 Structure of storyline in iteration 1, including the storyline, interaction and materialisation for each story section.

Story sections	Character Introduction	Scene 1	Scene 2	Scene 3	Reveal
Storyline	Character profile, background story	Concretising character dynamics	Concretising character dynamics	Speculation of the “end” of the story	Metaphor
Interaction	-	Discussion questions	Discussion questions	Discussion questions	Discussion questions
Materialisation	Printed text, illustration, reading out loud	Printed text, illustration	Printed text, illustration	Printed text	Printed text, illustration, reading out loud

In the Character Introduction, the profiles of the three characters and their initial interactions were introduced, establishing early signs of conflict. In Scene 1 and Scene 2, the characters engaged in conversations and digital chats, which served to concretise the emerging tensions. Scene 3 showed that, despite past conflicts, the friends remained connected 10 years later. In the Reveal, the underlying metaphor was exposed, linking the characters to human, nature, and consumption.

To support engagement and reflection, discussion questions were integrated after each scene and the reveal. These interaction points were designed to deepen the user's immersion and help link the storyline to both personal and societal themes. More importantly, the discussion questions were intended to prompt users to reflect on their own lifestyles and behaviours in relation to the storyline, an aspect explicitly included in the requirement list.

The materialisation of the storytelling experience was intentionally kept simple during this iteration, with emphasis placed on finalising the content. The prototype consisted of printed text and pencil illustrations presented on paper, supported by a guided reading and verbal facilitation during the user evaluation.

User feedback From Iteration 1

During the concluding group discussion in the evaluation workshop, participants expressed that they resonated with the reveal and experienced a moment of realisation. Although the installation consisted only of printed text, they found the experience immersive, largely due to the inclusion of discussion questions after each section. However, they also noted that the prototype appeared unfinished and lacked visual clarity, particularly in terms of text size and readability. They suggested that the material presentation should be further developed to better support the interaction and appear more curated.

Participants also responded positively to the interaction format. Engaging with the installation as a group, guided by members of the thesis team, was seen as beneficial, as it encouraged dialogue and allowed time for reflection. Additionally, moving between different stations was mentioned as a helpful aspect that supported focus and maintained engagement throughout the experience. However, some feedback indicated that the overall duration of the interaction may need adjustment.

In the internal reflection that followed the workshop, the thesis group identified a limitation in the narrative content. Specifically, the final scene (Scene 3), which presented a predetermined future, restricted opportunities for speculative thinking. As a result, participants were not invited to imagine alternative outcomes, a core principle of speculative design that was underrepresented in this iteration.

During Iteration 2: Refined Installation

When developing the concept for this iteration, the storyline was refined with more precise language in both the descriptive text and the dialogue. A significant change was the decision to make the ending more open by presenting four possible outcomes instead of a single predetermined conclusion. The formulation of text in Reveal was also simplified to leave more for the imagination. These updates intended to embrace openness and subjectivity in speculation, aiming to support more genuine and personal reflection from the users.

The name of the concept was also created, Vänskapsprövningen, which means The Friendship Test. This title enhanced the storyline about the survival of the friendship of the three characters, and at the same time hinted about the metaphor that discusses the relationship between nature consumption and humans.

In terms of interaction, additional elements such as reaction questions and tangible compartments were introduced alongside the discussion questions to create a more dynamic experience. These new elements were also intended to embed guidance into the installation and streamline the interaction process.

To explore different ways of enhancing the storytelling experience, a range of presentation formats were tested in the materialisation. Each section of the story was expressed using a different medium: infographics with illustration and text, a storyboard, theatre cards, and plain text. The infographics and the storyboard were created digitally, while the theatre cards were handmade using folded paper. The updated storyline is compiled in Table 4.4.

Table 4.4 Structure of storyline in iteration 2. Scene 3 was renamed to Future scenes. The added features are highlighted in bold.

Story sections	Character Introduction	Scene 1	Scene 2	Future Scenes	Reveal
Storyline	Character profile, background story	Concretising character dynamics	Concretising character dynamics	Speculation of 4 possible “ends” of the story	Metaphor
Interaction	-	Reaction question with alternatives, discussion questions	Reaction question with alternatives, discussion questions	Tangible interaction with installation, discussion questions	Tangible interaction with installation, discussion questions
Materialisation	Poster with illustration and descriptive text read out loud	Storyboard, stickers, printed text	Storyboard, stickers, printed text	Collapsible theater cards, printed text	Printed text placed in an envelope

The overall structure of the prototype followed that of the first iteration, with printed scenes arranged sequentially. However, improvements were made to visual clarity, including larger text sizes and more descriptive titles, to support easier navigation and sustained user focus during the interaction.

User Feedback From Iteration 2

The participants expressed that the added interaction elements did not significantly increase user engagement, largely due to the low fidelity of the prototype. Furthermore, participants also found the multi-format presentation inconsistent. For example, characters introduced visually in the storyboard were not clearly linked to their names, which later appeared only in text. This caused confusion and increased the need for guidance from the thesis group.

More confusion arose during the reveal scene. According to the feedback, the high level of abstraction in the reveal text, combined with minimal explanation, made it difficult for participants to interpret the intended metaphor.

Based on this feedback, it was concluded that improving visual clarity and overall fidelity could reduce user confusion. The friction between different presentation formats should be addressed. The reveal section also needed to be made more specific and accessible to better support user understanding.

Finalisation

Vänkspasprövningen was optimised to be able to facilitate different levels of engagement, corresponding to how visitors at an exhibition would interact differently with its installation.

The feedback from the second iterations were taken into consideration and the design of Vänkspasprövningen was adjusted accordingly. Most adjustments were done on a detailed level, leaving character dialogues and emotional development mostly as is. The focus for the finalisation was mostly diverted to the interaction between the participants and the story.

Various elements were added to different sections of the story in order to increase immersion and engagement, and the structure of the interaction was slightly altered, see Table 5.5 for an overview. The largest difference was a merge of scene 1 and scene 2 in order to decrease cognitive load in the interaction. Further, the fidelity of interactivity throughout the story was leveled to achieve cohesion. Table 4.5 shows the final flow of the story consisting of 4 sections.

Table 4.5 Structure of storyline in final iteration. Scene 1 and 2 were merged and named "The Present" The added features are highlighted in bold.

Story Sections	Character Introduction	The Present	The Futures	Results
Storyline	Character profile, background story	Concretising character dynamics	Speculation of 4 possible "ends" of the story	Metaphor
Interaction	-	Reaction question with alternatives, discussion questions	Tangible interaction with installation, discussion questions	Tangible interaction with installation, discussion questions
Materialisation	Welcoming poster, digital slideshow with recorded audio subtitles	Storyboard, stickers, printed text	Openable hatches, reflection cards, printed text	Printed text and illustrations in brochure format

The storyline was communicated through an installation combining different media types, as shown in Figure 4.10. The intended context for the storytelling installation is an environment of an exhibition, in places such as a museum. Users of the installation are, in this case, visitors to the exhibition. The installation was constructed in a way that created seamless engagement and immersion in the experience, and which paved the way for the story to be told with accessible and undemanding interaction. For the ideal experience, a facilitator or guide should lead a group through the experience in order to facilitate discussions and reflections.

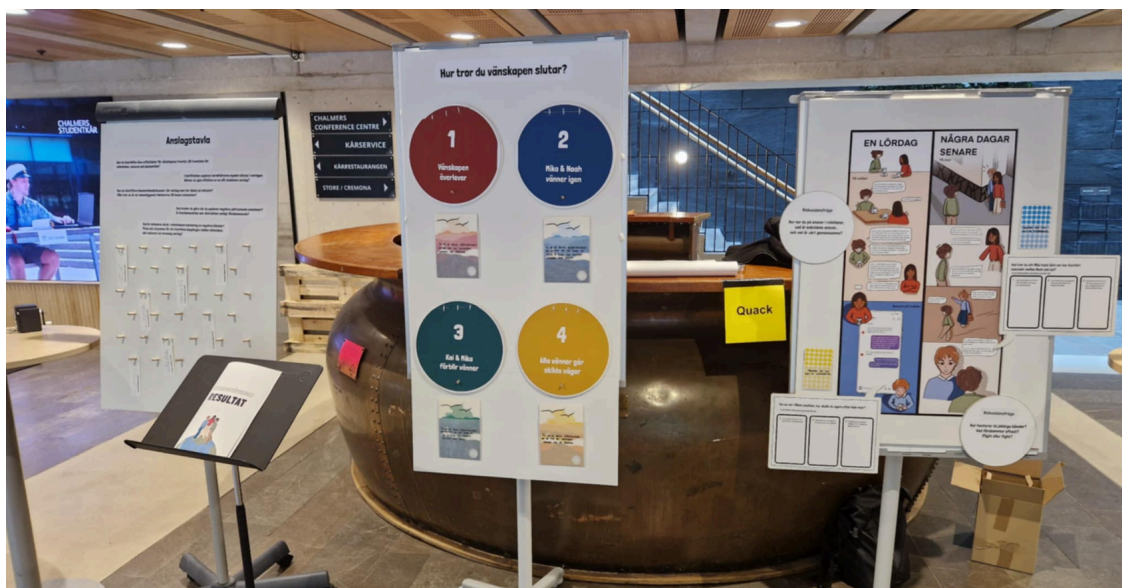


Figure 4.10 Final prototype of the installation of Vänskapsprövningen

4.2.3 Presenting Vänskapsprövningen

The final design of Vänskapsprövningen divides the storytelling into four different story sections: *The Character Introduction*, *The Present*, *The Futures* and *The Results of Vänskapsprövningen*, as illustrated in Figure 4.11. This chapter elaborates on the content and the form of each story section, and motivates the holistic design of combining the storyline with the materialisation.

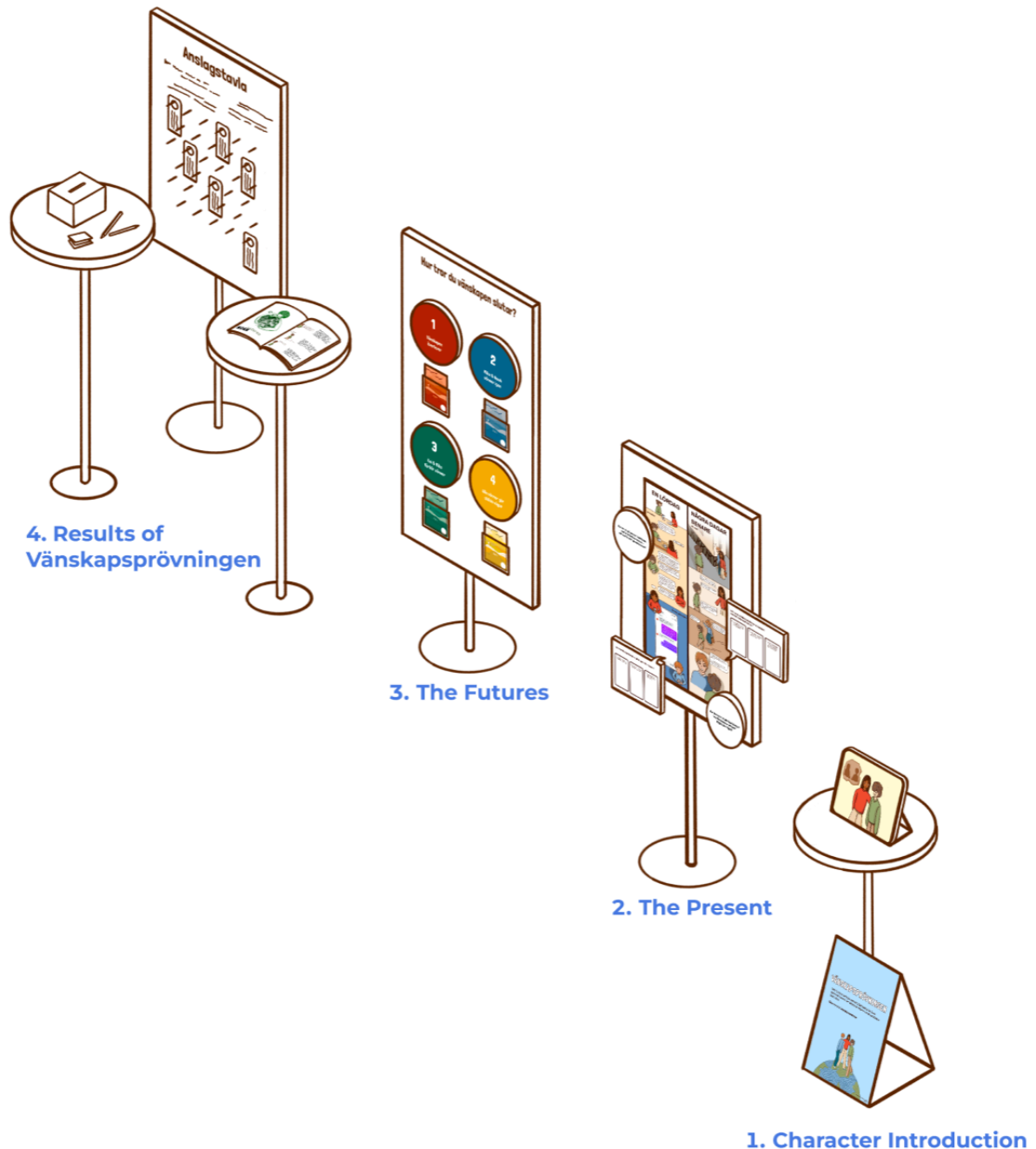


Figure 4.11 Illustration of the four story sections of Vänskapsprövningen

Character Introduction

Storyline content

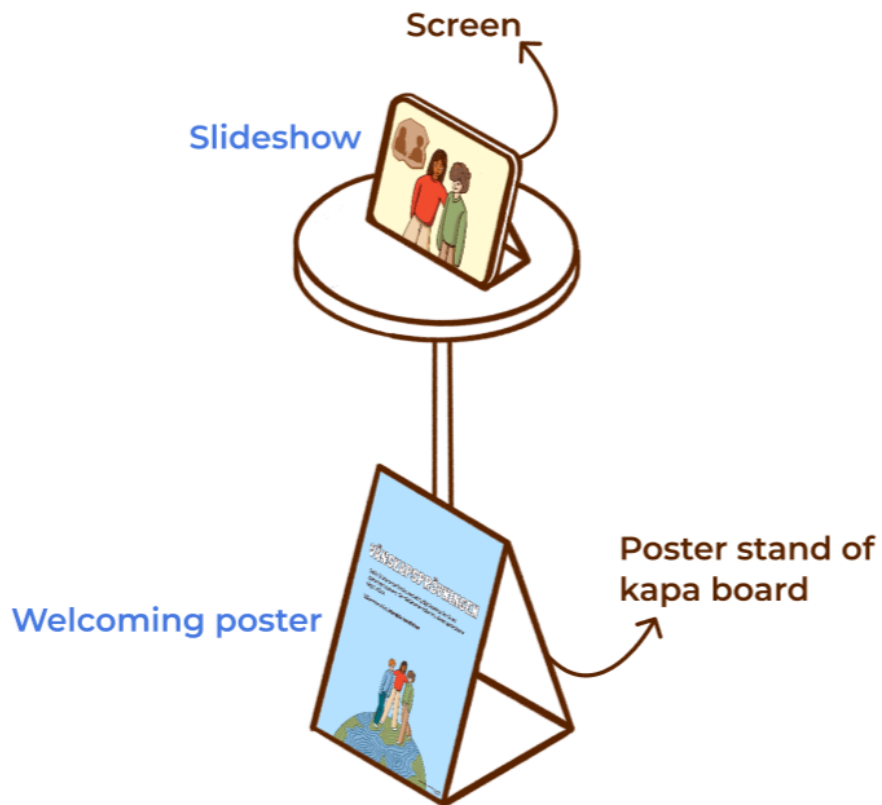
The storytelling begins with explaining that *Vänskapsprövningen* is a story without a clear message. It is rather a speculative scenario displaying a friendly dynamic between three friends, a dynamic symbolising something much bigger.

In *Character Introduction*, Mika is described as an adventurous person who enjoys exploring and doing new things. Mika is the character symbolising humanity, and the description of the character is therefore also applicable to humanity as a whole; an explorative species that is constantly on to something new. The introduction continues by presenting Mikas' childhood friend, Noah. Noah is described as a calm and caring person who enjoys the small things in life, and is the symbol for nature. They are described as different characters with differing qualities that complement each other well, ultimately creating a strong and unbreakable bond.

As the teenage years are reached for the characters, the third character is introduced. Kai, who is an energetic and driven person, is the symbol for consumption. Mika gets to know Kai during their teenage years and their friendship develops rapidly. Kais' personality and lifestyle is fast, infectious and rather exciting, causing Mika to admire it and feel the urge to follow along the adventures. Mika introduces Kai to Noah in the hopes of sharing the experience and the adventures. However, their accelerated lifestyle does not suit Noah well, and Noah finds themselves to not follow the development of the friendship. While Kai encourages Mika to stay curious and constantly look for new things, Noah feels longing for the beautiful things that already exist in life. The development of this dynamic has created more and more tension, resulting in Noah feeling left out.

Installation Form

This first section of the installation contains a welcoming poster and a slideshow displaying the characters visually with the support of audio and text, see Figure 4.12. The illustration helps the audience in creating a visual memory of each character. The audio and the texts make the introduction more viable and accessible in various contexts, as well as distinguish the characters names in order to facilitate the dialogues in the story. This section is structured in a way that makes it only observable. Full version of the poster and the slideshow is available in Appendix B & C.



Welcoming poster
An inviting description of the installation is displayed.



Slideshow
Various screenshots from the slideshow give brief information about the background of the characters.



Figure 4.12 The Character Introduction section of Vänskapsprövningen.

The Present

Storyline Content

As the story continues, it follows Noah who is making an attempt at communicating recent issues in their mental state. Noah explains the recent level of stress they have experienced in their life and that professionals have suggested to slow things down. Noah mentions that the accelerated lifestyle of their two friends is simply not sustainable anymore. To this, Mika explains that it is their way of managing their own stress, seeking enjoyment and excitement in life. Mika suggests that it is a positive thing to keep busy and be distracted, and that Noah should try to keep up with their lifestyle. Later the same day, a digital conversation can be seen between Mika and Kai, in which Mika expresses worry about Noah's situation. Kais' response showcases their mentality regarding responsibilities as they assure Mika that Noah will figure it out by themselves.

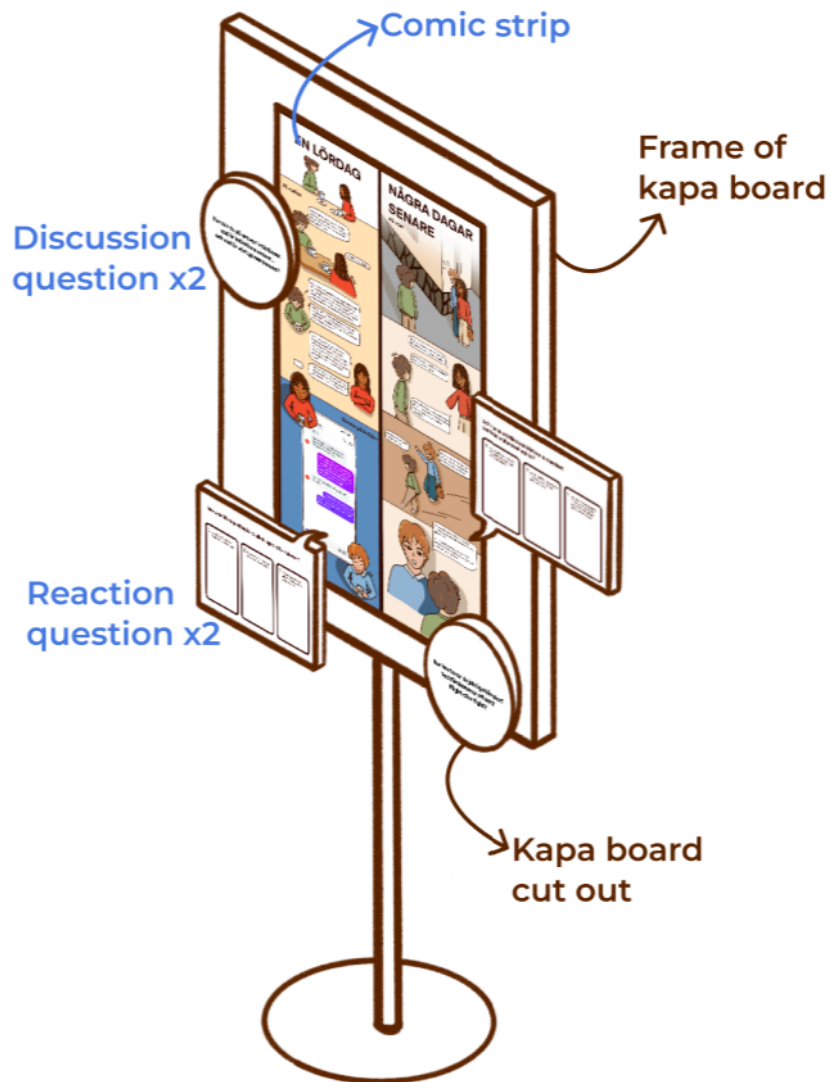
Mika then attempts to reach out to Noah again in a context where they stumble upon each other by accident. In this part of the scene, the passive aggression of Noah can be clearly observed as a backlash of not being properly heard initially. Noah is asked about the reason behind their absence in the friendship and lack of communication, and explains that they perceive a lack of care from Mika and Kai. Kai picks up the conversation again with Noah and appears to explain and justify Mikas' previous actions.

Installation Form

The Present, as illustrated in Figure 4.13, is presented in the form of a storyboard in which the audience can follow the same illustrated characters from the slideshow through their dialogues. The visual elements are supported by text in order to describe the context of each scenario as well as present the dialogue. Names are displayed above each character to help the audience connect the visuals and the names that were introduced earlier. Full version of the storyboard is found in Appendix D.

Two types of interactive elements were added to this section in order to increase interactivity and thereby also immersion in the story. Firstly, reaction questions tied to parts of the scenes are displayed to encourage users to reflect on the characters behaviors as well as their own moral standpoints. The reaction questions were printed out and pasted on a kapa board, and assembled onto the frame of the storyboard. Each question displays three different alternative outcomes that can be chosen. The participant makes their choice by taking a sticker and placing it at their chosen alternative.

The first reaction question is located at the chat between Mika and Kai. The audience can take a stand on how they would react after the chat conversation with Kai if they were Mika. The second reaction question is placed at the conversation between Kai and Noah when they met in town. This reaction question asks users hypothetically if they were Mika, how they would react if they overheard Kai and Noah's conversation. The complete version of the reaction questions are available in Appendix E.



Comic strip zoom-in
 Noah & Mika is having a conversation at a café in this specific part.



Discussion question
 When handling negative emotions, what is most common, fight or flight?



Reaction question
 The questions is pointed at a specific part of the comic. Stickers are available right above the questions.



Figure 4.13 The Present section of Vänksapsprövningen.

Furthermore, two discussion points were added which let the audience reflect around the behaviors and actions observed in the scenes. For the first part of the storyboard, the audience is asked the question “what is your view on responsibilities in relationships. What lies under individual responsibility and what lies under collective responsibility?”. For the second scene, the audience is asked “how do you manage difficult feelings and what occurs most often, fight or flight?”. These questions are optional, but the facilitator will always pick at least one and encourage the group to discuss it among each other. The complete version of the discussion questions are available in Appendix F.

The Futures

Storyline Content

In the third section, the user is given four options representing four different futures for the three friends. In the first alternative, all three friends have solved their issues and are still friends 10 years later, an alternative that has been present in the story through all the iterations. In this scenario, Noah is reminiscing about the shaky period the friends had and how they didnt think they would get out of it. Kai and Mika respond with care, and express the need they have for each other and how much they learned during the tough period.

In the second option, Mika and Noah find their way back to each other and Kai slowly falls out of the friendship. Mika seems to have felt lost without Noah in their life, and Noah expresses the longing they have felt for their dynamic as a duo. Noah has felt scared to act and be authentic in the vicinity of Kai and they share the feeling of relief for finding their way back to each other. In this future scenario, they are content with their friendship as a duo due to the way they complete each other.

The third future presents a scenario where only Mika and Kai are friends. The scenario follows a conversation between Mika and Kai in which Mika expresses regret for not moving on from their friendship with Noah earlier. They acknowledge that they had grown apart a long time ago and failed to realize it. Kai assures Mika that they are a different, more full and more developed person now, and they share gratitude and appreciation for each other

Finally, a scenario is presented in which all three friends go separate ways. This scenario is an exception as it follows an entry in Mikas’ diary 10 years into the future. Mika reminisces about the times where they were all friends and wonders about what they are doing in their lives now. Mika expresses happiness in their current lives and with their current friends, and their developed ability to manage their feelings is highlighted in this entry.

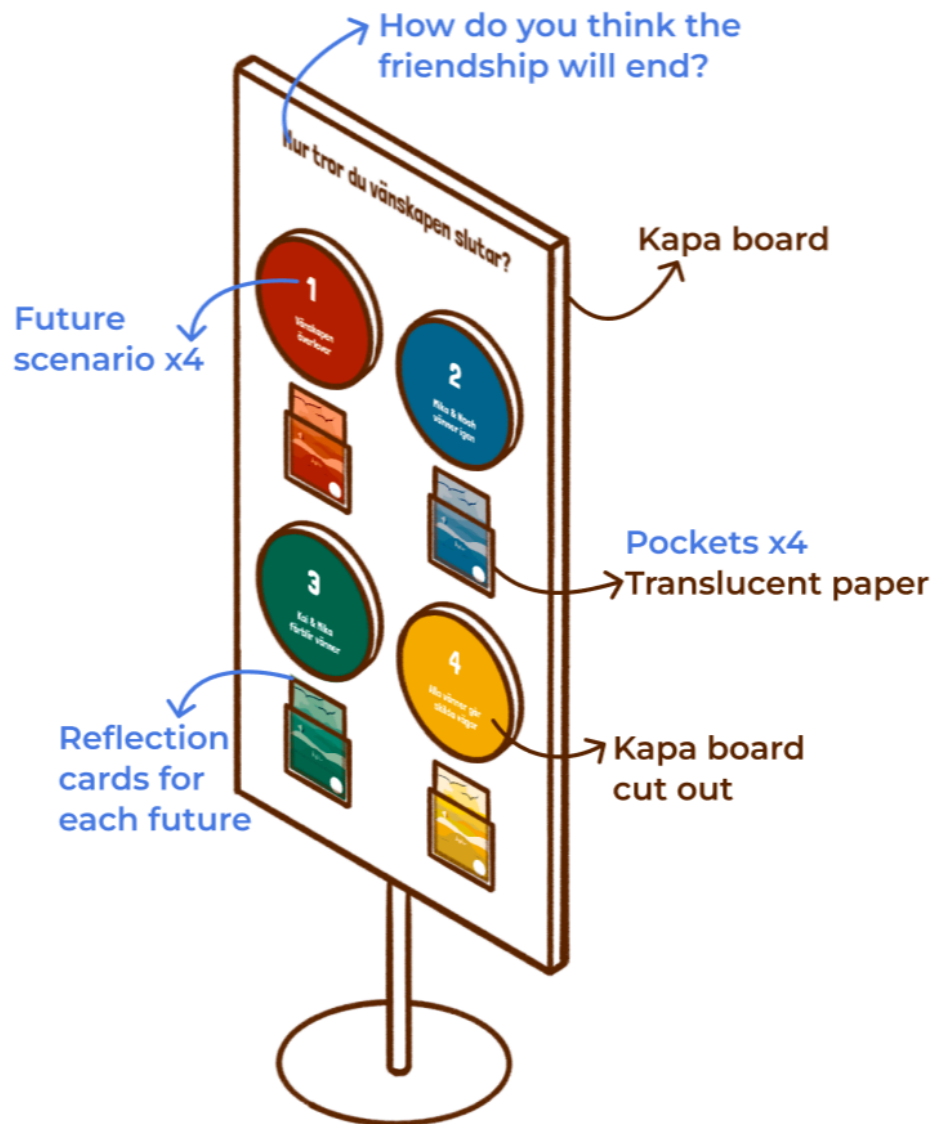
All these scenarios display ways in which the dynamic between human beings, nature and consumption could end up without actually including judgement in the future. For each possible outcome, all three friends could be happy and content. In the first option, one could translate it to the dynamic being balanced and sustainable between the three parts, while in the others, one of the parts finds a new way to satisfy their needs. In the second option, overconsumption might

become completely restricted and monitored. In the third option, humans might continue their consumption in another context or on other planets leaving earth to heal. In the fourth, all three parts find their own ways, satisfying their needs respectively and individually. Humans might find new contexts and have new and healthy dynamics.

Installation Form

In the installation, this section introduced a new way of interacting with the story, which created the possibility for the participant to choose the fate of the friendship (See Figure 4.14). The different future scenarios are hidden under circular lids that only display the general plot of the scenario. The mystery creates a feeling of action and consequences, increasing the importance of the choice of future. Although the participants are allowed to view all different scenarios, hiding them under lids slightly increases the risk while making a choice by indicating that the other alternatives will be excluded once a decision has been made. In turn, engagement is enhanced as the participants immerse themselves in the chosen future. One instance of how the scenarios are presented on the outside of the lids are through textual communication like the following; “The friendship survives”, for the first future scenario.

After picking a future and interacting with the hidden scenario, further discussion questions are added in order to help the participants to immerse themselves in the story. The discussion questions are displayed on reflection cards that the participants are urged to take after having picked a scenario. The reflection cards consist of two parts, one including the discussion questions and is kept by the participant, and another that is cut away and added to the installation. The backside of the cards display an abstract, nature-inspired background on the backside, acting as an aesthetic invitation to take a card. On the frontside, the discussion questions are listed with a number of empty lines under each, encouraging the participant to note down their reflections by the end of the experience. Examples of the discussion questions were “What needed to change in order for the friendship to survive? How did that change happen?” and “If you were Mika, what do you think you would feel responsible for in this conflict?” for the first future scenario. These questions were only discussed verbally during the third section of the installation. The complete version of the future scenes, and their corresponding reflection card are available in Appendix G, H, I and J.



Future scenarios

By lifting one circular lid, a future scene is revealed, which gives an idea of what that future implies.



Reflection cards

Taking a reflection card from a specific pocket indicate the choice of future for the storyline.



Reflection questions

The back side of a reflection card displays the specific reflection questions for the chosen future.

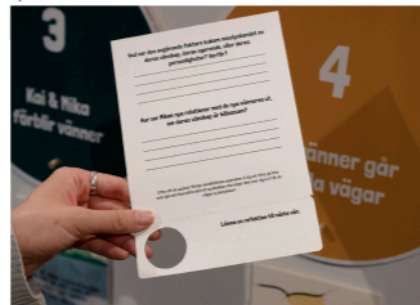


Figure 4.14 "The future", section three of the installation

Results of Vänskapsprövningen

Storyline Content

The metaphor is revealed in the result section. The reveal begins with a general explanation, displaying the existence of a symbolic story and what the different characters represent. The reveal then continues with a detailed explanation, dissecting each character action in the present scenarios and explaining the symbolism behind them.

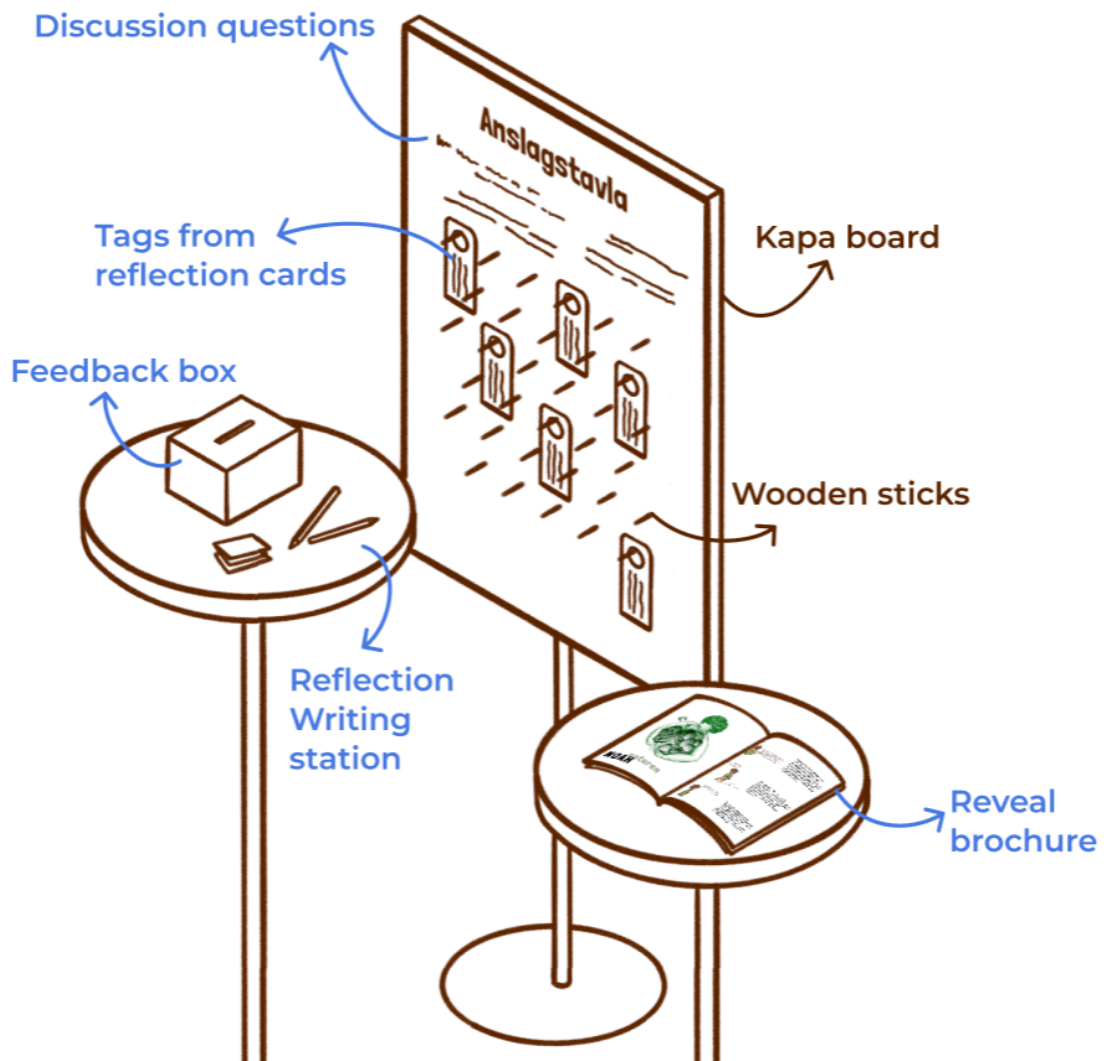
In the two scenes in present time, the story is told in a way that represents the dynamic and complications between humanity (Mika), consumption (Kai) and nature (Noah) Human beings tend to avoid facing emotional challenges, and the normalised accelerated lifestyle acts as a distraction from larger environmental and societal problems. Consumption plays a role in distracting human beings from the communication with nature, which for instance reflects how social media provides accessible entertainment which takes up the majority of attention.

Nature can sometimes initiate contact to communicate problems and it is rather easy to notice when the needs of the environment are not satisfied. But because of the distance between humans and nature, the empathy slowly subsides. When nature is faced with larger challenges, the communication becomes even more clear. This would take shape in slow changes such as increased ocean levels, increasing temperatures and damaged biological diversity. Nature can also act more aggressively and show consequences in the case of lacking communications. This would take shape in natural disasters like forest fires or floods.

Finally, when humans escape stress and uncertainty, consumption tends to provide quick solutions. This will often lead to overconsumption and quick gratification, which is especially visible in the consumption of beauty products and unhealthy food. Consumption contributes to the separation between humans and nature. It often ignores environmental and societal needs in the search of human attention and engagement. Consumption can however contribute to increased life quality in a sustainable manner, and was never intended to have this separating role.

Installation Form

The reveal of the symbolism of the story is presented in the form of a brochure, available in Appendix K. The front page displays the three friends with the title "Vänskapsprövningens resultat", or the result of the friendship test. The front page is an invitation to check the result of the test they have taken a part of, as they are still unaware of the symbolism at this stage. Upon opening the brochure, the participant is met with two pages of the first minimal and general explanations of the story. At the end of the third page, one of the major reflection questions is asked to the participant: "Can you somehow translate your reflections about the story along the way, to the relationship that human beings have with nature and consumption?". The participant is then informed that the following pages show dissections of each action of each character and in which way it represents their symbolism. All the pages after the first three are optional for the participant and are there to provide detailed explanations in the case of need for further information.



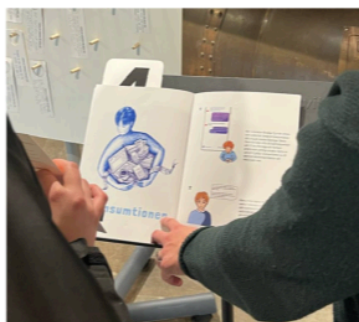
General reveal

The first half of the brochure reveals the overall symbolic by stating what each character represents.



Detailed reveal

The second half of the brochure elaborates on how details of the storyline reflects the metaphor.



User reflections

The users can detach a tag from their reflection cards to leave their thoughts on the bulletin board.



Figure 4.15 The Results section of Vänskapsprövningen

As the storytelling comes to an end, one final task is given to the participant. It is a bulletin board displaying the five core discussion questions of the experience, as well as several hangers. The facilitator leads the discussion and picks some of the discussion questions to discuss with the participant or among the group. After this discussion is finished, the participant/participants are encouraged to write down a shortened version of their reflection. The reflections are written on the removable part of the reflection cards, which displays an instruction to "Leave a reflection for the next friend". This small removable sheet of paper is then hung on the bulletin board, and made visible for the next participants to see. The reflections added to the bulletin board help the participant to form their own thoughts and reflections from the experience, and figure out what their own takeaways are. They also act as inspiration for other participants, making room for a shared experience with relatable, as well as challenging reflections. A visual representation of this story section is provided in Figure 4.15.

4.2.4 Users' Reflections After Vänskapsprövningen

The exhibition resulted in a combined total of 24 submitted reflections from the participants. The thematic grouping of the reflections revealed four themes to which the reflections could be categorized, all of which focus on creating healthier relationships and dynamics. The first group highlighted a healthier relationship between nature and humanity, the second between humanity and consumption, the third between consumption and nature, and the fourth between all three parts.

Nature - Humanity

Within the first category, the reflections brought up the importance of humanity caring for nature, and most importantly, caring and considering other things than themselves. Making time to assess how one's actions affect the environment and what the negative effects might imply for the dynamic. One example of the reflections within this category is the following:

"We can not build a relationship with nature as long as we continue to exploit it. In reality, we already have everything that we require as human beings and could have built a society that is not built upon consumption. We need to feel love for nature."

This comment reflected on an existing imbalance in the relationship between humanity and nature. While nature continues to provide everything that humans truly need, they are never fully satisfied. Another comment reflected upon what nature provides like this:

"There is something sharp, hard and high-pitched in the city. Aside from my job, that often makes me stressed. This is the reason why I like houses made of wood. Less standing waves, more 'softness'."

This comment highlighted the effect that nature has on human beings, acting as a destressing aspect of life. Nature grounds people and provides a calm softness in life, that is needed in a time where the accelerated life of the city is a constant cause of negative emotions. The comment ultimately expressed gratitude for the benefits of nature.

Humanity - Consumption

In the second category, the reflections touched upon the necessity of exercising mindful consumption. People seemed to acknowledge the responsibility to fundamentals in life and what is actually needed to achieve contentment beneath consumption behaviors. One of the comments reflecting on this point was formulated as follows:

“It is important to do things based on utilitarian motivation and consideration rather than thinking about the economic value or the short-lived happiness you get from it.”

This comment built upon the idea that human beings can be happy and content by simply satisfying the fundamental needs. It also highlighted the possibility of a healthy relationship between humanity and consumption, as consumption in fact is necessary, but should be done with consideration for its effects. Another comment that elaborated on this point stated the following:

“I notice that shortsighted happiness and satisfaction of needs easily goes first. You forget more meaningful values and easily fall for kicks.”

This comment attested to the fact that quick gratification is a tool used to keep human beings interested and attached, and distracted from fundamental values shared among humanity.

Consumption - Nature

Consumption consisted of many different elements, from fundamental items necessary for survival to the product marketing of excess and luxury items. Many of the comments within this category reflected on the marketing aspect of consumption, and spoke of the importance of mutual communication and consideration between the two parts. One comment touching on this subject was the following:

“Kai should become aware of Noah's needs and try to adjust in a reasonable manner, and compensate accordingly.”

When the names were switched out for their symbolism, the actual meaning of this comment was revealed. As nature communicates its needs clearly and obviously, consumption (companies, marketing, production) should become aware of said needs and understand that the dynamic will be disrupted if it does not adjust and compensate. Another, more literal comment addressed this matter as the following:

“Do not let consumption take over to the point where it is too late for our planet. New clothes, shoes and things are not more important than our nature.”

A comment that required no explanation and that summarizes the reflections within this category rather effectively.

The Full Dynamic

The final and concluding category included reflective comments regarding the dynamic between all three parts, humans, nature and consumption. These reflections argued for the possibility of each of the previously discussed dynamics to function embracingly of the third part. Humans and consumption can work cohesively to embrace nature by allowing more space for it in everyday life through urban planning. Simultaneously, Human beings and nature can work to embrace the value of sustainable consumption by understanding the origins of the products humans consume. One of the comments perfectly captured the essence of this category:

“Human beings, nature and consumption should live in harmony for a functioning society. But with more focus on nature because at the end of the day, love, family and friends mean more than money.”

Another comment reflecting in a more abstract manner about the dynamic was formulated as the following:

“Have an understanding for everyone's feelings and try to find compromises that benefit everyone.”

This reflection highlighted what it means to achieve harmony, and argues that a true functional dynamic between the three parts. In a complex non-breakable relationship like the one between humans, nature and consumption, compromises are explained as a must. Humans simply can not do without nature and consumption, and must therefore find ways to protect this dynamic no matter the challenges.

5. Discussion

This project set out to explore how interactive storytelling, specifically a narrative-based installation, can help upper-secondary students uncover the needs driving their overconsumption and discover sustainable alternatives. Through Mentality Exploration with 52 adolescents, it was identified that young people relate sustainability most readily to personal wellbeing, but struggle to connect with broader environmental and societal impacts. Building on these insights, Vänskapsprövningen was developed, an interactive storytelling installation that uses symbolic characters and guided reflection to bridge the gap between abstract sustainability concepts and everyday behaviours. Evaluation workshops and a public exhibition demonstrated that the installation successfully provoked emotional engagement and self-reflection, suggesting that speculative, participatory design interventions can effectively activate more sustainable mindsets in this age group. This chapter will critically examine these outcomes, discuss methodological strengths and limitations, and offer directions for future work.

5.1 Addressing the Aim and Objective

The aim of this project was to explore how self-identification of lasting sustainable behaviors among upper secondary school students could be facilitated. As the project proceeded, the findings showed that there are multiple stages that take place and are required before behavior change can be achieved. Everything from awareness to education to monitoring of behavior developments could be necessary to ensure facilitation of such change. As a result, the project redirected the focus. Instead of facilitating the discovery of specific pro-environmental behaviours, this project contributed to better preconditions for behavior change by provoking introductory reflections on a relationship between human beings, nature and consumption. Facilitating the creation of preconditions for behavior change and identification of pro-sustainable behaviors is considered a partial fulfillment of the aim in this project. Although fulfilling the aim completely would require a more extensive project.

While the goal was to stimulate reflections, there was active avoidance of steering those reflections towards an outcome that would align with our own personal values and beliefs. The overall narrative was neutralised in order to avoid direct criticism of consumption, which ultimately supported the emergence of more personal and relatable reflections. Despite this effort, more external feedback is required in order to ensure objectiveness. However, the evaluation feedback showed that this approach did in fact increase the quality of reflections.

Further, the objective specified that emerging reflections would ideally be categorized as forms of realisations or motivations for behavior change. The verbal communication from participants confirmed that their reflections were eye opening and did classify under both these categories. However, no measures have been taken to create an understanding of the extent to which these realisations and

motivations contribute to behavior change. The reflections from the exhibition did show that the participants understood and agreed with the narrative of Vänskapsprövningen, and the feedback confirmed a lasting impression experienced from the story and symbolism. This may increase the likelihood that reflection leads to motivation for behaviour change.

Overall, the aim is assessed to be partially fulfilled as the project has focused on fundamental aspects of behaviour change. Furthermore, the objective is delivered, having created an interactive probing medium that stimulates reflections, which through verbal confirmations could be categorized as realisations and motivation for behavior change.

5.2 Addressing the Research Questions

The first research question revolved around the manifestation of overconsumption behaviors among upper-secondary school students (see section 1.6). This had largely been addressed through the conduction of the initial user study, *The Mentality Exploration*. The analysis of the collected data revealed that the study succeeded in mapping out the behaviours among adolescents, primarily through quantitative analysis. Specific examples of behaviours which adolescents considered unsustainable were gathered. The participating adolescents were guided to create personal definitions of sustainability, which resulted in an understanding of the attitudes and emotions regarding sustainability. These findings were supported by theoretical insights on emotional drivers and reflect contradictions in sustainable behaviours.

The second research question regarded the possibility to facilitate discovery of sustainable alternatives to meet possible identified needs. This question was targeted partially through Mentality Exploration, as well as the trigger product design. While Mentality Exploration helped map out the link between specific overconsumption behaviors and emotional drivers, prompting questions in the storytelling of Vänskapsprövningen facilitated self-identification of needs. During the evaluation exhibition, participants reflected on how specific behaviours served as coping mechanisms for negative emotions, and whether or not consumption was among those behaviours. Examples that were discussed were daily energy drink consumption for the sake of fellowship, driving for the sake of stress avoidance and comfort, as well as the use of electric scooters for similar reasons.

The second research question was further addressed by encouraging participants to begin exploring sustainable alternatives to overconsumption. Drawing on Hartmut Rosa's theory of resonance (see section 2.1), the narrative Vänskapsprövningen introduced nature as a potential source of resonance. Through the evaluation exhibition, it was evident that users reflected on their personal relationship with nature. The narrative of *Vänskapsprövningen* framed care for nature as a conceptual alternative to consumption, suggesting that strengthening relation to nature could offer more sustainable ways to meet emotional needs. After partaking in the

evaluation exhibition, many expressed a growing appreciation for nature and interest in spending more time in it.

5.3 Reflections on Methods

The overall choice of applying speculative design as the overarching design approach was aligned with the explorative nature of this thesis project. Through designing Vänskapsprövningen, we saw the potential of working with speculative design in sustainability topics. However, we have also encountered challenges with speculative design because of our lack of familiarity, and lack of reference with regards to specific design methods. This resulted in uncertainties regarding the justification of the results of our thesis project.

This resulted in us infusing elements of approaches that are more familiar to us, for instance user-centric design and design-thinking. In the end, we think that this fusion of approaches was successful. Involving users in the design process helped in grounding the results in legitimate data and gaining power in the arguments behind the design of Vänskapsprövningen.

However, there was a recurring problem of unavailability of the target group. In Mentality Exploration, the limited time that we were permitted to stay at the upper-secondary schools caused rushed conduction of the workshops, which affected the quality of observation documentation, and collection of in-depth qualitative data. In the concept development iterations in Phase II, we could only afford to include five adolescents in the evaluation activities. These challenges signified the challenge of user involvement in design processes, and we realised that it would require another scale of project in order to reach a representative amount of adolescents. To compromise, we chose to utilise our knowledge of design in activities such as ideation and conceptualisation, which is more compatible with the scale of a thesis project. We believe that we have adequately utilised our resources and maximised the effect for delivering the final design of Vänskapsprövningen.

Something that is worth noting is the pattern we saw in previous speculative design without user involvement. It is common to present dystopian futures or simply push a specific agenda with the speculated futures or prototypes. A consequence of this subjectiveness is imbalance between personal and biased views and its relation to the objective views. We actively avoided this to create space for adolescents to think for themselves, to see value in all perspectives, and pave their own ways to a developed dynamic.

It is also important to mention that we are aware of a certain bias that is imposed through our formulation of the project aim. We have however attempted working with objectiveness in our generated content through e.g avoiding critique of views that differ from our anticipation, and give the freedom of interpretation to the users rather than giving them one of our interpretations as a fact. In this case, we believe that incorporating a user-centric mindset in the design process helped promote the democratic aspect of Vänskapsprövningen.

5.4 Reflections on Results

Various factors had an impact on the results from the different phases. From the first phase, we discuss the emergence of data dispersion and the causes for it. We continue by assessing the feedback on the final exhibition and relating the generated reflections to the frame of reference. Finally, the traceability of the long-term impact is evaluated and the need for it is discussed.

5.4.1 Mentality Exploration: Challenging Data Dispersion

The results of the Mentality Exploration revealed a large diversity in views and emotional responses among the target group. For instance, the entries in the Geneva Emotional Wheel in the questionnaire booklet might be linked to the emotions felt during the chosen activity by some participants, while for others it may be linked to before or after the activity. This may have been due to varying interpretation of the instructions of the questionnaire booklet. Further, encouraging the participants to reflect based on their own experiences meant that the reasoning and reactions of the participants varied depending on levels of knowledge, engagement and interest.

These factors resulted in data collections pointing in different directions and thereby dispersing the patterns. Drawing conclusions from the analysis was therefore challenging, and relied heavily on interpretation, intuition and theoretical framing. However, it is also a natural aspect of the analysis of qualitative data. Despite this, the conclusions drawn based on the qualitative data were grounded in relatively recurring patterns and were also backed by quantitative data (see section 4.3 and 4.4).

5.4.2 Final Design: Unwanted Social Pressure, Yet Highly Engaging

Further, we want to discuss pros and cons of our final design. The feedback from the evaluation exhibition of Vänskapsprövningen revealed both strengths and areas for improvement in the experience. The exhibition environment presented certain challenges to user engagement. During the evaluation exhibition, the noisy atmosphere made it difficult for users to fully focus and immerse themselves in the installation. Several reported being distracted by nearby conversations, particularly when others could overhear or influence their reflections. This interference limited the depth of individual interaction with the content.

Group dynamics and social pressure also affected the storytelling experience. Many participants noted that it was difficult to respond honestly when others' opinions, choices, and values were visible. This issue was most evident in The Present section, which involved multiple-choice questions and was particularly vulnerable to peer influence when the answers were openly displayed.

Despite these challenges, the visual and physical aspects of Vänskapsprövningen were widely praised. Participants found the illustrations engaging and the storyline easy to follow. The inclusion of discussion prompts and interactive elements helped sustain interest and deepened immersion. However, some confusion arose from the lack of a streamlined experience, especially regarding the intended automation of the installation. Clearer and more intuitive instructions would have been needed to support a seamless, self-guided interaction. Thus, further work is required, which will be presented later on (see chapter 6.5).

The reflections sparked by Vänskapsprövningen were indirectly supported by the theoretical framework, though not always in the ways originally intended. For instance, Hartmut Rosa's theory of social acceleration, which was initially conceived as a central theme, was not clearly picked up by most participants. Similarly, the speculative elements aimed at encouraging future-oriented thinking were only acknowledged by a few. This may be due to the relatively closed structure of Vänskapsprövningens narrative, which limited opportunities for open-ended reflection.

In hindsight, the attempt to weave together multiple methodological and theoretical perspectives into a single concept may have been overly ambitious. However, this complexity also enabled a more personalized experience. Participants engaged with different aspects of Vänskapsprövningen based on their own perspectives, resulting in a range of reflections that touched on varied themes depending on how they interacted with the material.

5.4.3 Assessing the Traceability of Long Term Impact

Several reflections from the evaluation exhibition suggested the potential for long-term impact. Some participants reported emotional reactions, such as feeling tearful or experiencing shivers, which indicated a deep level of engagement with the storytelling. These responses demonstrate the potential of this type of narrative experience to provoke meaningful, introspective thought. However, they also underscore the need for methods to trace long-term effects. In this case, no follow-up plan was in place to assess the lasting influence of the experience, and while many reflections were strongly connected to sustainability and overconsumption, no evidence of actual behavior change can be confirmed.

To support continued reflection beyond the exhibition, participants received reflection cards during the Futures section of Vänskapsprövningen. These cards were designed as tangible evidence, both aesthetically appealing and personally meaningful, that could “plant a seed” in the participant's home environment. While many participants expressed an intention to keep or display the cards at their homes, no follow-up was conducted to verify whether this occurred or to assess their influence over time.

5.5 Future Work and Recommendations

Based on the feedback received during the evaluation exhibition, a number of conclusions could be drawn regarding future refinement of Vänskapsprövningen. This subchapter presents recommendations to further enhance interactivity and speculative design in future work.

5.5.1 Reconsidering the Format and Context of Vänskapsprövningen

While the exhibition format presented some challenges for user experience, it also offered clear advantages by encouraging interactivity and engagement. Nonetheless, several aspects could be improved to optimize the format. Most notably, the visual fidelity should be enhanced with larger illustrations and text that would improve readability and interaction. Additionally, the instructions throughout the installation need to be expanded to reduce reliance on facilitators. When facilitators were occupied with other visitors, some participants reported confusion about how to proceed, which hindered their engagement. The physical layout could also be more intuitively designed, with spatial cues that help users navigate the experience independently.

Alternatively, the exhibition context could be reconsidered and adjusted to achieve a still environment which allows users to focus, engage and immerse themselves in the storytelling. An example of an alternative setting for adolescents is their educational context. A group exercise for adolescents as a part of their sustainability education is an adequate packaging for Vänskapsprövningen. As a compliment to traditional prescriptive education, this type of exercise would help diversify the education material, bringing new perspectives and provoking personal reflections among the groups.

Transforming the installation into a portable educational tool would further extend its reach and usability. One early idea from the ideation phase was to redesign the experience as a board game. A portable version would not only fit within classroom settings but could also be used in informal social contexts or individually, making the experience more flexible and inclusive beyond the target group.

5.5.2 Reconsidering the Content of Vänskapsprövningen

The storytelling proved highly successful in achieving its purpose. Presenting the content in this manner does however come with risks of bias and subjectivity. In order for the story to fulfill its purpose, it is important that future projects ensure the reduction of subjective descriptions in the story. While some of the feedback from the evaluation of Vänskapsprövningen expressed high appraisal of the objectivity and openness of the story, reviewing some parts revealed certain levels of subjectivity, specifically in the Result section where the metaphors were explained.

Finally, it appeared important to explore ways of tracking the impact of the experience on the participants. This should also be combined with reducing the complexity of the takeaways, for instance by narrowing down the reflections to specific action points.

5.6 Personal Takeaways

Finally, let us dive into the most relevant of our personal takeaways after having completed the project. Regarding the project process, our progress was restricted by the challenges of reaching out to the adolescents. This was especially difficult during phase I, when we wanted to recruit 50 participants within our target group. When the process of participant recruitment was extended, it ultimately led to delays in conducting Mentality Exploration, and thus also the data analysis and the concept development thereafter. This resulted in us rushing towards the end of the project, and also lowered ambition in elaboration of final deliverables.

If we would have done the project again, the choice of a more accessible group like first year university students could have resulted in similar outcomes with a more comfortable timeframe and more easily executed iterations. Despite this, we continue to believe that adolescents are a very crucial audience that should be targeted in projects that span over longer time periods.

In Vänskapsprövningen, the speculative storytelling is intensive in terms of large amounts of information packaged in a relatively short experience. Some of the most useful facilitating storytelling mediums for thoughts and reflections are familiar to us, books, movies, games, etc. All these lean towards longer formats, and can tell a story and convey its messages in a more detailed manner. One of the fun challenges of this project and something we see a lot of potential in is shortening the experience, and making more room for interpretation. This takes a lot of skill, but we do not think it is always necessary to convey a specific message, and in fact it can sometimes be repelling for the receiver. Open ended speculative storytelling where all characters could find happiness in all scenarios is useful for the exploration of different perspectives and needs. Where the story is stripped down, interaction and discussion acts as a complement to bring forth thoughts and reflections.

6. Conclusion

This thesis explored how analogue interactive storytelling can be used as a catalyst for fostering sustainable mentalities among adolescents, specifically targeting their emotional relationship with nature and consumption. Through a two phase iterative process, the project developed a trigger product aimed at helping upper secondary school students reflect on their everyday consumption behaviors. These reflections are a big part of the foundation necessary in the process of discovering sustainable alternatives that satisfy underlying emotional needs.

A user study revealed a clear divergence in how adolescents relate to sustainability: while they can articulate personal wellbeing impacts with clarity, their understanding of environmental and societal consequences remains abstract and emotionally distant. This insight informed the design of Vänskapsprövningen, an interactive installation using storytelling and symbolic characters to bridge the gap between abstract sustainability concepts and personal experience and behavior. Vänskapsprövningen facilitated moments of reflection, provoked emotional engagement, and supported a reimagination of overconsumption behaviors through immersive interactions and an accessible story.

By combining emotionally resonant narratives for adolescents with the framework of speculative design, the thesis demonstrates the potential of interactive storytelling to not only raise awareness but also to build a foundation for activating internal motivation for change. It highlights that behavior change in the context of sustainability requires more than information, it requires meaningful, relatable, and memorable experiences. This approach offers valuable implications for future initiatives aiming to support sustainable transformation among youth, where fostering emotional connection and self-discovery may be more impactful than prescriptive messaging alone.

Further, the thesis concludes a number of recommendations for future projects in the field of speculative interactive storytelling. Expansion of the testing to a broader and more diverse group of adolescents across different cultural and educational contexts is necessary to assess its accessibility and adaptability to the target group. Future projects could explore the long-term impact of such trigger products on attitude and behavioral change. Adjusting the interactive components by reassessing the materialization and digitalizing aspects of the experience could enhance engagement beyond exhibition settings. Additionally, co-designing future iterations with adolescents themselves may deepen the relevance and emotional resonance of the experience. Finally, collaboration with educators and sustainability professionals could help embed such tools into formal learning environments, further enhancing their impact.

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Appendix

A. Questionnaire Booklet for Mentality Exploration



HÅLLBARHET i vardagen

Användarstudie för examensarbete inom teknisk design
Abbas Razocky & Sofia Xie
Chalmers tekniska högskolan
2025

Min vardag...

Här kommer lite frågor och alternativ, skriv gärna in några av alternativen som passar. Passar inget av alternativen? skriv in dina egna under alternativet "annat".

Detta gör jag varje dag. Det känns fel annars.

- | | | |
|----------|-------|----------|
| 1. * | _____ | 4. _____ |
| 2. * | _____ | 5. _____ |
| 3. _____ | _____ | 6. _____ |

Detta gör jag regelbundet på min fritid.

- | | | |
|----------|-------|----------|
| 1. * | _____ | 4. _____ |
| 2. * | _____ | 5. _____ |
| 3. _____ | _____ | 6. _____ |

* Obligatorisk

Jag gör detta för att unna mig i vardagen.

- | | | |
|----------|-------|----------|
| 1. * | _____ | 4. _____ |
| 2. * | _____ | 5. _____ |
| 3. _____ | _____ | 6. _____ |

Jag gör detta när jag inte orkar göra något annat, eller när jag är uttrökad.

- | | | |
|----------|-------|----------|
| 1. * | _____ | 4. _____ |
| 2. * | _____ | 5. _____ |
| 3. _____ | _____ | 6. _____ |

Jag gör detta när jag har tid att ha väldigt kul.

- | | | |
|----------|-------|----------|
| 1. * | _____ | 4. _____ |
| 2. * | _____ | 5. _____ |
| 3. _____ | _____ | 6. _____ |

* Obligatorisk

Hållbarhet för dig...

Du kommer att få svara kort på vad hållbarhet innebär för dig och vad du associerar med hållbarhet.

Saker jag associerar med hållbarhet?

Är hållbarhet viktigt eller oviktigt?

Varför / varför inte?

Välj 3 aktiviteter, baserat på din formade definition av hållbarhet, som du anser är mest ohållbara...

1.

2.

3.

01

Vald aktivitet:

Varför anser du det vara ohållbart?

Något överlag? Något som särskilt du gör?

Baserat på dina svar och reflektion, hur skulle du ta ställning till detta?

Kryssa i en av ruforna i skalan som representerar din åsikt.

Jag har fått reflektera över denna aktivitet. Håller inte med Håller med

Jag vill ändra på mitt beteende kring denna aktivitet. Håller inte med Håller med

Om du vill ändra på ditt beteende, Ser du möjlighet till att göra det?

Jag vet hur jag ska ändra mitt beteende. Håller inte med Håller med

Det är socialt accepterat att ändra på mitt beteende Håller inte med Håller med

Jag hinner ändra på mitt beteende. Håller inte med Håller med

Jag orkar ändra på mitt beteende. Håller inte med Håller med

Övriga tankar som du vill dela med dig av?

02

Vald aktivitet:

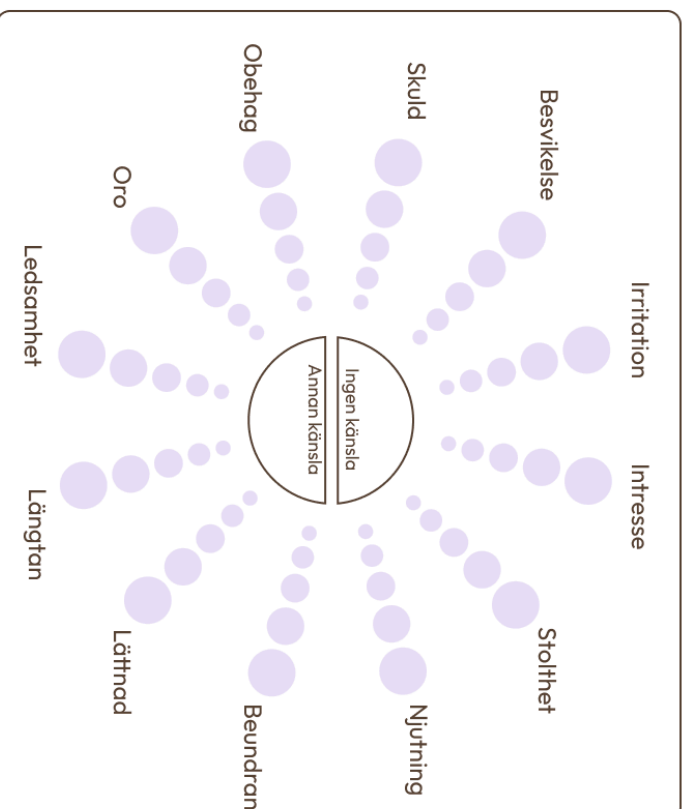
Varför anser du det vara ohållbart?

Något överlag? Något som särskilt du gör?

Vilka känslor förekommer innan, under och efter aktiviteten?

Kryssa i cirkelarna från innerst till yttre. Ju mer du känner en känsla, desto fler cirklar ska kryssas i.

OBS vissa känslor i figuren kan vara irrelevanta för en vald aktivitet, det är helt okej att hoppa över dem.



Annan känsla:

Hur skulle du placera denna aktivitet i dessa påståenden?

Kryssa i en av rutorna i skalan som representerar din åsikt.

Mitt liv är inkomplett utan denna aktivitet.	Håller inte med	Håller med
Denna aktivitet är en central del av min identitet.	Håller inte med	Håller med
Jag tycker att aktiviteten är meningsfull.	Håller inte med	Håller med
Denna aktivitet kräver låg nivå av resurskonsumtion.	Håller inte med	Håller med
Denna aktivitet påverkar min fysiska hälsa positivt.	Håller inte med	Håller med
Denna aktivitet påverkar min psykiska hälsa positivt.	Håller inte med	Håller med
Jag tycker att det är etiskt rätt att utföra aktiviteten.	Håller inte med	Håller med

Baserat på dina svar och reflektion, hur skulle du ta ställning till detta?

Kryssa i en av ruförna i skalan som representerar din åsikt.

Jag har fått reflektera över denna aktivitet. Håller inte med Håller med

Jag vill ändra på mitt beteende kring denna aktivitet. Håller inte med Håller med

Om du vill ändra på ditt beteende, Ser du möjlighet till att göra det?

Jag vet hur jag ska ändra mitt beteende. Håller inte med Håller med

Det är socialt accepterat att ändra på mitt beteende Håller inte med Håller med

Jag hinner ändra på mitt beteende. Håller inte med Håller med

Jag orkar ändra på mitt beteende. Håller inte med Håller med

Övriga tankar som du vill dela med dig av?

03

Vald aktivitet:

Varför anser du det vara ohållbart?

Något överlag? Något som särskilt du gör?

Baserat på dina svar och reflektion, hur skulle du ta ställning till detta?

Kryssa i en av rutorna i skalan som representerar din åsikt.

Jag har fått reflektera över denna aktivitet.	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
---	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Jag vill ändra på mitt beteende kring denna aktivitet.	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
--	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Om du vill ändra på ditt beteende, Ser du möjlighet till att göra det?

Jag vet hur jag ska ändra mitt beteende.	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
--	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Det är socialt accepterat att ändra på mitt beteende	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
--	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Jag hinner ändra på mitt beteende.	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
------------------------------------	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Jag orkar ändra på mitt beteende.	Håller inte med	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Håller med
-----------------------------------	-----------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	------------

Övriga tankar som du vill dela med dig av?

B. Welcoming Poster

VÄNSKAPSPRÖVNINGEN

Detta är inte en berättelse med ett tydligt budskap. Det är ett spekulativt scenario där relationerna mellan tre vänner symboliserar något större.

Välkommen till en **interaktiv installation!**



Examensarbete av Abbas Rzaezy & Sofia Xie
Teknisk design

C. Slideshow

Below, the text content of the slideshow is presented. For the entire slideshow, including visuals and audio, follow this [link](#).

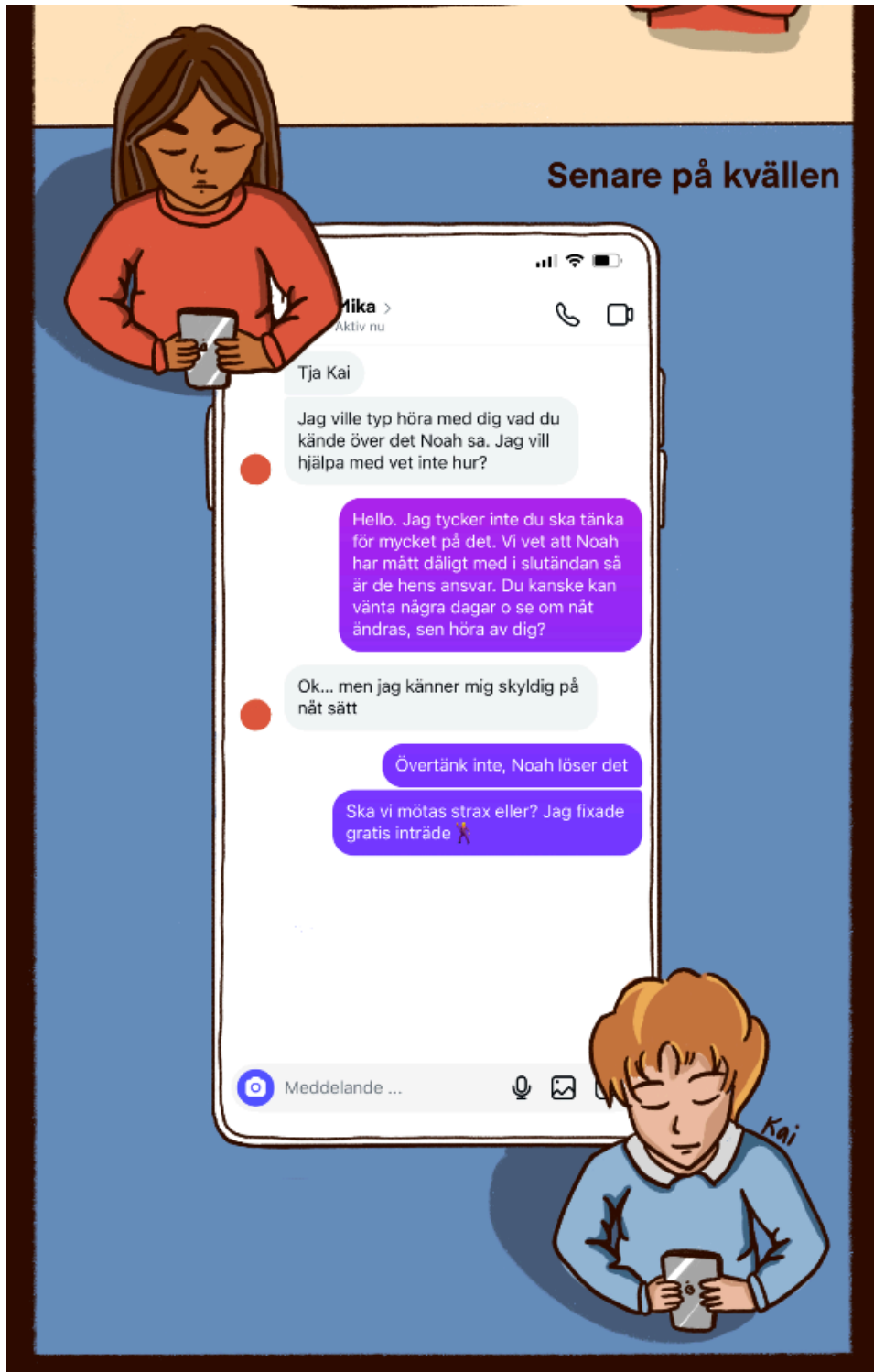
Mika has always been someone who loves adventure and enjoys trying new things. Since childhood, Mika has had Noah by their side, a very calm and caring person. Noah is very down-to-earth and always appreciates the little things in life. Noah and Mika care deeply for each other, and despite their differences, they've grown up side by side. They've shared both laughter and tears, games and arguments, and have learned a lot from one another. Over the years, their friendship has formed into an unbreakable bond that always ties them together.

Over time, Mika also got to know Kai, an energetic and driven person who always wants something going on and constantly finds new ways to have fun. This new friendship with Kai gradually influences Mika, who gladly tags along on the new adventures Kai suggests. Mika introduces Kai to Noah, hoping they can embark on new adventures together, a new chapter in their friendship.

As the years go by, Mika enters a new phase in life, and the life that Kai leads feels increasingly exciting. Kai often reflects Mika's new feelings of curiosity and encourages Mika to push boundaries by trying new things. Their everyday life moves at a fast pace, always heading toward the next thing. Noah hasn't quite kept up with the development of his two friends and instead longs for calmness in order to appreciate the beauty in life that already exists. Mika's new path in life has changed the dynamic of their friendship with Noah, a relationship that has become increasingly strained as Noah feels more and more left out.

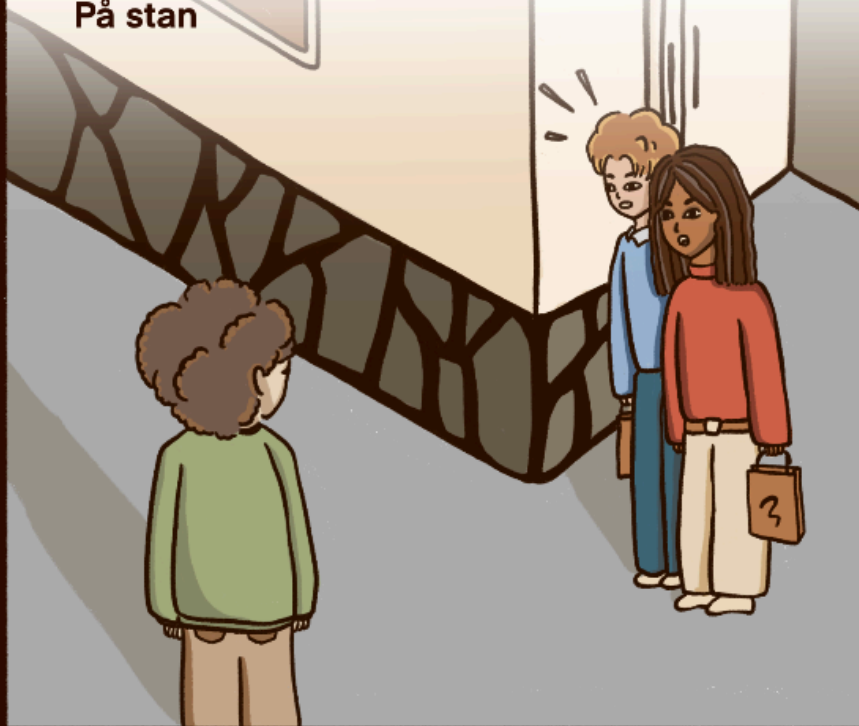
D. Storyboard





NÅGRA DAGAR SENARE

På stan





F. Reaction Questions of Vänskapsprövningen

Om du var i Mikas position, hur skulle du agera efter Kais svar?

1. Lita på Kais råd och på att Noah klarar situationen själv.

2. Ringa Noah för att fråga hur hen mår och vad hen behöver.

3. Försöka styra samtalet tillbaka till att handla om Noahs situation.

Vad tror du att Mika hade känt om hen överhört samtalet mellan Noah och kai?

1. Jag skulle känna att Kai har rätt och känna mig trygg i hens beskyddande.

2. Jag skulle känna mig obekväm eftersom Kai sätter mina känslor före Noah.

3. Jag skulle bli medveten om att varken jag eller Kai har gjort verkliga försök att lyssna på Noahs behov.

E. Discussion Questions of Vänskapsprövningen

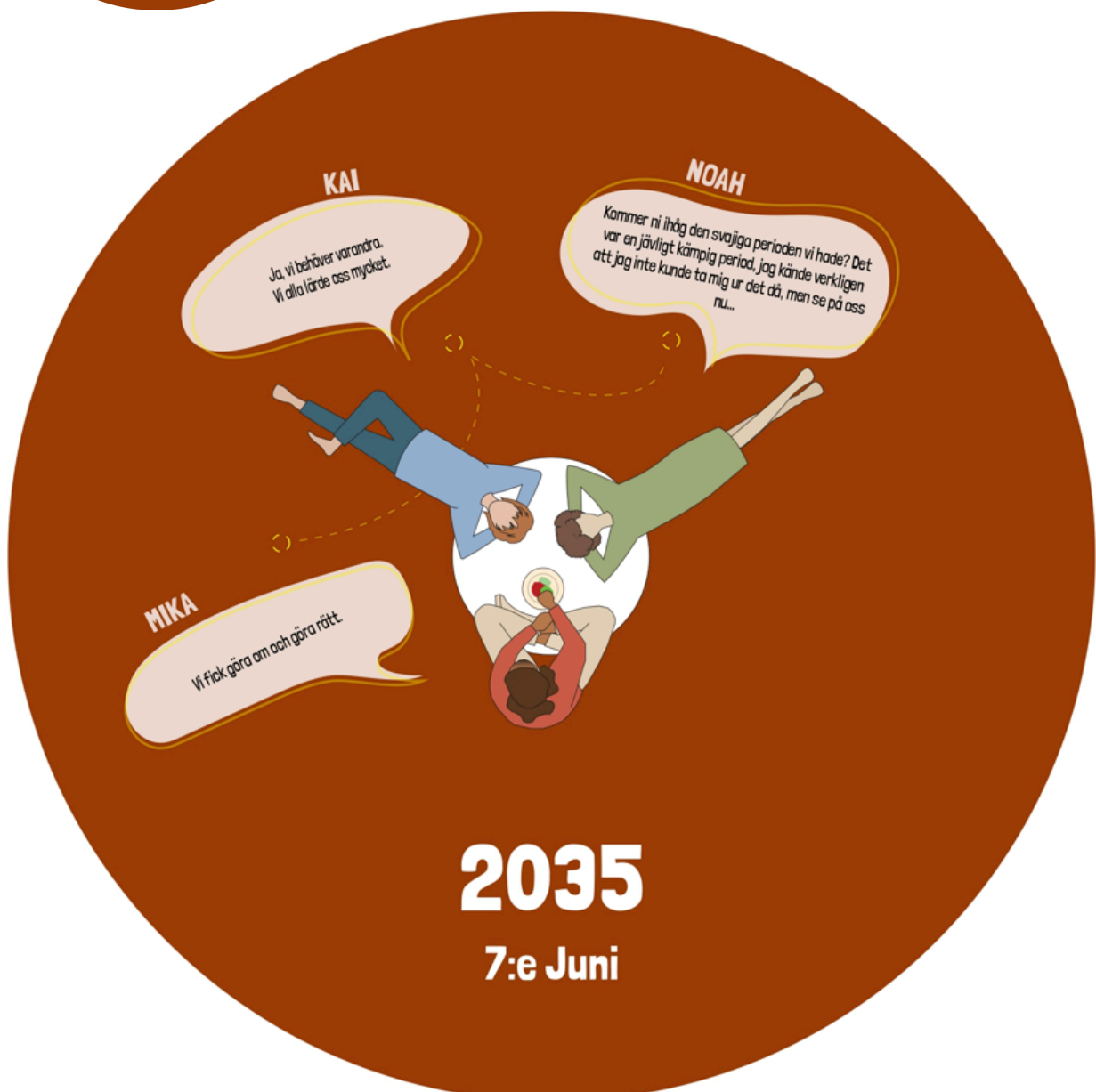
**Hur ser du på ansvar i relationer,
vad är individens ansvar...
och vad är vårt gemensamma?**

**Hur hanterar du jobbiga känslor?
Vad förekommer oftast?
Flight eller fight?**

G. Future 1 in Vänskapsprövningen: All Three Remain Friends

1

Vänskapen
överlever



Reflection cards for future 1: Backside and frontside



Vad behövde förändras för att vänskapen skulle överleva? Hur gick förändringen till?

Om du var Mika, vad tror du att du hade känt dig ansvarig för i konflikten?

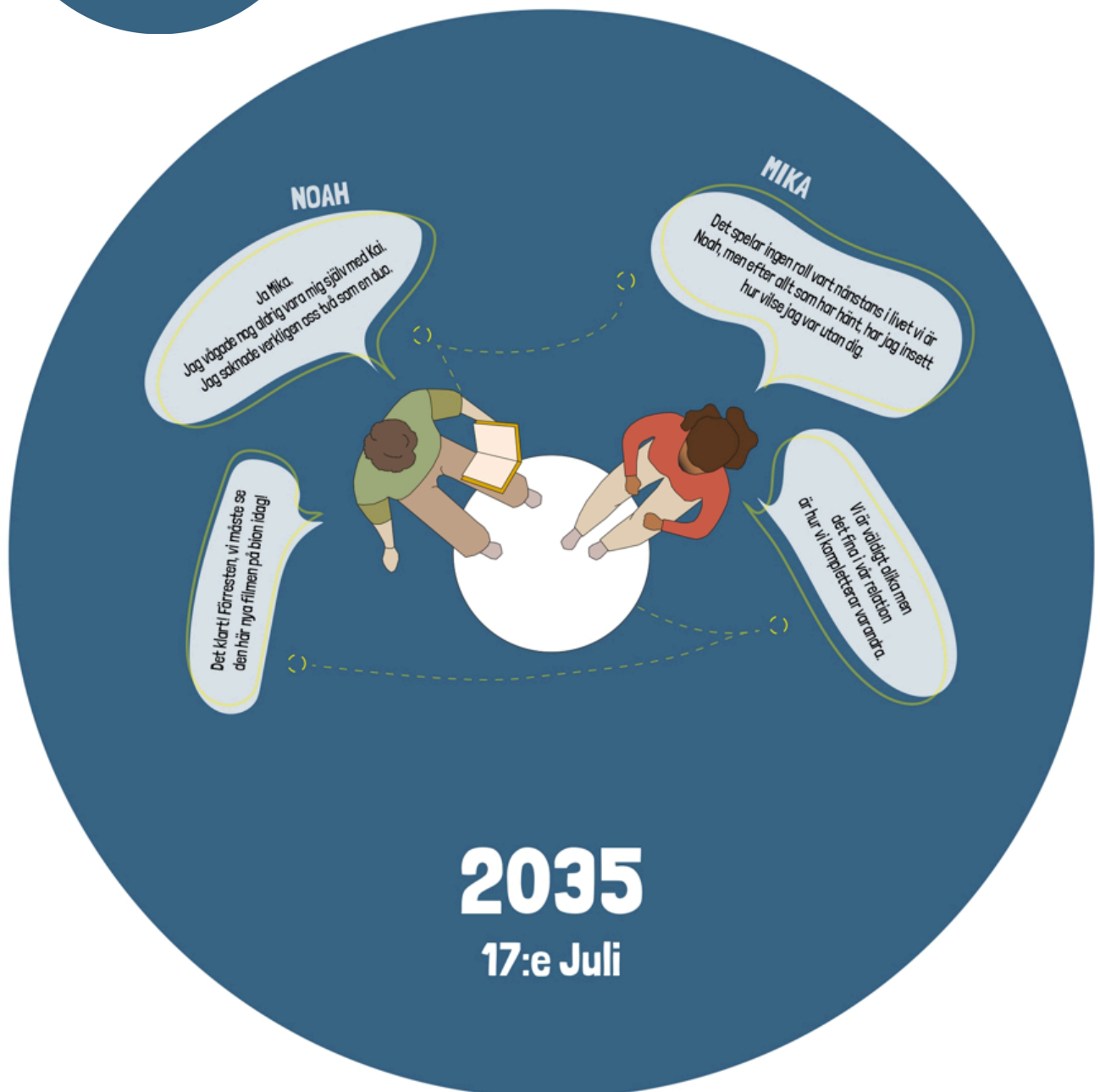
Efter att du upplevt fördigt installationen uppmanar vi dig att titta på dina svar igen och översätta dem till symboliken. Vad säger dina svar dig nu? Från de någon ny betydelse?

Lämna en reflektion till nästa vän:

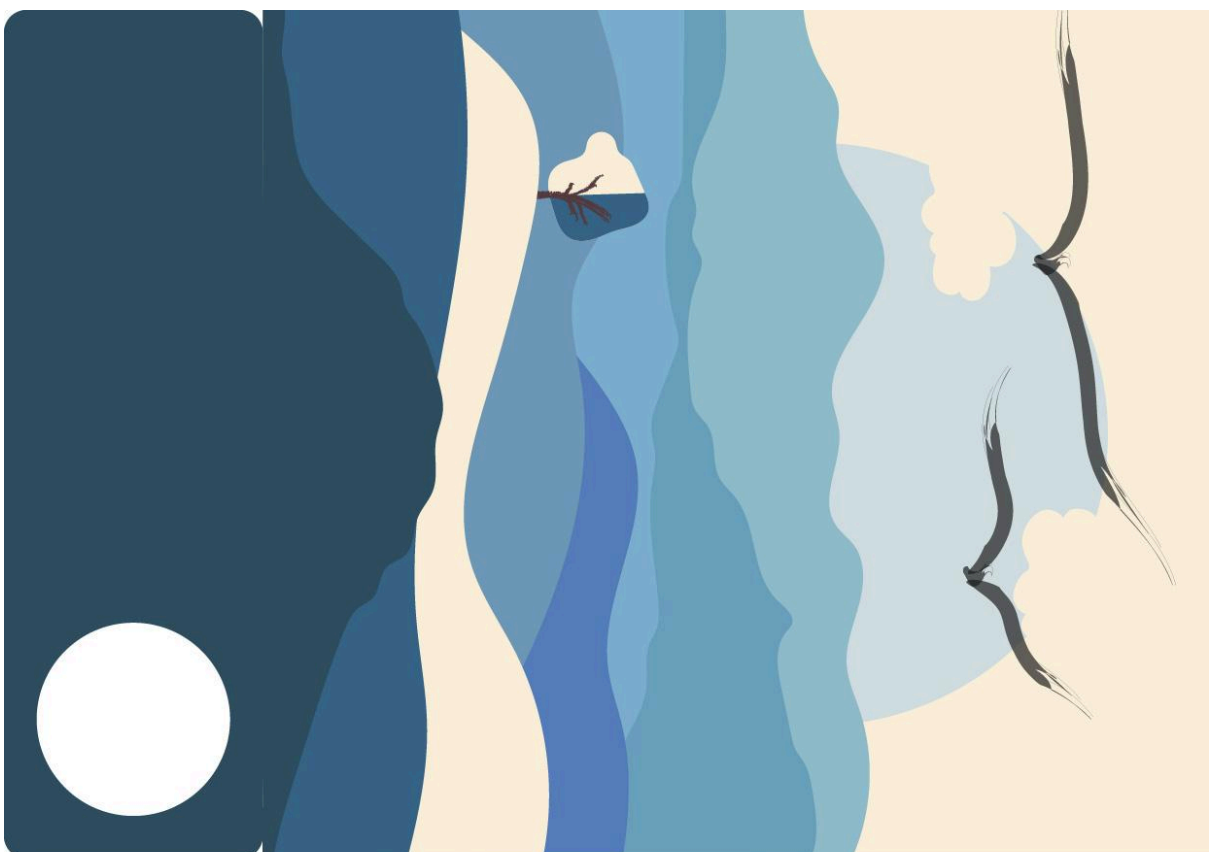
H. Future 2 in Vänkskapsprövningen: Mika and Noah Remain Friends While Kai moves on

2

Mika & Noah
vänner igen



Reflection cards for future 2: Backside and frontside



**Hur tror du att Mika och Noah kom fram till att Kai inte
passade in i vänskapen?**

Vilka problem kan de träffa på i framtiden utan Kai?

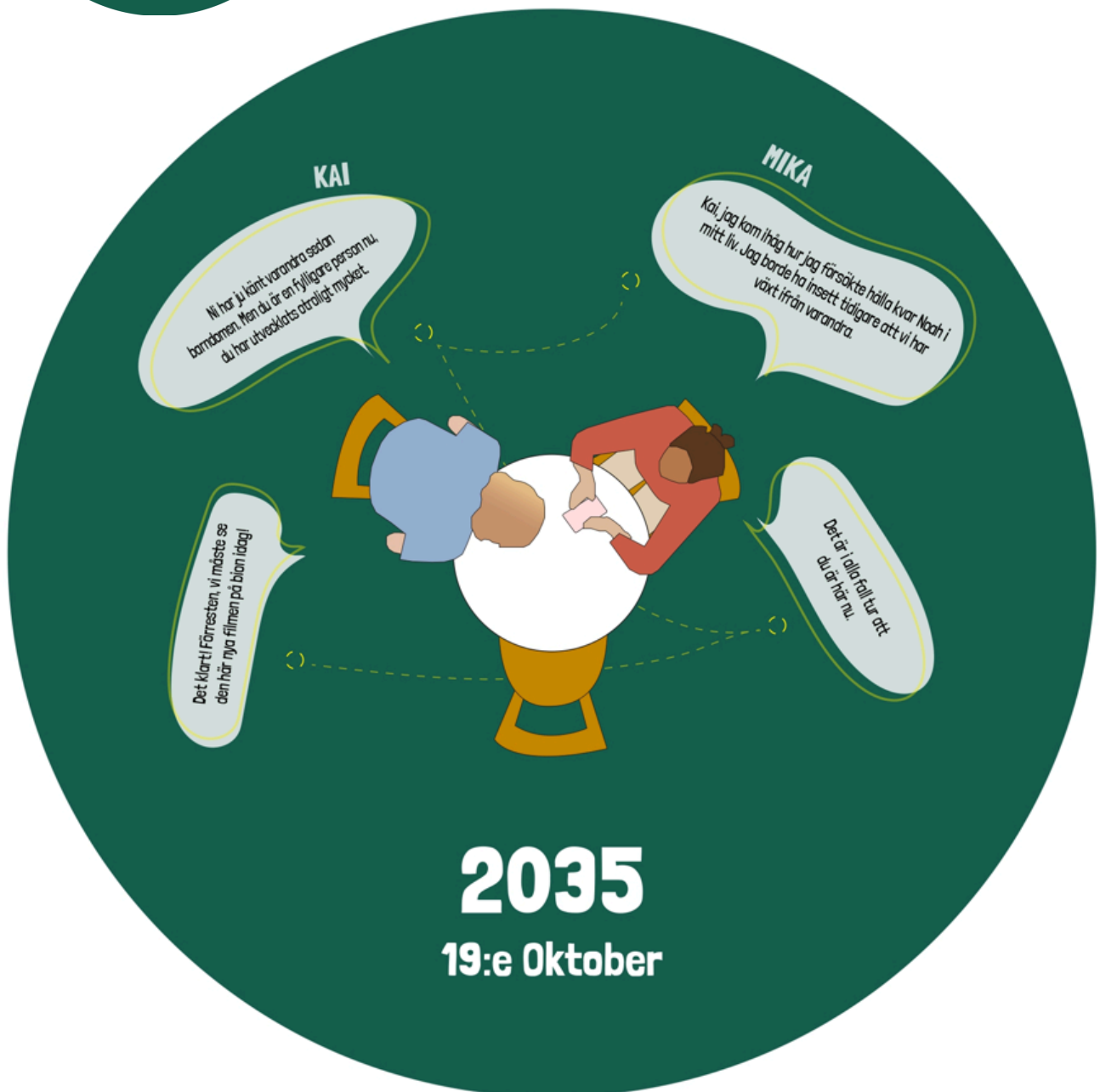
Efter att du upplevt färdigt installationen uppmanar vi dig att titta på dina
svar igen och översätta dem till symboliken. Vad säger dina svar dig nu? För de
någon ny betydelse?

Lämna en reflektion till nästa vän:

I. Future 3 in Vänshipsprövningen: Kai and Mika Remain Friends While Noah Moves on

3

Kai & Mika
förblir vänner



Reflection cards for future 3: Backside and frontside



Hur tror du att Mika och Kai kom fram till att Noah inte passade in i vänskapen?

Vad finns det för potentiella problem som Mika och Kai skulle kunna träffa på i framtiden utan Noah?

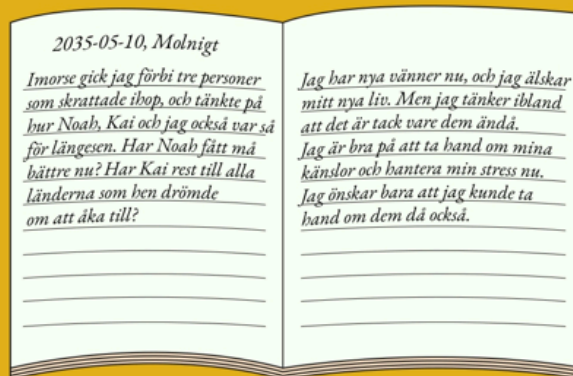
Efter att du upplevt färdigt installationen uppmärskar vi dig att titta på dina svar igen och översätta dem till symboliken. Vad säger dina svar dig nu? För de någon ny betydelse?

Lämna en reflektion till nästa vän:

J. Future 4 in Vänskapsprövningen: All Friends Go Separate Ways

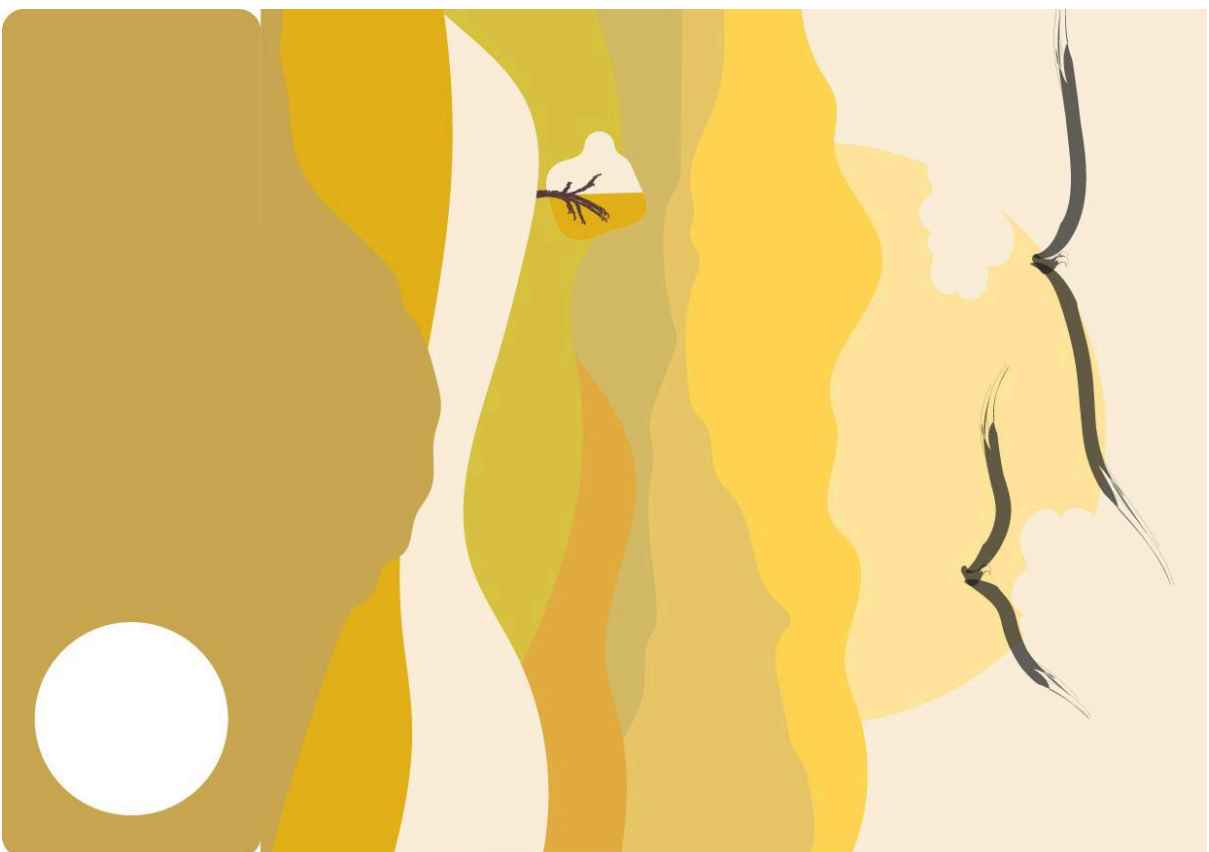
4

Alla vänner går
skilda vägar



2035
10:e Maj

Reflection cards for future 4: Backside and frontside



Vad var den avgörande faktorn bakom misslyckandet av deras vänskap, deras agerande, eller deras personligheter? Varför?

Hur ser Nikas nya relationer med de nya vännerna ut, om deras vänskap är hälsosam?

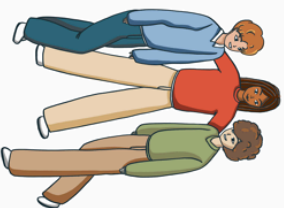
Efter att du upplevt fördigt installationen uppmanar vi dig att titta på dina svar igen och översätta dem till symboliken. Vad säger dina svar dig nu? För de någon ny betydelse?

Lämna en reflektion till nästa vän:

K. Brochure of Results

VÄNSKAPSPRÖVNINGEN **RESULTAT**





Du har nu fått följa en berättelse om relationen mellan tre vänner. Förhoppningsvis har du fått nya insikter om vad det innebär att vara en god vän till dem du bryr dig om.

Det som först verkar vara en berättelse om vänskap visar sig också vara en spegling av något större. Mika, Noah och Kais relation symboliserar nämligen hur vi människor förhåller oss till två delar av våra liv vi inte kan vara utan: naturen och konsumtion.



Mika symboliserar människan



Noah symboliserar naturen

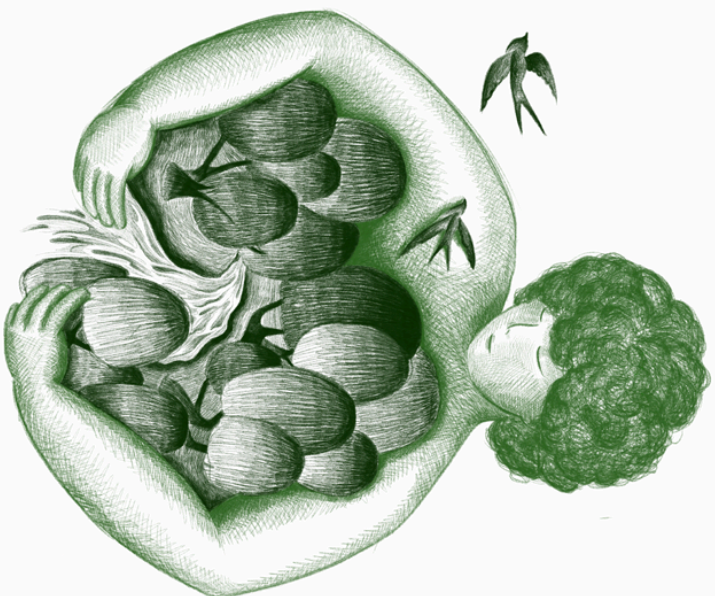


Kai symboliserar konsumtionen

Mika, Noah och Kais konflikter speglar dynamiken mellan människan, naturen och konsumtionen i dagens värld. **Människan lever ett stressigt liv och riskerar att bli övervåldigad. Naturen tar stryk och har förlorat kontakten med människan. Konsumtionen verkar vara det som hjälper människan att distrahera sig från sina bekymmer och problem. Men är detta verkligen hållbart?**

Kan du på något sätt översätta dina reflektioner om berättelsen längst vägen, till den relation som vi människor har med naturen och konsumtion?

De nästkommande sidorna avslöjar hur karaktärernas design och berättelsens utformning speglar olika aspekter av relationen mellan människan, naturen och konsumtionen.



Naturen NOAH



Har vi inte en så godkänd kultur att det går för oss alla men jag tror verkligen inte jag delar med mig av den så här hela tiden... Vårskisse kan hitta på lugnare saker?

1

Naturen kan initiera kontakt och kommunicera sina problem och svårigheter. Det är lätt att märka när naturens behov inte tillgodoses. Men i och med att människor i dag ofta lever på avstånd från naturen, avtar empatin med tiden.



2

Källa har skapat redan berättat för dig...

När naturen ställs inför större utmaningar blir dess kommunikation än tydligare. Detta tar sig i uttryck genom långsamma förändringar, såsom förhöjda havsnivåer, stigande temperaturer och minskad biologisk mångfald.



3

Har inte ökat, det känns inte riktigt som du bryr dig ändå.

Naturen kan också agera mer aggressivt gentemot människan för att tydligare visa konsekvenserna av bristande kommunikation. I verkligheten kan detta ske i form av naturkatastrofer som skogsbränder och översvämningar.

Kan du översätta dina reflektioner för vänskapens framtid, till framtiden för människan, naturen och konsumtion?

Kan du identifiera konsumtionsbeteende i din vardag som tar skada på naturen?

Vilka tror du är de bakomliggande faktorerna till dessa beteenden?

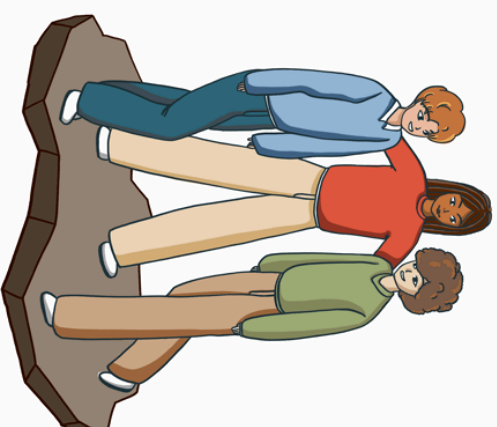
I berättelsen upplever karaktärerna mycket stress i vardagen. Känner du igen effekten av en allt snabbare vardag? Hur?

Vad brukar du göra när du upplever negativa påfrestande emotioner?

Är överkonsumtion och distraktion vanligt förekommande?

Vad är naturens värde i människans hantering av negativa känslor?

Finns det utrymme för att återfinna kopplingen mellan människan och naturen i en stressig vardag?



**Lämna en reflektion till nästa vän på anslagsstavlan.
Tack för att du har medverkat i Vänskapsovningeni**