

Promoting Toddlers' Fine Motor Skills and Independence with a New Food Tray Design for Joolz Strollers

MSc Thesis by N.L. (Niene) Keizer

Public version



MSc Thesis - DPM 2118

N.L. (Niene) Keizer

Faculty of Engineering Technology

Industrial Design Engineering – Human Technology Relations

Client

Joolz – MILK Design BV

Distelweg 89

1031 HD, Amsterdam

info@Joolz.com

Educational Institution

University of Twente

Drienerlolaan 5

7522 NB, Enschede

info@utwente.nl

Examination committee

Chair

: prof. dr. ir. G.D.S. Ludden

Supervisor

: ir. W.F. Kets

External Member

: dr. ing. S. Yang

Company Supervisor

: Benjamin Holefleisch

Examination on July 1, 2024

Abstract

The aim of this thesis project is to design a new snack tray for Joolz's Aer+ stroller. Joolz is a company that develops strollers and accessories for the strollers. A snack tray is such an accessory. It is a product that can be clicked onto a stroller in front of the child and is used to store and serve food and drinks. The Aer+ stroller, for which the accessory will be made, is a compact buggy that can be folded in one move. The snack tray currently sold by Joolz does not fit on the Aer+. In addition, this snack tray does not match design values of Joolz. Within this project, a redesign of the Joolz snack tray is central. The redesign should not only fit with Joolz and fit with the Aer+, but also promote the child's fine motor skills and independence.

Prior to designing the product, research was conducted in several areas. Using the knowledge from the master course Graphic Language of Products, the Joolz design style was examined. A literature review provided information on promoting fine motor skills and independence. Interviews were used to talk to parents and identify their needs, wishes and current challenges. One challenge parents face while feeding their child in a stroller is that it becomes a mess. Furthermore, parents are mainly looking for convenience.

The main findings are processed into wishes and requirements in the Program of Requirements. Brainstorm sessions and ideation sketches were used to identify potential directions. These ideas finally led to three concepts relating to the themes of health, convenience and playful. For instance, within the playful concept, children themselves can arrange playful and educational games on the product lid. This is a public and therefore abbreviated version of the report, which does not go beyond generating concepts.

Preface

After about 8 months, I am happy to end an educational and challenging project with the underlying report describing the redesign of a snack tray for the Aer+ stroller of Joolz. Joolz specializes in designing luxurious and trendy strollers with the goal of empowering the new generation of parents while keeping quality and durability in mind. A beautiful and meaningful mission to which I was happy to contribute with my project. In addition to providing a quality design for the company, my overarching goal from November 2023 to June 2024 was to obtain my master's degree in Industrial Design Engineering from the University of Twente.

During the execution of this thesis project, I was able to put into practice the knowledge I gained during my master's degree. For example, in the Graphic Language of Products course, I learned how to analyze a brand and translate the brand values into a new product, in this case a food tray for Joolz. Having transferred from the university of applied sciences last year, I am pleased to see that I have been able to develop further especially academically over the past period.

The project began with a comprehensive research phase. During my research into the needs of the target audience, I spoke to several parents who provided me with meaningful insights. Through this route, I extend my thanks to them. With the findings from the research phase, I began the design phase. In equal measure, I would like to thank the parents who helped evaluate my models and test the concept in this last stage of the project. I can confidently say that all the parents involved effectively took the final result to the next level.

My company mentor, Benjamin Holefleisch, encouraged me to keep a critical eye throughout the design process and assisted me with various questions and difficulties that arose during the project. I would therefore like to thank him, along with the entire PD-department of Joolz, for the far-reaching helpfulness and support. Finally, I thank my supervisor Wouter Kets. He provided me with adequate guidance and continuous feedback of value throughout the process. His positive and motivating attitude throughout the entire process has provided additional confidence in the final result to be realized.

I hope you enjoy your reading.

Niene Keizer

Almelo, June 16, 2024

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Chapter 1. Introduction & Project Goal

This chapter starts with introducing this graduation report and providing relevant background information. It aims to give a brief overview of what has been described in this report. In addition, it addresses the purpose, aims and objectives of the project. Besides that, this chapter outlines the overarching research question and the sub-questions it includes. In conclusion the methodology of the project is decided.

1.1 Introduction

The development of fine motor skills and independence is of crucial value for children in their early childhood. Promoting these skills as early as possible ensures, among other things, that children are not developmentally delayed and allow them to make independent choices later on in their life. The Amsterdam-based manufacturer of trendy and luxurious strollers Joolz, has a snack tray for strollers on the market, but wishes to create a new design that is developed with children's fine motor skills and independence in mind. In addition, the snack tray, which easily mounts to a stroller so the child can eat on the go, is outdated and no longer fits the company's design style.

My mission is to develop a new snack tray taking these current dissatisfactions into account. This mission is interesting and above all multifaceted, as it requires a deep understanding of several concepts, including fine motor skills and children's independence. In addition, it also requires thorough research into the business, and skills in idea generation and product development.

The process consists of both scientific research and a design phase. Using qualitative and quantitative research on design and users, for example, requirements and wishes are drawn up. An example of a research conducted is a user interview, in which stroller users are interviewed and share their experiences of feeding their child in the stroller. This led to many sensible insights that are reflected in the underlying report.

With the findings from the research, the design phase is started. In this phase, as many different ideas as possible are conceived. By combining ideas and presenting wooden models to parents, a concept is selected. This concept is elaborated and prototyped in order to test with children. For a comprehensive outline of the problem statement and the resulting research structure, the following chapter can be consulted.

1.2 Project aim and objectives

The goal of this research and design project is to design a new product that replaces Joolz's current snack tray. The snack tray is a product that can be clicked onto a stroller in front of the child and is used to store and serve food and drinks. In addition, Joolz promotes that the compartments in the tray can also be used to store toys. This allows the child to eat, drink and play by himself on the go.

At present, two problems exist with the current snack tray. Solving these two problems, also form two objectives for the new design.

(1) Current design does not fit the design language. Joolz has developed a distinct design style that can be associated with the brand. The current design of the snack tray, however, does not reflect this design style, which is a problem. Within this project, a goal is established to design a product that better reflects the visual identity of Joolz.

(2) Current design is not compatible with the Aer+. The current snack tray is not compatible with the Aer+ buggy, mainly because of the current attachment system of the product. The Aer+ is a lightweight vehicle that folds in and out with one motion. Another purpose of this project is to create a product that can be attached to the Joolz Aer+ stroller.

In addition to the above, there is a third objective. This one, however, comes not from a problem but stems from the ethos and wishes of Joolz.

(3) New design needs to promote fine motor skills and independence. Joolz understands the challenges that modern parents face in balancing their lives and strives to provide quality products that support parents in their journey. In line with this ethos, the new product needs to promote children's fine motor skills and independence. By incorporating this function, the product can provide parents with valuable tools to encourage their child's development while providing the support parents need in raising their child.

1.3 Research question

To outline the research area, the following central research question was formulated.

How can Joolz empower parents to promote fine motor skills and independence during nutritious meals for children aged 1 to 4 in a stroller?

To answer the central research question, several sub-questions are developed. Note that Chapter 3 of this report answers the research (sub-)question(s). The sub-questions are as following.

- *What are the problems with the current Joolz snack tray? (Section 3.3)*
- *What are existing products that empower parents while feeding their child in the stroller? (Section 3.4)*
- *What are parents' preferences and priorities when buying children's essentials? (Section 3.5)*
- *What is a nutritious meal for children between 1 and 4? (Section 3.7)*
- *What fine motor skills are essential for children ages 1 to 4 and how can their development be promoted? (Section 3.9)*
- *How to promote the development of independence in children ages 1 to 4? (Section 3.10)*
- *What are parents' experiences with feeding their child in a stroller? (Section 3.12)*
- *When do parents feel empowered during feeding their child in a stroller? (Section 3.12)*

1.4 Methodology

Within this section, the methodology of the project is discussed, this includes the overall approach used to reach the end goal, in this case a design product. In addition, the report structure is shortly discussed.

1.4.1 Approach

In this project the Research for Design approach will be used. This methodology begins with information gathering after which the design phase takes place. This way the research conclusions can be applied when designing the product. Within the Research for Design approach, the Double Diamond-method was followed, in the figure below (Figure 1: Double Diamond-method) a visualization of this method within this project is given.

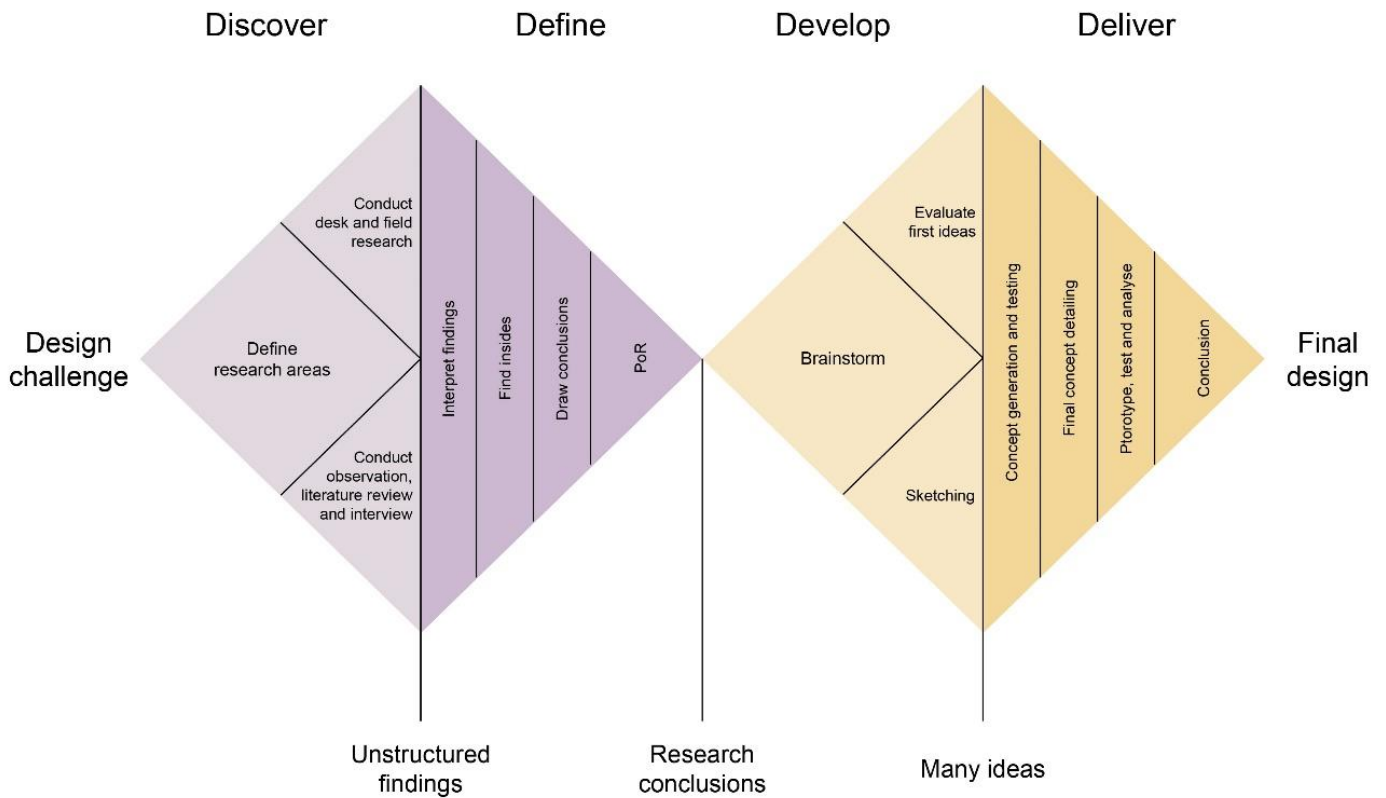


Figure 1: Double Diamond-method

The figure below (Figure 2) shows the phasing used within the report. Going through these stages in the report follows the Double Diamond method.

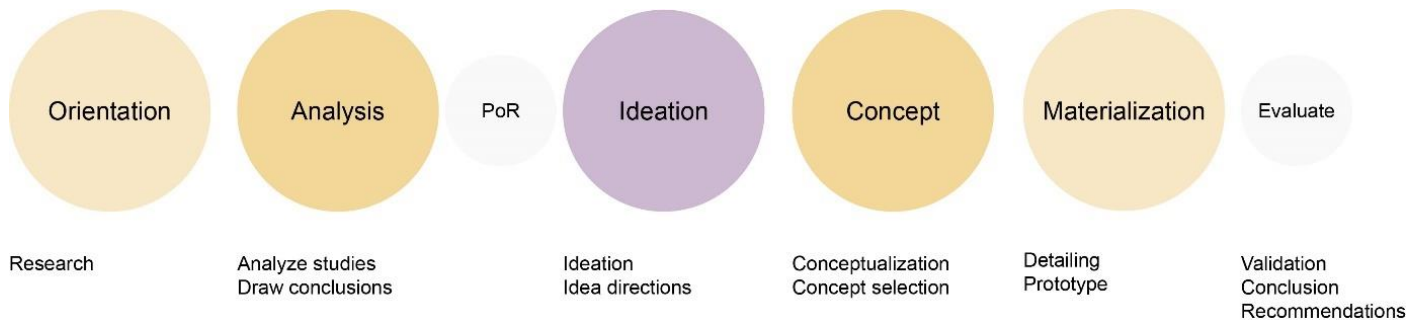


Figure 2: Report phasing

1.4.2 Report structure

The underlying report is structured from the methodology described above. The report starts with the orientation and analysis phase (Chapter 3). This chapter describes different types of research conducted, e.g., desk research, literature reviews and qualitative research, to provide final answers to the sub-questions and the overarching research question. Then, using the research conclusions, requirements and associated testing methods are established (Chapter 4). The next chapter is about the ideas that are generated and includes the generation of concepts and the selection of the final concept (Chapter 5). The subsequent chapter covers getting the concept technically right (Chapter 6). This is followed by a validation of the concept (Chapter 7). The report ends with a conclusion and recommendations (Chapter 8).

Chapter 2. Orientation and Analysis

This chapter covers the orientation and analysis phase. The goal is to gather information to better understand how to promote independence and fine motor skills in children aged 1 to 4. Various research methods are used, including desk research, field research, literature research, observation, and qualitative research. After collecting the information, it is analyzed to draw conclusions. At the end of this phase, an attempt is made to answer the research question. This forms the basis for further product development.

2.1 Joolz design style and company profile

The Joolz design style will be determined by analyzing the current products and a stroller prototype of Joolz. In order to map the design style closely, several tools will be used, such as a brand identity prism, DFA analysis, and a brand translation prism. The design style is determined with the goal of matching the product to be designed with existing Joolz products. First an analysis of Joolz is done by using a company profile and mapping the brand identity.

2.1.1 Company profile

A better world for children and parents. Joolz wants to achieve a better world for children with their self-designed strollers, buggies, and accessories (*Over Joolz*, n.d.). The products are designed for parents with children between 0 and 4 years old. Joolz aims to give parents the right support with their products, which helps parents to stay balanced, comfortable and in control of their lives.

Sustainability. Joolz values sustainability. That is why they use sustainable fabrics and reusable packaging for their products. Besides that, they launched an initiative in which they plant a tree for every purchase of a stroller. Today, the company now has planted thousands of trees around the world. Finally, at the Joolz office in Amsterdam, the company's future-oriented mindset also becomes quickly apparent through its architecture and plantings. The office houses in a sustainably renovated factory with futureproof greenhouse and energy-neutral solutions (Figure 3).

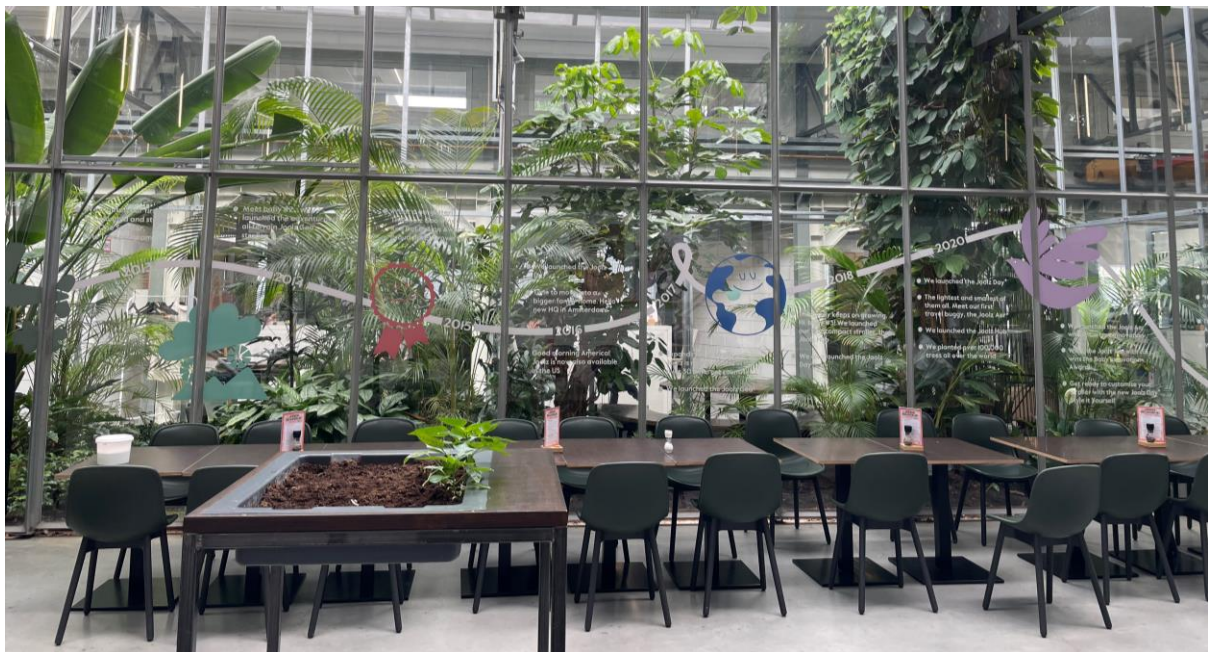


Figure 3: Joolz Amsterdam office

2.1.2 Brand identity

A. Essence of the brand

The essence of Joolz is made clear through their mission, vision, and Simon Sinek's Golden Circle. The mission states what the company stands for and what their values are. A vision indicates the future dream and what the company wants to go for.

Mission. Joolz empowers the new generation of parents with smart and conscious products, unlocking unstoppable parenting superpower – where comfort, balance, and control thrive. They are team parent and supporting parents in creating a world for their children to be proud of (*Over Joolz*, n.d.).

Vision. Joolz strives for a world where real parents confidently shape a brighter future for their children. Providing products that enhance comfort, balance, and control, enabling families to live, love, and enjoy together (*Over Joolz*, n.d.).

Simon Sinek's Golden Circle maps out the essence of a company (Sinek, 2009). It shows with what, how and why a company stands out from other companies. The illustration below (Figure 4) shows an application of the Golden Circle to Joolz.

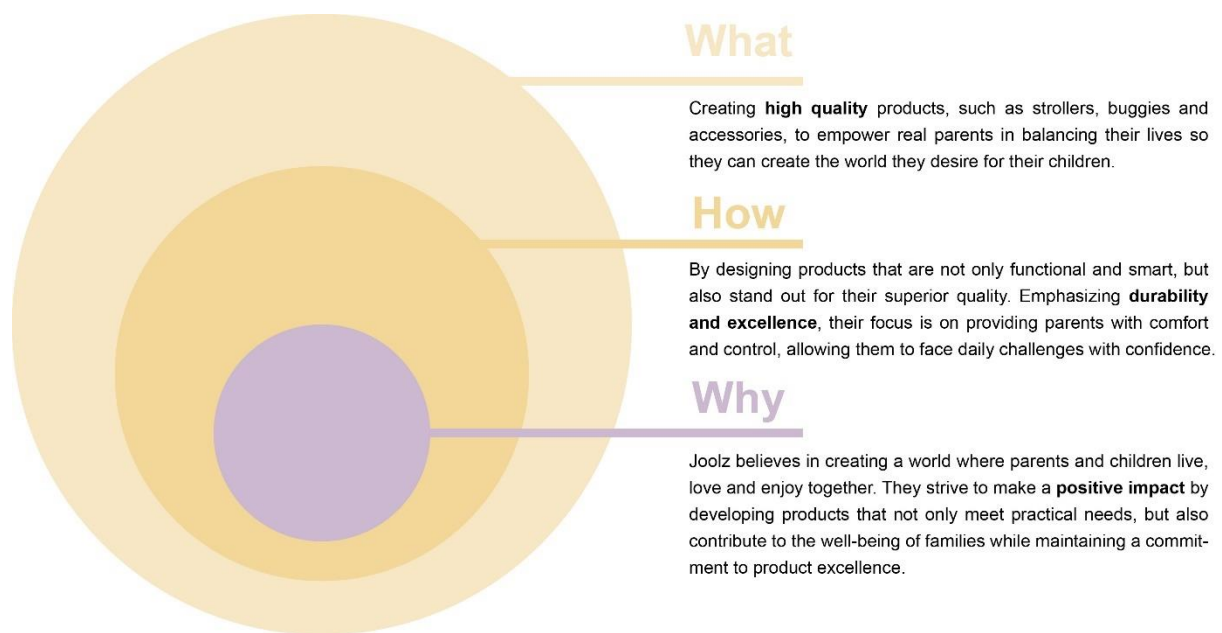


Figure 4: Golden Circle for Joolz

B. Brand guidelines

Logo design. The Joolz logo is a wordmark. The wordmark that can be found on all strollers and buggies illustrates the name Joolz in a thin and lightweight font with a modern and playful look. The name is a play on the word 'jewels', considering the founder wanted Joolz products to feel like jewels to consumers (TKhan, 2021). About the wordmark, Joolz's brand book mentions it is an approachable and strong mark based on the geometry of the word and its angles. Joolz also uses the first letter of the wordmark ('J') as a separate logo. This letter is used, for example, as a social media profile picture, but can also be found on various products. The logos can be seen in Figure 6. In addition to appearing on the products, the wordmark is also featured in the imagery.

JOOLZ J

Figure 5: Joolz logo

Color use. The Joolz color palette can be divided into communication colors and product colors. In communication, different colors are used resulting in a colorful whole. The website uses a white background with black text and a combination of soft colors. The main colors are green, yellow and blue, but other commonly used colors in communication are red and purple. Joolz uses color as an ally to create applications that combine elegance with sparkle, playfulness and calmness.

Joolz currently does not use colorful shades within their product design. The strollers and buggies are available in different colors. Green, blue, black, beige, and gray are the current color options. The accessories are either compatible in color or black or gray. Besides color options, there are parts to the strollers and buggies that have a standard color. The most common colors used for these parts are black, dark gray and brown. Figure 6Figure 6: Product color palette shows a color palette with the standard colors Joolz uses in its products, as well as some current color options that recur in different products.



Figure 6: Product color palette

C. Advertisements

In communication, Joolz focuses on conveying the playful nature of the brand. They do this by using colors and illustrations. The communication consists of positive quotes and product photos (Figure 7). Joolz's tone of voice, according to themselves, can be described as 'Human, Realistic, Lively and Reassuring'. This results in direct, optimistic, reassuring, confident, and playful communication.

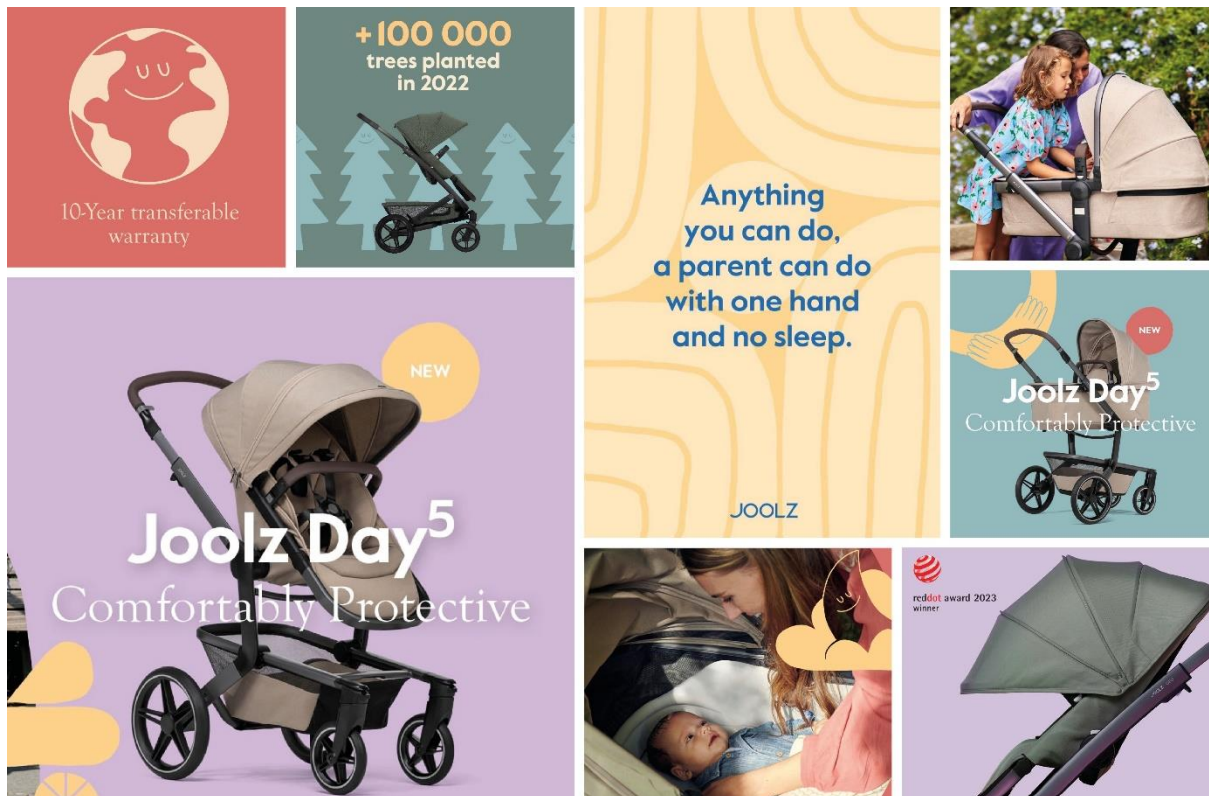


Figure 7: Joolz advertising

D. Brand portfolio

Strollers. Joolz's portfolio currently consists of four different strollers (Figure 8) that have variations (*Alle Joolz Kinderwagens*, n.d.). When the user wishes so, a cot or a seat can be attached to the stroller. Looking at Joolz's offerings, a rough distinction can be made between compact and comfortable strollers. The company focuses on designing strollers and buggies for different segments to appeal to a wide audience. For example, Joolz makes strollers for babies, but also for toddlers. The company has as well a model in which two children can sit simultaneously. The strollers are generally positioned as premium, with prices ranging from EUR 500 to EUR 1900. The fabric of the strollers is made from plastic bottles that are transformed into fabrics. As previously mentioned, the strollers are available in different color options. What exact colors are available, differs per model. Joolz has a configuration tool where several other colors and patterns are available. Other colors seen in the strollers are black, dark gray and sometimes brown.



Figure 8: Joolz product portfolio

Accessories. In addition to strollers, Joolz sells accessories as well (*Joolz Kinderwagen Accessoires*, n.d.). These accessories can be combined with the strollers. These include different kinds of car seat adapters, mattress covers, cup holders, foot bags, ride-along boards and comfort covers. A small selection of Joolz accessories can be seen in Figure 9.



Figure 9: Joolz accessories

E. Brand identity prism

The Kapferer Brand Identity prism is used to map Joolz's character and identity (Kapferer, 2008). The model clarifies what a brand stands for and what the customers think of themselves (Figure 10).

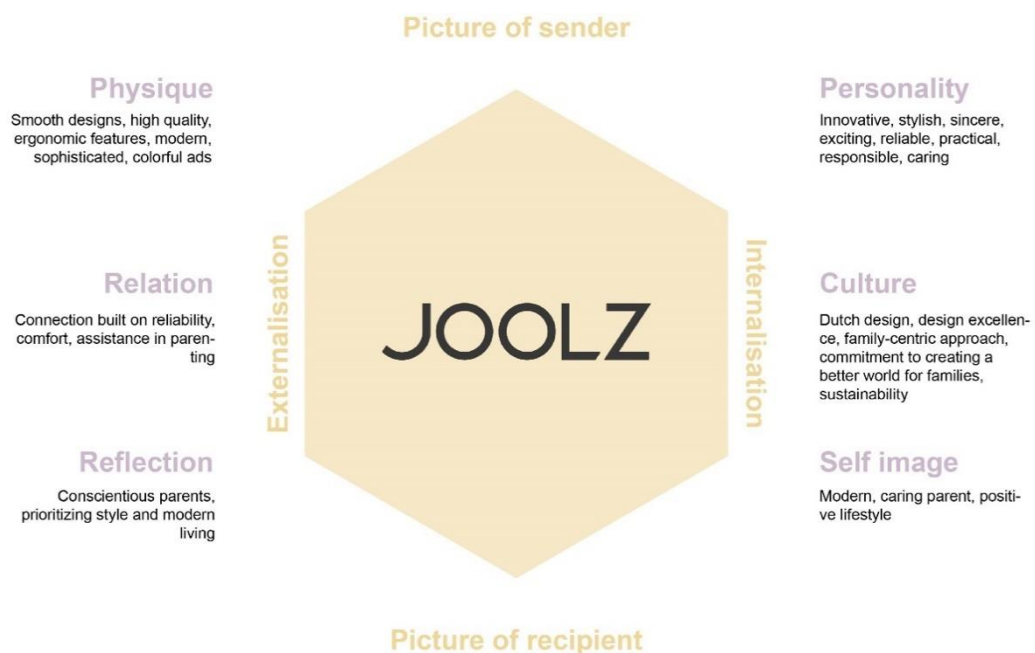


Figure 10: Kapferer Brand Identity prism for Joolz

2.1.3 Explicit and implicit cues

A. Day+ versus Day5

Two strollers in Joolz's current collection are the Day+ and the Day5. The Day5 is the successor to the Day+. This new version is characterized as a typical Joolz product and exudes the Joolz design style. In the image below (Figure 12), the two strollers are compared on external features to see which characteristics currently match Joolz. For example, the Day5 has thinner tubes, smaller fillets and less material use, giving the stroller a less robust and more elegant look than its predecessor.

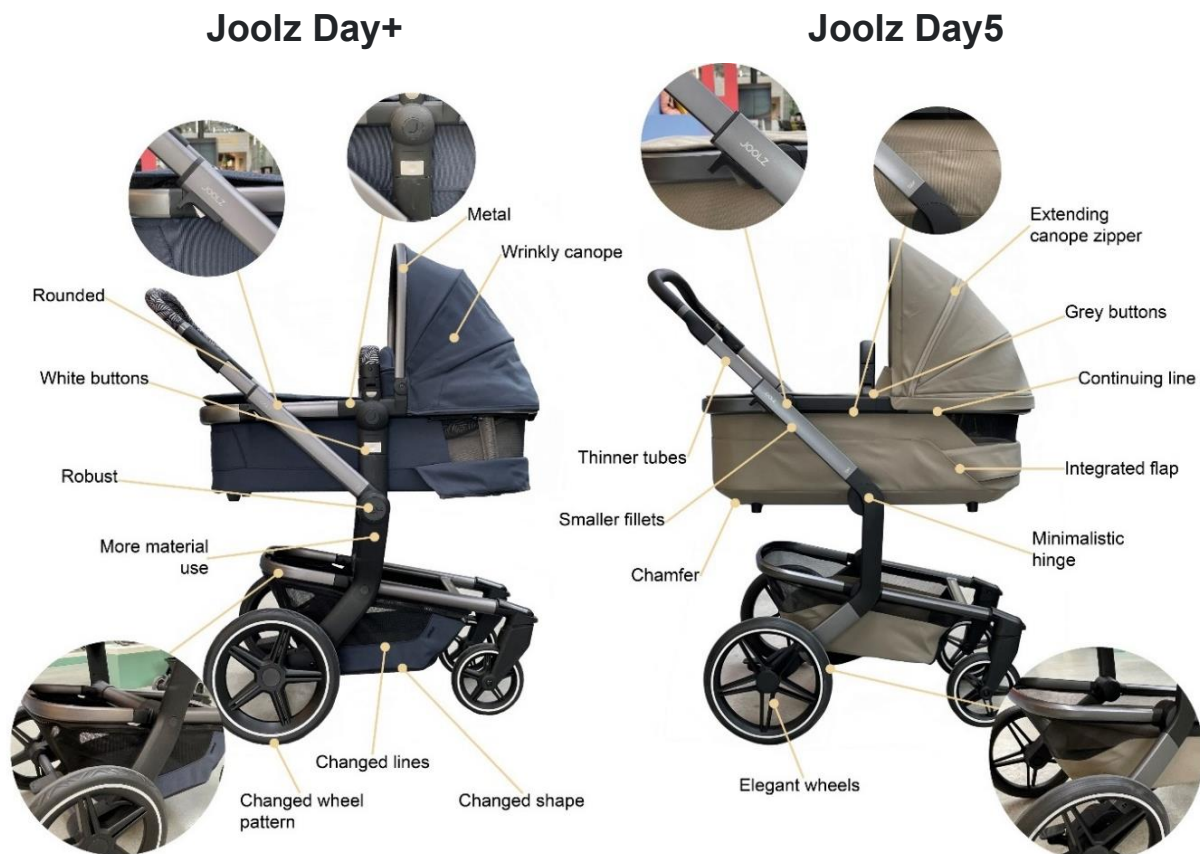


Figure 11: Joolz Day+ versus Joolz Day5

B. Design Format Analysis

To dive deeper in the explicit characteristics of Joolz, a DFA analysis is conducted (Warell, 2001). This analysis helps with the identification of the typical design features that are repeated within Joolz's product portfolio. This analysis includes the current product portfolio (Figure 13). The strollers are compared to each other to determine which features are repeated and which stroller has the most characterizing features. The features were retrieved using the Karjalainen method (Karjalainen, 2007). This method looks at explicit characteristics and design lines by analyzing the product portfolio. The analysis can be found in Appendix A Karjalainen.



Figure 12: Joolz strollers

The strollers and explicit features are placed on two different axis (Figure 14). A feature is marked if it can be found in the stroller - and this process is repeated until all features are covered across the different strollers. The analysis explicitly shows that the Day5 stroller has all features and are therefore the most typical Joolz products. They have angular accent lines, small fillets, continuous lines and the technique integrated.

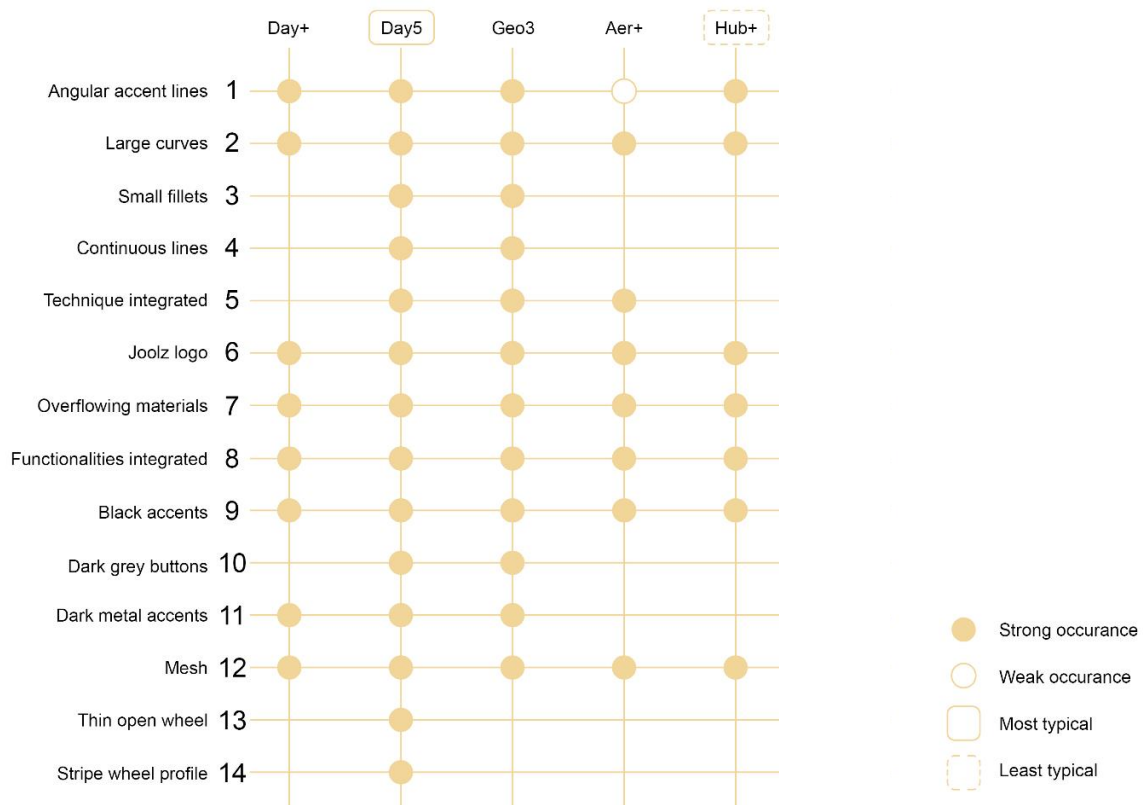


Figure 13: Design Format Analysis for Joolz

C. Identity recognition grid

The identity recognition grid is used to gain insight into the values conveyed by Joolz's strollers, the so-called implicit design characteristics. The products are placed on a vertical line with opposite values, see Figure 15. This psychometric scale, also called a semantic differential scale, measures how the strollers are perceived (Osgood et al., 1957). This shows that not all the products exude the same values. The old designs (Hub+, Air+, Day+) have a more bulky, less sophisticated and less luxury appeal

than the new designs (Day5, Geo3). The new products reflect the same values. These products are seen as modern, elegant and luxurious, for example.

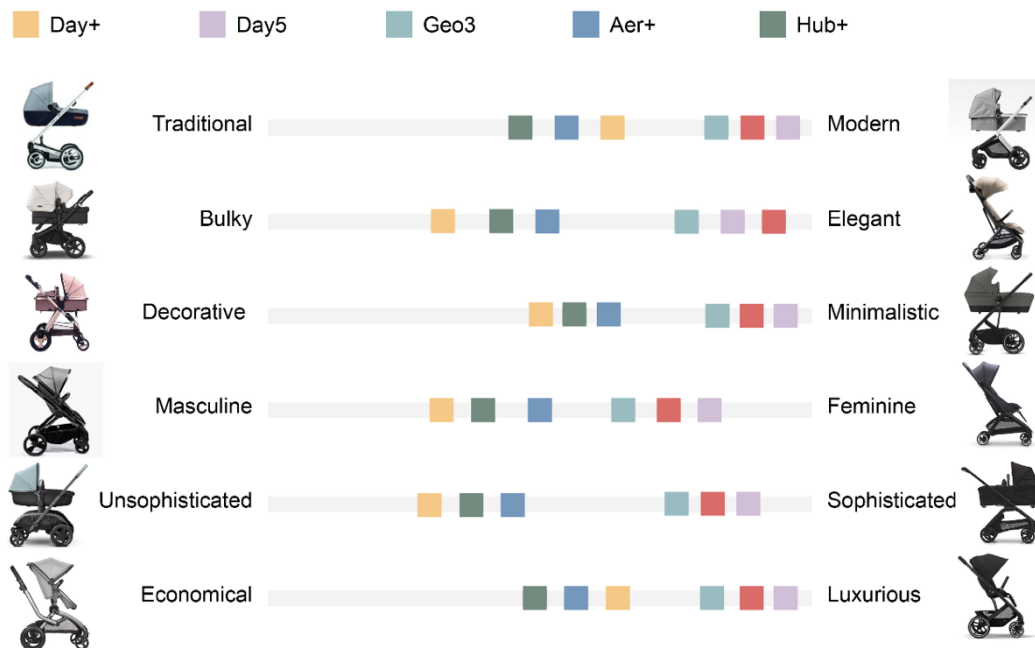


Figure 14: Identity recognition grid for Joolz

D. Brand translation prism

The brand translation prism (Figure 15) helps identifying the core values associated with a brand. The prism consists of design cues at different levels: 3D, 2.5D and 2D. The first-order associations describe all explicit design cues such as colors, material and form language. These associations are *objective*. Some first-order associations for Joolz are neutral colors, large curves and black accents. Second-order associations have all the implicit design cues and *subjective* associations and are driven by the first-order associations. Examples of second-order associations of Joolz are modern, luxurious and precision. Finally, core values indicate the values that are driven by both first- and second-order associations. Through a combination of the first- and second-order associations, the core values of Joolz were determined. The values of elegance, minimalism and premium must be translated into the product to be designed.

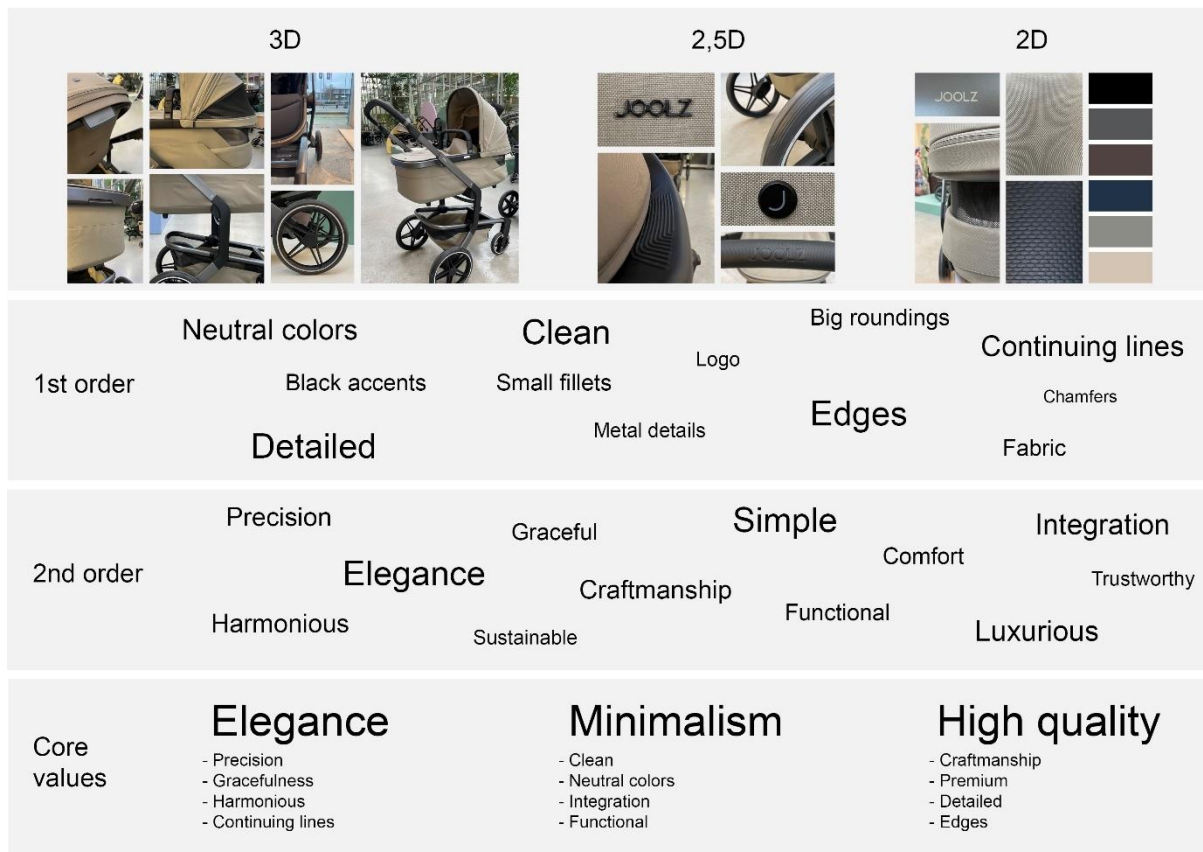


Figure 15: Brand translation prism for Joolz

2.1.4 Conclusion analysis

This research focused on analyzing the brand Joolz and its design style using various theoretical models. The Golden Circle clarified the brand's rationale, while the Kapferer Identity Prism provided a comprehensive view of its identity. A DFA analysis identified the Day5 as the most representative Joolz stroller, characterized by continuous lines, integrated technology, and small fillets. The brand identity prism defined Joolz's three core values: elegance, minimalism, and high quality. Both explicit and implicit signals need to be translated into future designs.

2.1.5 Design strategy

A. Design values

From the brand translation prism, three brand values emerged: elegance, minimalistic, and high quality. In Figure 17 a mood board visualizes these values and represents the matching look and feel. This mood board can be used to translate the values into the final product.



Figure 16: Joolz design values

B. Design lines

Using the DFA, Joolz's explicit design cues were discovered. These include the angular accent lines, small fillets and overflowing materials. In the design phase, the mood board below (Figure 18) can be used to transfer design lines and typical features to the final product.



Figure 17: Joolz design lines

2.2 Stroller competitors

To obtain an understanding of the stroller market, field research on Joolz's competitors was conducted, and a comparison was made to determine Joolz's market position. In this analysis, the focus is on the design style, focus (luxury or budget) and functionality of competitors' strollers.

2.2.1 Positioning matrix

Through field research at Dutch baby stores Prénatal and Babypark, Joolz's biggest competitors were identified. Using a positioning matrix (Figure 18), Joolz and its competitors are compared in terms of their focus (luxury or budget) and their design style (traditional or trendy). It is known that Joolz mainly focuses on selling luxury and trendy strollers.

The matrix shows several useful findings. It is immediately apparent that Joolz's strollers are the trendiest. What also stands out is that there are relatively many brands active in offering strollers that are both trendy and luxurious. In this top-right area of the matrix, it can be found that Cybex, Bugaboo and Nuna are Joolz's biggest direct competitors when it comes to positioning in the market. Easywalker is an indirect competitor, as the brand does make trendy products, but focuses them more on the budget stroller market.

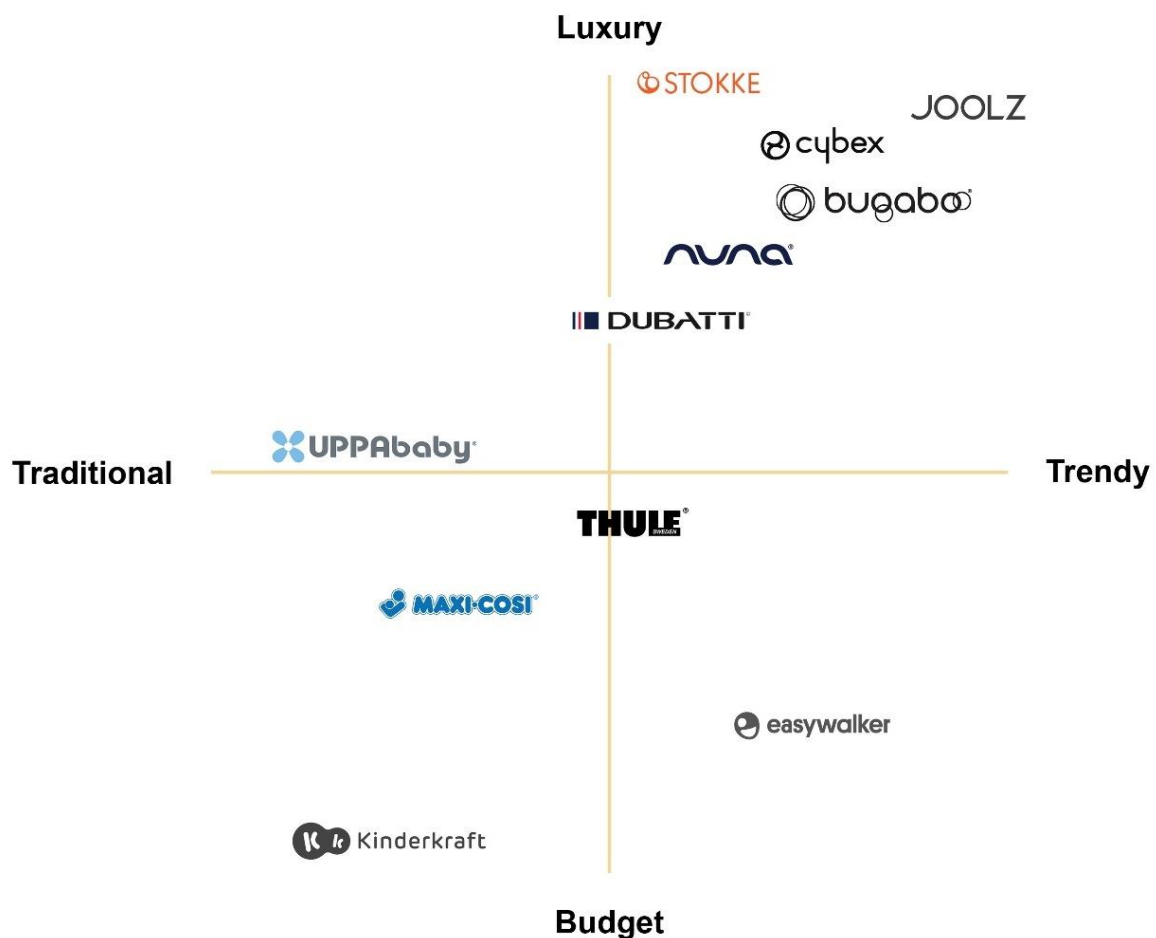


Figure 18: Stroller competitors positioning matrix

2.2.2 Competitor matrix

To gain a comprehensive understanding of the market, Joolz and its competitors were evaluated on several key criteria. The first criterion was whether the brand offers 3-in-1 strollers, which are versatile combination strollers with a frame that can accommodate both a cot and a seat, allowing for use over more than three years. Ease of use was another important factor, including the adjustability, folding mechanism, and weight of the strollers. Comfort for the child was also assessed, focusing on features like padding and recline options. Portability was considered, examining how compact the stroller is when stored and how small it folds. The availability of accessories was another point of comparison, checking if the company offers various add-ons for its strollers. Storage options, particularly the size of the basket, were evaluated as well. Safety is a critical aspect, with an emphasis on the effectiveness of brakes and overall stability. Finally, maneuverability was assessed by looking at features such as swivel wheels and suspension. Figure 19 illustrates the evaluation.

The matrix indicates that Joolz and four of its competitors - Bugaboo, Cybex, UPPAbaby, and Nuna - perform best on the evaluated criteria. In contrast, Kinderkraft scores the lowest on these criteria.

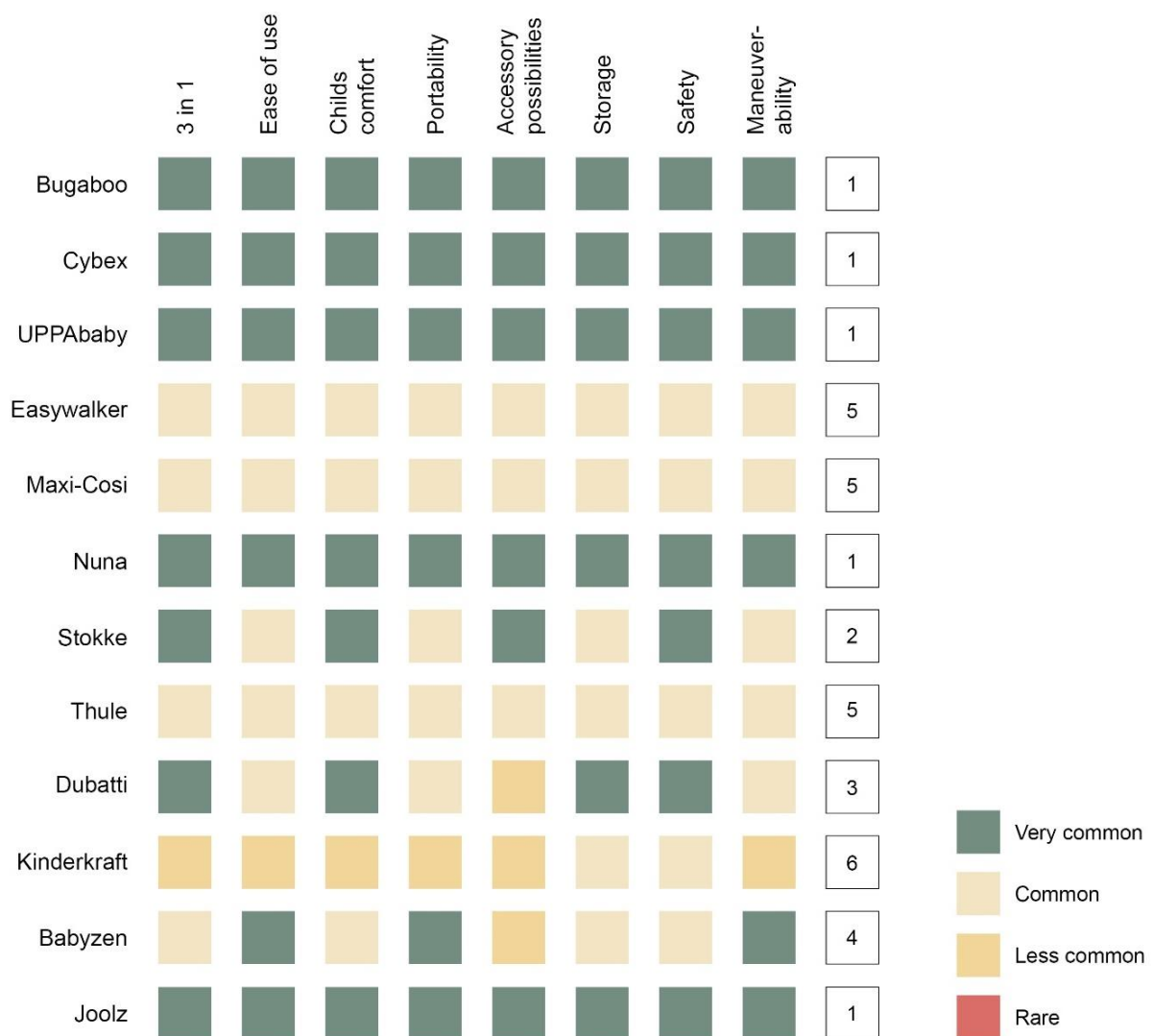


Figure 19 Stroller competitor matrix

2.2.3 Conclusion

Eleven competitors of Joolz were analyzed in this research. Using both desk and field research, the competitors were compared on design style, focus, and functionality. Cybex, Bugaboo, and Nuna emerged as the biggest competitors, particularly in the trendy and luxury segments. When considering only style, Easywalker was also included. In terms of functionality, Bugaboo, Cybex, UPPAbaby, and Nuna stood out. Overall, considering design style, focus, and functionality, Bugaboo, Cybex, and Nuna are Joolz's primary competitors.

2.3 Product analysis; snack tray

In this product analysis, the existing product for feeding a child is analyzed in detail. The purpose of this analysis is to get a picture of the current snack tray and its use. Furthermore, this analysis will as well discuss the stroller for which the product will be made. Also discussed will be an accessory (bumper bar) of which the position is currently being reused for the snack tray.

2.3.1 Snack tray

The snack tray that Joolz currently sells has been analyzed in Figure 20. The tray is available in two different dimensions, for the Day+ and the Hub+. Currently, there is no snack tray available for the Aer+. The main function of the snack tray is for children to have their own table to eat, drink and play on the go. It has two compartments and a cup holder and is dishwasher safe. According to Joolz's product marketing manager, the snack tray gets purchased primarily for practical reasons. It is a way to store a child's snacks and cup without using a bag or the basket at the bottom of the stroller.

The platform consists of fifteen parts and can be divided into three main parts. The main parts are made of different plastics and injection molding is used to realize the shape. A snap-connection is used for attachment to the stroller. The snack tray is attached at the same point as the bumper bar and can also function as a bumper bar. The bumper bar is a safety bar, which can be clicked onto the stroller in front of the child. The child can hold onto this, and it gives parents an extra sense of security. Pressing the gray round in the adjustable arm can change the angle of the snack tray. This allows the snack tray to be adjusted to remain in the horizontal position when the chair is placed in the reclining position.

According to the engineering manager, the main problem with the current snack tray is that it does not fit the Joolz design style. In addition, he reports that the tray is currently simply mounted where the bumper bar is placed. This is not a good and ergonomic place for the snack tray on all strollers. He also mentions that even though the product is dishwasher safe, it is not easy to clean because of the large holes in the product.

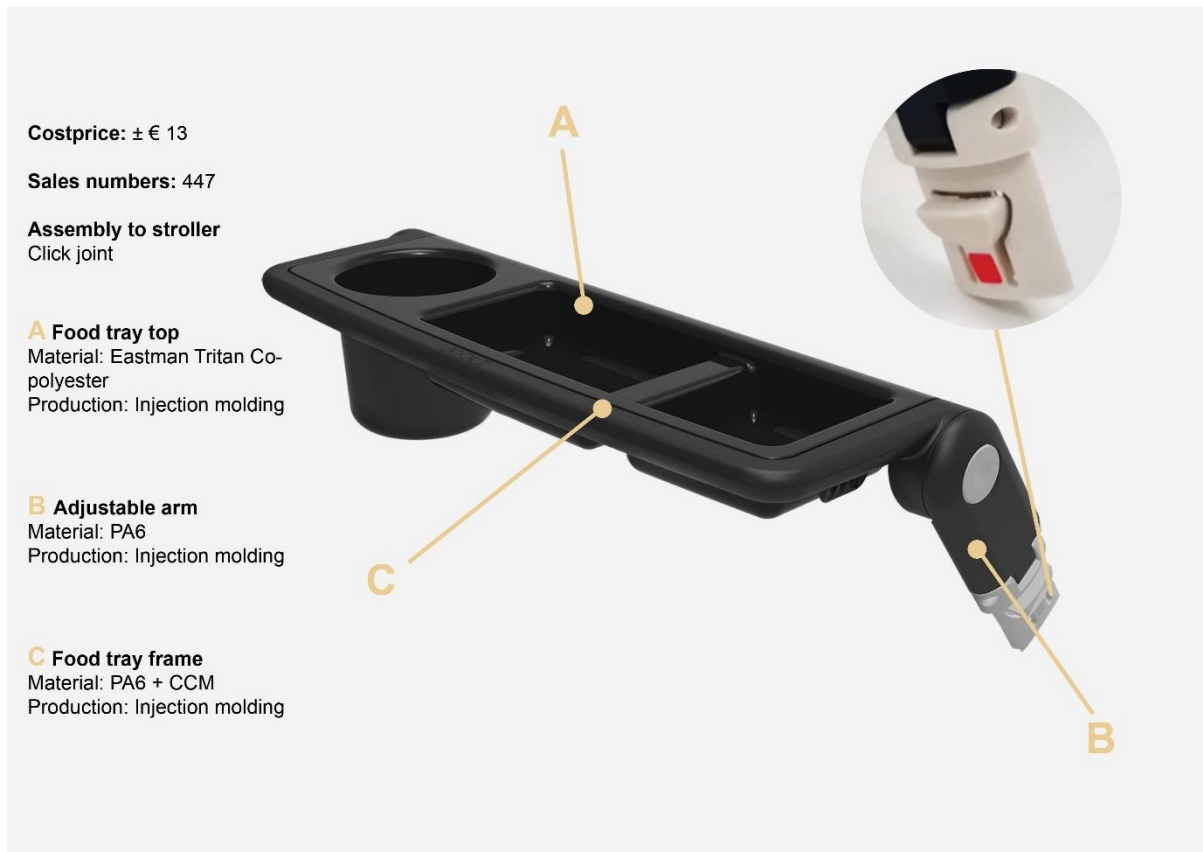


Figure 20: Joolz snack tray

The snack tray-compatible strollers currently sold by Joolz are the Day+ and Hub+ (Figure 22). Listed with the strollers are the 2023 sales numbers. Nearly 22,000 strollers have been ordered that are compatible with the snack tray. There were 447 snack trays sold for these strollers in 2023.



Figure 21: Snack tray-compatible strollers

2.3.2 Snack tray observation

As part of the product analysis, a snack tray observation was conducted. During this observation, a mother fed and gave drinks to her 20-month-old child in a stroller using the snack tray. The images below (Figure 22) show parts of the observation, which is recorded by video. This study aims to gather insights on the use and possible problems of the snack tray.

The video shows the mother placing a water bottle and food in the snack tray. She uses an extra tray to put pancakes in one of the compartments. When the child sits against the back of the stroller, the snack tray is in line with the child's mouth. However, because of the child's position, with her back against the backrest, the child cannot see the food on the snack tray.

The child begins eating by taking pancakes from the tray with her arm extended. She feels with her hand where the food is in the tray while her back remains against the backrest. The child then takes bites of the pancake and tears off pieces to put in her mouth. While eating, she still leans back in the backrest.

Another method the child uses to grab food is by leaning forward and raising her arms, resting her elbow on the snack tray. This allows the child to see the food on the snack tray and the tray is in line with her shoulders. When the child has been eating for a while, she begins to play with the food and tries to pick up other snacks with the pancakes. At one point the child crams a lot of food into her mouth and spits some of it out. After that she wipes her hands on her clothes and resumes eating by putting her elbow on the snack tray and looking at what is on it.

When the mother unbuckles the seat belt and the child is free in the stroller, the child remains against the backrest, still eating pancakes. Now that the child has more room to move, she occasionally lifts a leg or moves her body to the side. She also slides down more because she is no longer kept in place by the buckle. At one point, there are several pieces of pancakes scattered in the stroller. The mother notices that the child seems to be getting tired and distracted and removes the snacks.

The observation shows that the child responds to the offered snacks by grabbing and eating them. The child also adjusts her position to better reach the food, leaning forward. She uses her fine and gross motor skills to grasp the food. The observation also shows the effect of freedom of movement, when the mother releases the buckle, the child becomes more distracted and starts moving independently. The mother notes that the child becomes tired and distracted by the reduction of interest in eating and the change of positions. Hygiene is also addressed for example the child spits out food, she wipes her hands on her clothes and at the end of the observation there are several pieces of pancakes in the stroller.



Figure 22: Snack tray observation

2.3.3 Aer +

The yet-to-be-designed product will be made for the Aer+ stroller (Figure 24). This is a compact stroller that is easy to fold. The system is even called the one hand one second, considering the stroller can be folded with one hand within one second. In addition, the Aer+ is made to carry around due to its lightweight and carry strap. By 2023, the Aer+ is sold 126,683 times.



Figure 23: Joolz Aer+ stroller

The current snack tray is attached at the location of the bumper bar. At this location both the Day+ and Hub+ have a click system integrated. The Aer+ does not have this click system. At the spot where the bumper bar can be mounted two dashes are shown, see Figure 24.



Figure 24: Aer+ bumper bar location

2.3.4 Bumper bar

The bumper bar, currently mounted in the same location as the snack tray, has a different mounting for the Aer+. The image below (Figure 25) shows the bumper bar for the Aer+. This bumper bar features clamps on both sides, allowing it to be attached to the Aer+. An advantage of this design is that the bumper bar can be folded with the stroller. In 2023, this bumper bar was sold 65,500 times for the Aer+.



Figure 25: Bumper bar Aer+

2.3.5 Conclusion

In the product range of Joolz are two different-sized snack trays that can be attached to two different strollers of the company. The snack trays are purchased primarily for practical reasons now that the tray provides a convenient way to store snacks and a cup. Each snack tray consists of fifteen different parts. The three main components are made from different types of plastic using the technique of injection molding. A snack tray attaches to the strollers using a click system, which system is also used for the bumper bar. However, reusing the bumper bar's spot for the snack tray is not always considered the ideal placement.

The primary issue with the current snack tray is that it does not reflect Joolz's design style. Additionally, cleaning the tray is not ideal. By observing children that use the snack tray, insights into the child's eating behavior and interaction with the tray are revealed. Although the tray is positioned high, making it difficult for the child to see the food while sitting back, the child shows adaptability. The child extends their arms and leans forward to access the food, with their freedom of movement affecting their engagement and increasing distraction. This study highlights the child's motor skills, response to environmental changes, and hygiene considerations during snack consumption.

Currently, there is no snack tray available for the Aer+. This stroller lacks an integrated snap-in system for attaching a bumper bar or snack tray. Instead, the bumper bar is attached to the Aer+ with two clamps.

2.4 Aer+ stroller target group analysis

This chapter discusses the target market of the Aer+ stroller. The information about the target group is gathered through an unstructured interview with the product marketing manager. The purpose of the research is to understand the target group and to identify the characteristics, preferences and behaviors of (potential) buyers of this stroller.

2.4.1 Target group Aer+

The target group of the Aer+ has no specific age, however, the target group can be described as parents of children up to four or future parents. The stroller is designed to be used from birth to four years, at birth it can be chosen to have a cot on it. In addition, the product is aimed at all parents or parents-to-be, and thus not a specific gender. Both mothers and fathers involved in the care of young children part of the target group. Overall, these are families with one or more children.

In addition, this stroller is bought by parents who are often on the move, they go back and forth and in and out, and people who do not need to carry too many along with them. In addition, they also use multiple modes of transportation. The convenience of taking this stroller on a plane is also a reason for purchase, although the major use is daily commute. This stroller is also often purchased as a second stroller, in addition to a large comfort stroller. One frustration that the target group has is having to buy the same accessories twice, since some are only compatible with one stroller. In addition, parents spend little money on accessories for the stroller.

The target group consists of parents with all levels of income and can be described as people who feel that a stroller in the luxury segment is worth spending their money on. Parents want the strollers they see on the street or the ones recommended by friends or acquaintances. The stroller is seen by parents as a status symbol, something parents care about. In addition, the stroller is also rented or leased and 20% of the target group buys the Aer+ second-hand.

When looking at the values the target group attaches to a product, it comes down to functionality and style. In addition, they are looking for a stroller that is easy to use, practical and quick to fold, and lastly compact and lightweight. These parents have a mobile lifestyle and use the stroller daily, recreationally and for traveling. The figure below (Figure 26) shows some of the findings from the target group analysis.

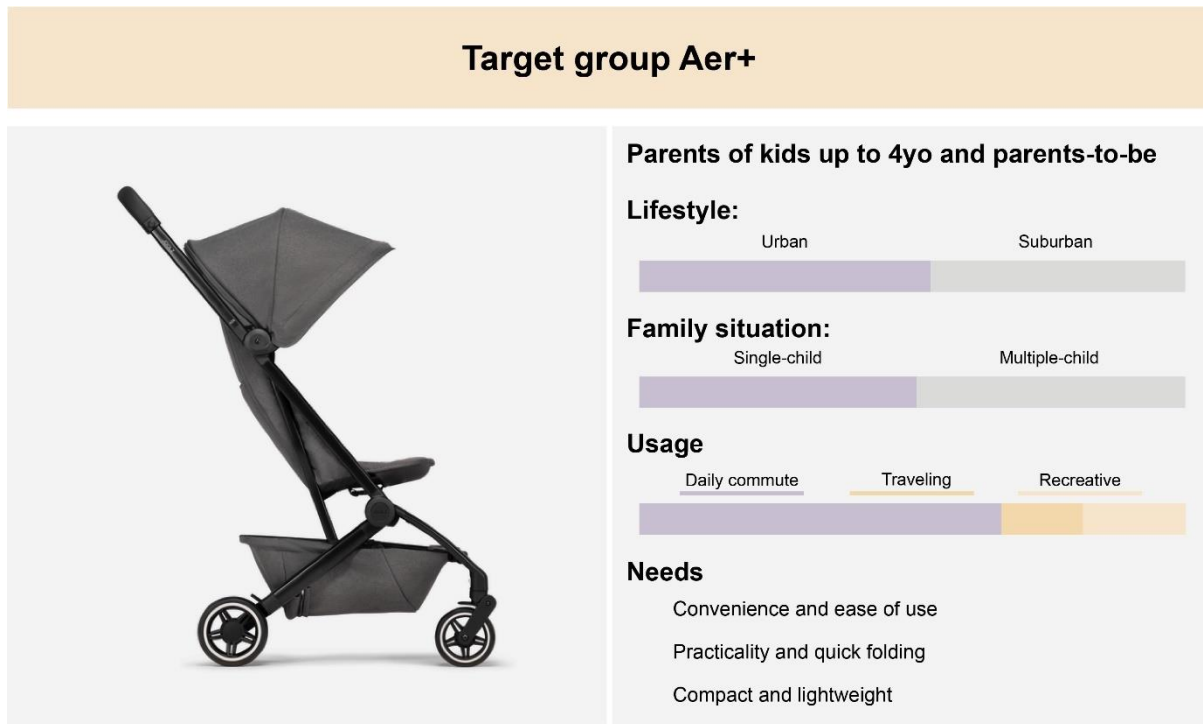


Figure 26: Aer+ Target group

2.4.2 Conclusion

The Aer+ targets a diverse group of parents, to be described as parents with children up to four years old or parents-to-be. The product appeals to people of any gender involved in caring for young children, especially those with mobile lifestyles who often use multiple modes of transportation. Although parents of all income levels are part of the target group, those with disposable income spend money on this stroller in part because it serves as a status symbol. The stroller is often purchased as a second and is also rented or bought second-hand by a portion of the market. However, frustrations arise from having to buy duplicate accessories due to compatibility issues. Functionality and style are of utmost importance to this target group, which values ease of use, compactness and lightweight design.

2.4.3 Target group collage

The aforementioned target group is mapped through a target group collage (Figure 27).

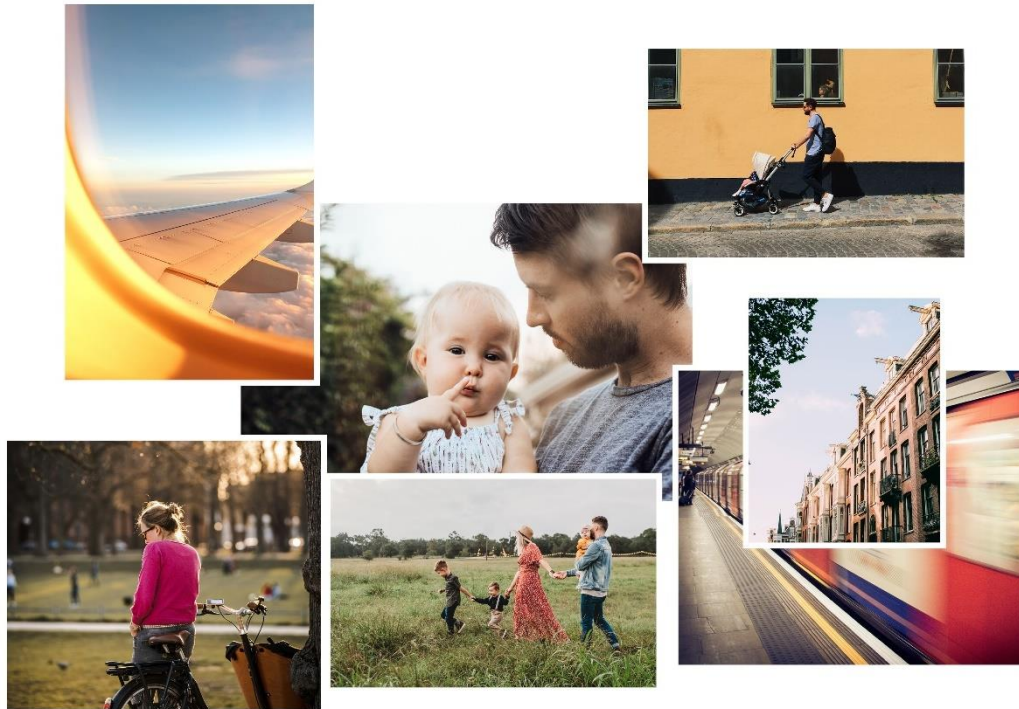


Figure 27: Target group collage

2.5 Market research; competitor snack trays and baby tableware

The market research focuses on three different components, being snack trays for strollers, baby tableware and baby tableware for on the go. It aims to get a clear picture of comparable products on the market.

2.5.1 Snack tray competitor matrix

To see what products competitors have designed to allow children to eat in a stroller, several competitor products were reviewed. The snack trays of competitors are separately discussed in Appendix B Competitor snack trays. Hereby addressing the price and advantages and disadvantages of individual snack trays. The information is determined from product specifications and customer reviews.

The products were evaluated on several criteria in a competitor matrix (Figure 28). One of the key criteria is functionality. Another important criterion is the trendiness of the design. In paragraph 3.2.1 it is concluded that Jools focuses on making the trendiest designs. Furthermore, the ergonomics are considered, including height and reachability but also adjustability. Another important aspect is safety, which includes smooth edges, secure attachments and a safety lock to prevent children from accidentally removing the snack tray. Convenience during cleaning is also considered, removable parts, dishwasher safe and the surface are taken into account. In addition, the size of the product is considered, looking at the amount of space for snacks, different compartments and the presence of a cupholder. Assembly convenience and removability are also evaluated by the rapidity and ease with which the tray can be placed on and removed from the stroller. Not forgetting foldability, this considers whether the stroller can be folded with the tray on it. User-friendliness is assessed by several aspects: convenience, ease of use, extra features (e.g. adjustable cupholder, convertible design, play surface,

tray, bumper bar), adjustable tilt, and non-slip material. Finally, the modularity of the tray is reviewed by looking at whether the tray can be placed on multiple strollers (of the same brand).

The matrix shows that the Bugaboo tray scores best on these criteria. Along with UPPAbaby and Nuna, Joolz scores the lowest on the criteria.



Figure 28: Snack tray competitor matrix

2.5.2 Baby tableware

In addition to direct competitor products (snack trays), other products with which young children eat are also considered. The image below (Figure 29) shows a mood board containing different tableware. Think of plates, spoons, forks, mugs and cups. It is noticeable that the tableware often contains prints and shapes of animals and other playful forms. Also often seen is the use of shapes to divide the plate into different compartments.

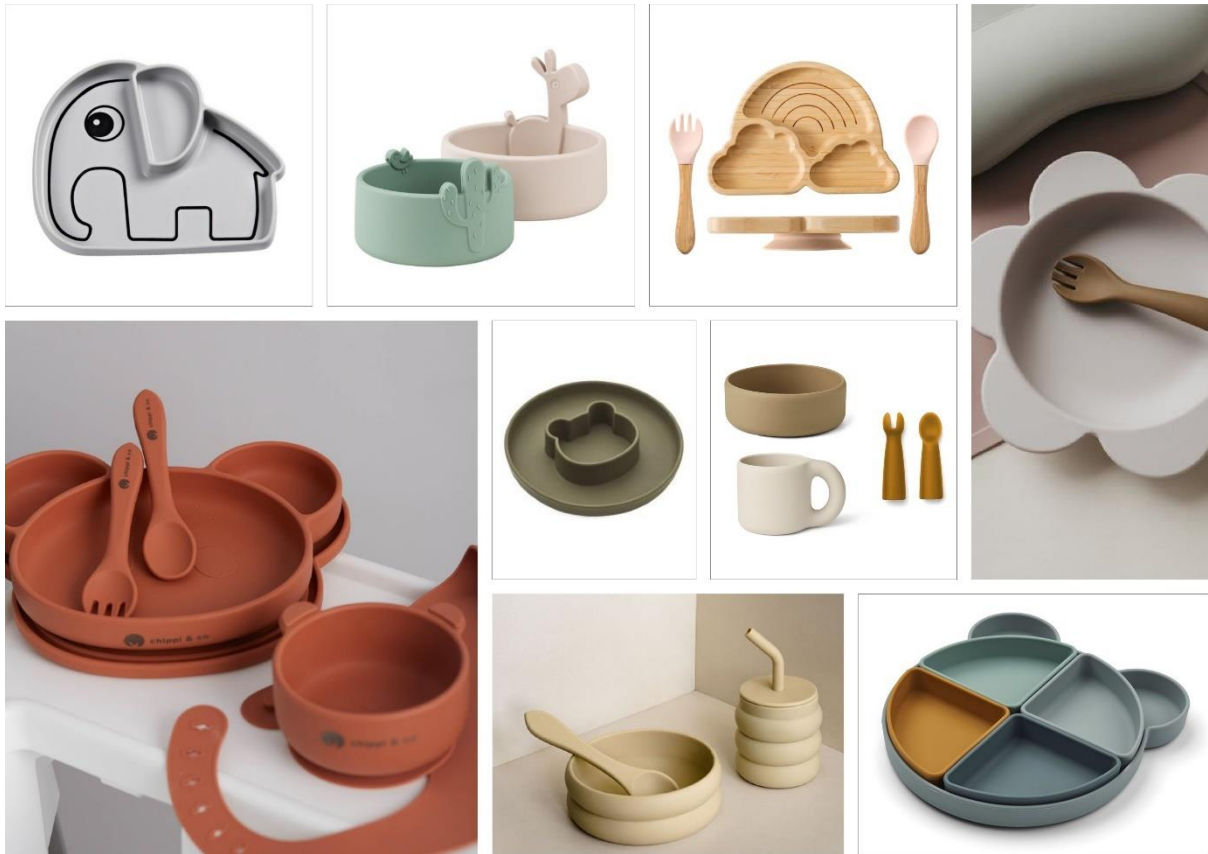


Figure 29: Baby tableware

2.5.3 Baby tableware to go

In addition to standard tableware, there is also special children's tableware for on the go (Figure 30). These include anti-drip cups and re-closable containers and plates. Playful prints and shapes also appear in these products, although this is considerably less common than with standard tableware. Also notable is that plates and trays are again often divided into a number of compartments. Finally, transparent lids also appear more frequently.

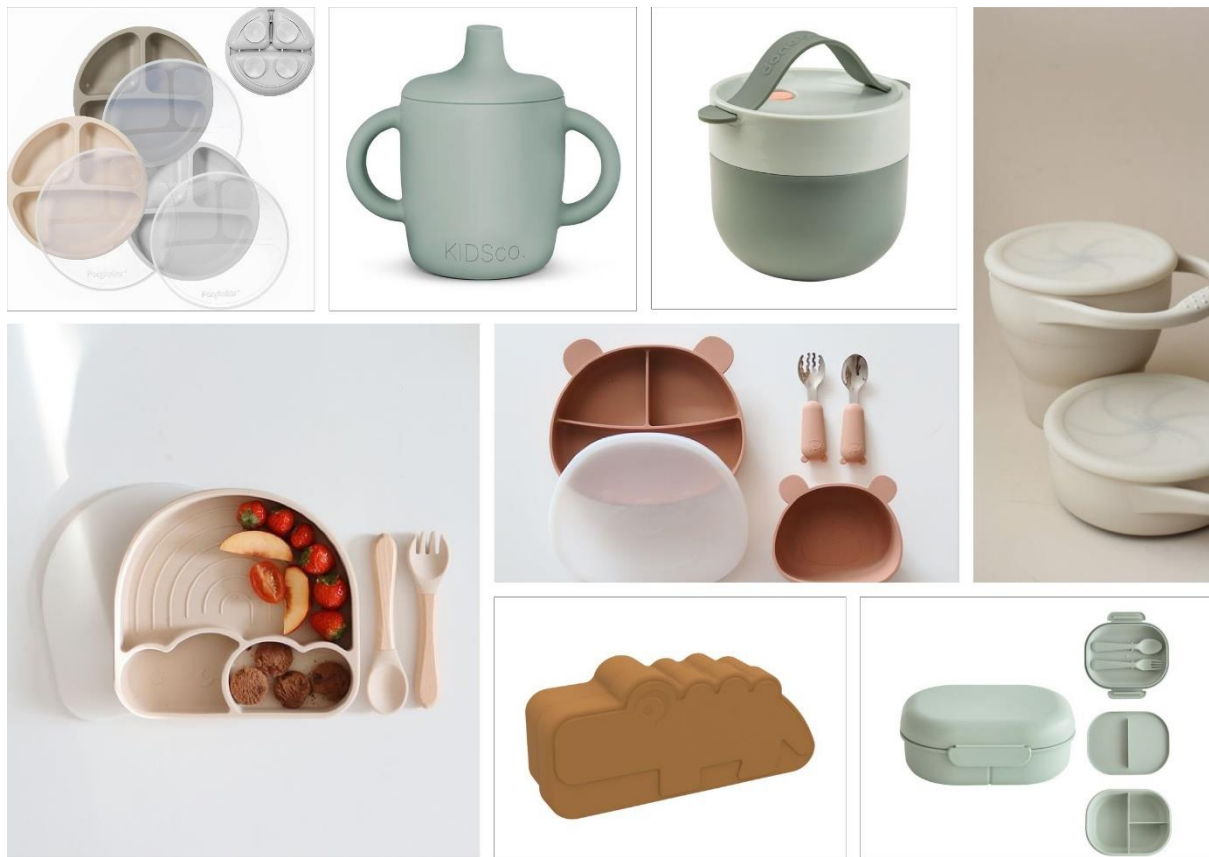


Figure 30: Baby tableware to go

2.5.4 Conclusion

The market research focused on three components: competitor snack trays for strollers, baby tableware and on-the-go baby tableware. The primary objective of the research was to gain insight into comparable products on the market. The analysis into snack trays for strollers provides a comprehensive overview of the strengths and weaknesses of competing products from several brands, including Cybex, Bugaboo and Easywalker. The competition matrix assesses these snack trays on criteria such as design, ergonomics and safety. Using these criteria, Bugaboo scores the highest, while Joolz scores the lowest along with UPPAbaby and Nuna. Besides snack trays for strollers, regular baby tableware and baby tableware on the go are also considered. Baby tableware is characterized by playful designs, mostly using prints and shapes of animals and compartments. Baby tableware on the go includes anti-drip cups, resealable trays and plates, with a similar emphasis on playful designs and compartmentalization.

2.6 Purchasing behavior of expectant parents

The purpose of this study is to provide insight into the purchasing behavior of expectant parents, focusing on their preferences and priorities when selecting baby supplies. This research will make use of The Mamamonitor study that used 1,763 Dutch respondents to examine the purchasing behavior of expectant parents (Aantjes, 2023).

2.6.1 Purchasing behavior

In today's digital age, expectant parenthood is influenced by a plethora of online resources and baby essentials checklists, as found at leading brands including Prénatal, Pampers and Zwitsal (*Baby Uitzetlijst*, n.d.; Pampers, 2024; *Checklist Babyuitzet*, n.d.). These outfits lists offer detailed insights into the items needed for a baby's arrival, ranging from maternity kits, baby food, toiletries, baby clothes, maternity wear and nursery supplies.

The Mamamonitor study, conducted among 1,763 respondents, sheds light on the purchasing behavior of expectant parents (Aantjes, 2023). The study reveals that safety tops the priority list for parents when looking for baby essentials. Whether it is a car seat, nursery or stroller, consumers value the reassurance of safety. However, the nuances vary by product category. Ease of use, appearance and price follow as the most important considerations, while the influence of trends and brands have less impact on expectant parents' choices.

What is striking is the trust that expectant parents place in the advice of baby stores and consider informational websites as the most important sources of information during their search for obtaining reliable information. This finding highlights the importance of expertise and transparency in consumer information from baby stores and online platforms.

In addition to direct baby products, there are some notable trends in categories that are particularly attractive to expectant parents. A family car is high on the list, followed by the ability to do online shopping and the electric bicycle and cargo bike. Chore supplies also prove relevant, where parents anticipate changes in their living environment.

Financial considerations appear to play a significant role in the decision-making process. The budget for baby equipment varies, with families with a gross income below modal spending about 8%, while families with a modal income or higher spend an average of €5,300 on baby essentials. Despite these variations in spending, the study shows that parents particularly invest in the nursery and a stroller, with more than half of parents willing to invest more than €500.

Detailed spending perceptions from the MamaMonitor study show interesting patterns (Appendix C Purchasing behavior of expectant parents). Nearly 90% of parents are inclined to buy a stroller, with Joolz coming first in terms of name recognition. Car seats, nurseries, breast pumps and baby monitors are also considered crucial purchases and all take up a significant portion of the budget.

While the focus on baby essentials is great, with budgets exceeding €5,000, pregnant mothers appear modest with their own spending. About 40% spend a maximum of €500 on personal items, while the rest of the budget is dedicated to creating a safe environment for their future baby.

In terms of food choices for babies, brand preferences, prices and offers appear to be the most important considerations for parents, with a notable focus on organic and environmentally friendly aspects. Parents especially seek familiar brand names for their little one's food.

2.6.2 Conclusion

Today the landscape of expectant parenthood is heavily influenced by online resources and checklists. This research paints a view of the quest parents undertake when putting together their baby essentials. Safety, convenience and appearance are top priorities when selecting baby essentials. Notable trends among expectant parents go beyond baby products and include choices such as family cars, online shopping options and cargo bikes. In addition, financial considerations play a central role in decision-making, with spending patterns differing based on income level. Despite these differences, the biggest investments are made in baby gear and strollers. While significant budgets are spent on baby essentials, pregnant mothers are modest in their personal spending. Finally, when it comes to baby food, brand preferences, prices and offers prevail, with a clear focus on organic and environmentally friendly aspects.

2.7 Children's ergonomics research

As part of the ergonomics research, Brecht Daams is interviewed. Brecht Daams is an expert on ergonomics and children's products. The goal of the research is to gather insights about children's ergonomics, with a specific focus on meals in a stroller. Brecht Daams' expertise can provide useful information that can be applied in the yet-to-be-designed product. The interview questions can be found in Appendix D Interview questions Brecht Daams. The answers given by Brecht Daams have been transcribed but cannot be found in this report due to privacy reasons.

2.7.1 Interview

The first thing Brecht mentions is that she noticed that in America children are constantly eating snacks in strollers, which can lead to obesity. She stresses the importance of considering a stroller as a means of transportation, and not as a place for children to eat, which carries the risk of overeating. If children have to eat in a stroller, they better eat healthy.

During the conversation, it emerged that children's eating habits are highly dependent on their age and development. The importance of sitting upright for safe swallowing and chewing was emphasized, which not only reduces choking hazards but also promotes good muscle coordination. Brecht points out that introducing solid foods before 10 months is recommended. She also notes that children initially eat with their hands and that the introduction of hard foods such as nuts is not recommended until five years of age because of the choking hazard.

In addition, Brecht emphasizes that children need to get used to flavors initially, which they are already doing with pureed foods such as fruit snacks. As for the optimal seating position while eating, Brecht recommends an upright position. Brecht indicated that many children's chairs today lean backwards. She suggests to educate parents about proper seating positions.

A child's size and proportions were discussed in relation to the choice of seat and table height for optimal ergonomics. Brecht suggests using the elbow height in the seated position as a guide for the height of eating facilities. Using an anthropometric database, the average elbow height in sitting position of Dutch children aged 2-4 is determined (*DINED*, n.d.; Steenbekkers, 1993). The smallest 5% of children aged 2 and the largest 5% of children aged 4, the P5 and the P95 are also examined. No data for elbow height in sitting position are available for Dutch children aged 1 year. The figure below (Figure 31) shows the findings. Brecht explains that the average distance is global and the product can be a little bit higher or lower.

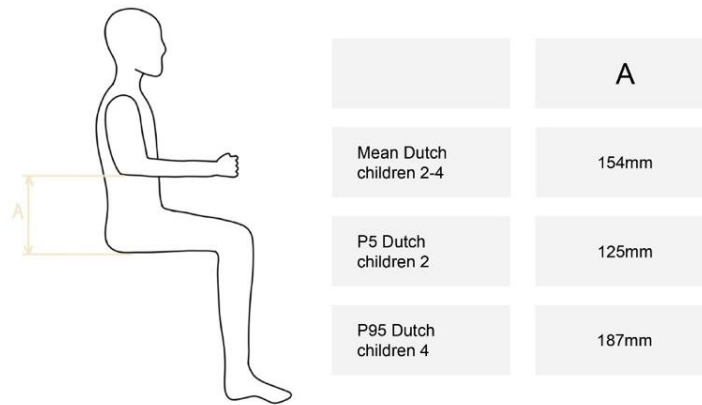


Figure 31: Elbow height in seated position children aged 2-4

Brecht also discusses the role of ergonomics in promoting fine motor skills in which picking up food with the fingers is considered good practice. For the development of motor skills, opportunity to move as much as possible is paramount. She stresses the importance of allowing children to move freely but acknowledges that eating with fingers in a stroller may be more practical than using a spoon or fork. There are challenges when implementing utensils such as spoons or forks in a stroller because they can easily fall/be thrown out of the stroller. Preventing this by securing the utensils with a cord, for example, can create choking hazards, which is even less convenient.

Finally, Brecht adds that it is helpful if children can hold on to, for example, a bumper bar, which serves not only to prevent falls but also as a tool for children to pull themselves forward and be actively engaged in their environment. Brecht suggests that an eating product in the stroller should also serve these functions, with attention to comfort and safety.

2.7.2 Conclusion

An interview with Brecht Daams, an expert on ergonomics and children's products gives an insight into design considerations that take children's ergonomics into account. Brecht Daams first warns of the risk of overeating if the stroller is used as a snack spot. She emphasizes that if children must eat in a stroller, they better eat healthy food. She further describes the need for an upright sitting position for safe swallowing and chewing, which reduces the risk of choking and promotes muscle coordination. Product height is also discussed; Daams recommends elbow height in the sitting position as a guideline for ergonomic product height while eating. When it comes to fine motor skills encouraging food grabbing with the fingers is already considered good practice. Finally, she suggests that additional features should also be considered, such as a bumper bar that children can hold onto. This not only keeps children from falling, but also allows children to actively explore the environment.

2.8 Nutritious meal for 1-4 year-olds

This research is about the factors that influence child nutrition and about the importance of healthy eating for children. It identifies what healthy eating habits are and discusses strategies to promote healthy eating. Besides that, the study addresses the influence that the visual presentation of food has on children.

2.8.1 Child nutrition

Infants start life with minimal innate taste preferences (Davis, 1939). They have a strong ability to learn to appreciate new foods. During these first years, children do not make their food choices independently. They depend on their caregivers to provide them with appropriate nutrition. This highlights the importance of the environment in shaping children's eating behaviors (Kral and Faith, 2007). Introducing complementary foods appears to be a key moment for discovering new foods (Lipsitt et al., 1985). The child's senses are exposed to various forms of stimulation during this period. Cashdan (1994) recommends introducing new foods to children younger than two years of age. These children are more receptive to new foods than older children. Eating behaviors developed during this early period continue to be influential into adolescence and adulthood (Skinner et al., 2002). This means that it can have a positive impact on the control of non-communicable diseases when healthy behaviors are involved (Vereecken et al., 2004; Coulthard et al., 2010). Parents play a crucial role as mediators of exposure to a diverse range of foods (Johnson, 2016). The way caregivers offer food to children, combined with their own consumption behaviors, appear to be as influential as biological factors in shaping children's food preferences and acceptance.

To promote healthy eating habits, the Disk of Five emphasizes the importance of varied diets, including vegetables, fruits, whole grains, fish, legumes and eggs (Voedingscentrum, n.d.-a). These foods contain essential nutrients such as proteins, carbohydrates, fats, vitamins and minerals, which are necessary for healthy growth and development. The Disk of Five describes healthy products and indicates the amount that should be eaten by age. Figure 32 shows an example of what a child from 1 to 4 should eat using the Disk of Five.

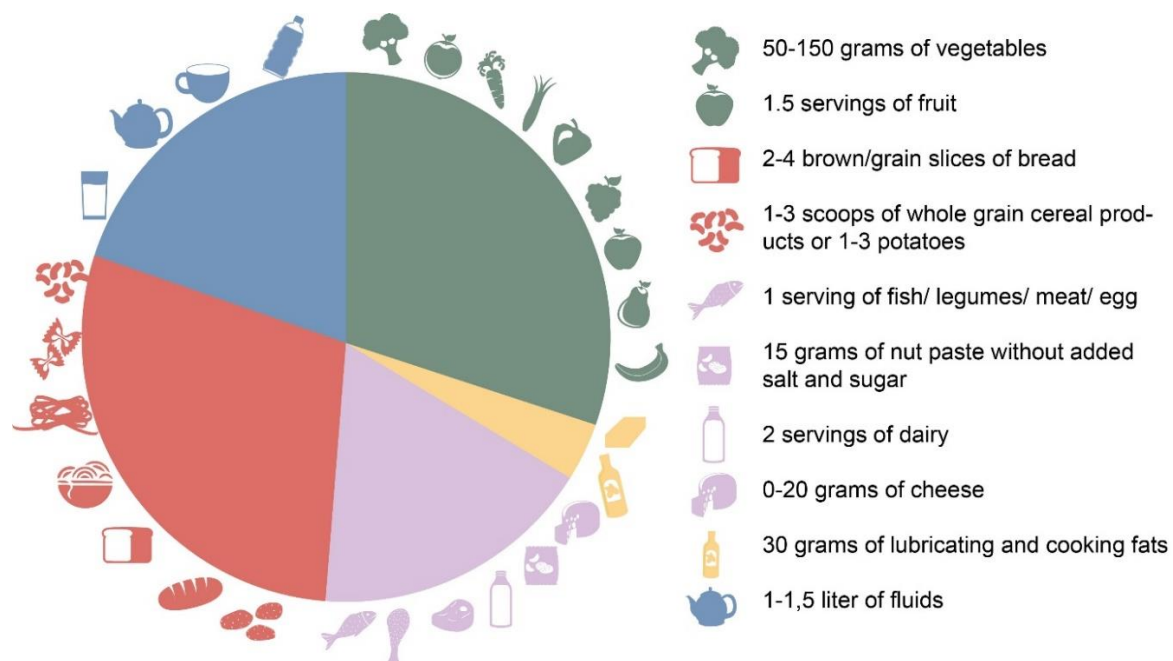


Figure 32: The Disk of Five for children aged 1-4

The Dutch Nutrition Center emphasizes that children between the ages of 1 and 4 need certain nutrients in higher amounts (Voedingscentrum, n.d.-b). These include vitamin D, iron and omega-3 fatty acids.

- **Vitamin D.** Children up to age 4 need an additional 10 micrograms of vitamin D daily for strong bones and teeth. Deficiency can lead to rickets, a condition that affects bone development.

- **Iron.** A balanced intake of iron is essential for growth. If meat consumption is limited, parents should ensure that the child gets enough iron from plant sources, especially in combination with vitamin C-rich foods.
- **Omega-3 fatty acids.** Spreading sandwiches with margarine daily and regularly consuming fatty fish, such as salmon, provides children with essential omega-3 fatty acids that are important for their development.

To ensure the health of young children, the Nutrition Center advises against giving certain foods to children up to 4 years of age (Voedingscentrum, n.d.-c). These foods are:

- **Raw products.** Raw fish, raw meat, and products containing raw milk or egg: These may contain harmful bacteria to which children are more susceptible. This category includes cheese made from raw milk.
- **Salt-rich products.** Limiting salt intake is essential because the kidneys of children up to 4 years old do not process salt well. Alternatives to regular cheese such as mozzarella or dairy spread are recommended.

2.8.2 Promoting healthy eating habits

The preschool period is a critical time when children strive for autonomy and experience neophobia. This results in limited vegetable intake (Brownell et al., 2007; Dovey et al., 2008). This problem is often avoided or ineffectively addressed by parents, which is concerning given the link between early feeding behaviors and later health risks (Johnson et al., 2015; Dwyer et al., 2008). Two major stages in vegetable acceptance and consumption are distinguished: (1) the willingness to try vegetables and (2) the actual vegetable consumption (Johnson, 2016). Factors that improve children's willingness to try vegetables include experiential learning, environmental effects, parental knowledge and attitudes, and parental feeding styles. Additional research highlights the effectiveness of repeated exposure to new or less preferred vegetables in a positive environment (de Wild, 2015). Showing choice options for already familiar vegetables as children get older also appears to be an effective strategy.

The visual presentation of food during eating has been identified as an essential factor in influencing children's vegetable consumption. Sharps et al. (2020) examined the influence of pictorial nudges on dinnerware. The research concluded that such visual cues had a significant impact on children's fruit and vegetable intake. The use of fruit and vegetable pictures on dinnerware was found to influence children's fruit and vegetable consumption. This indicates the potential of visual stimuli to promote healthier eating habits in children. In addition, the size of dinnerware plays a role in energy intake. The use of small dinnerware may lead to more satiety after meals and initial reduction in energy intake, potentially influencing children's eating habits (Abeywickrema & Peng, 2023). This same principle is suggested with the use of a small portion in a pictorial nudge, resulting in lower fruit and vegetable intake compared to a pictorial nudge with a large portion (Sharps et al., 2020). Visual presentation of food also contributes significantly to perceived attractiveness (Spence et al., 2022). For example, Kranz et al. (2015) suggest that the shape of fruit and vegetable snacks can influence children's perceptions of these foods. Shaped snacks were perceived as more fun than regular shaped versions of the same foods. This positive perception may encourage children to try and eat these foods (Kranz et al., 2015; Kranz, 2015; Karagiannaki et al., 2021). Another visual presentation possibly influencing vegetable consumption in children is the color of tableware. Children under ten appear to consume more from colored plates compared to white plates (Brunk and Møller, 2019). Despite these results, another study examined the effects of plate color on snack intake among three to five, indicating that plate color did not affect children's food intake (Carstairs et al., 2020). Moreover, Angka et al. (2020) describe that the color of the plate does not affect vegetable consumption of children between eight and eleven years

old. Finally, research points to the benefits of offering food separately, particularly among younger age groups (Nielson et al., 2018). Presenting food in separate portions, visually attractively arranged, appears to have an impact on increased fruit and vegetable intake, as it allows children to mix different elements according to their preferences.

2.8.3 Conclusion

The first years of the life of a child play an important role when it comes to shaping their eating behaviors and food preferences. A child mainly relies on its parents to provide the right nutrition. Parents are responsible for exposing the child to different sorts of food. The introduction of complementary foods is seen as an important moment to expose children to new tastes and textures. Besides that, research shows that children under the age of two are particularly receptive to tasting new foods. The eating behaviors that they learn in this period can have a lasting impact into their adolescence and adulthood. When it comes to healthy eating habits, recommendations as the Disk of Five emphasize the importance of a varied diet and essential nutrients for optimal development and growth.

Research shows that in preschool children strive for autonomy and neophobia. This can lead to a lower intake of vegetables. To improve the willingness of a child to try vegetables, experiential learning, environmental effects, parental knowledge and attitudes, and parental feeding styles can have a positive impact. In addition, visual presentation and serving size and color can influence children's vegetable consumption. Last, effectiveness of repeated exposure to new or less favorite vegetables, offering choices and presenting food separately are strategies that positively influence children's eating habits.

2.9 Cognitive development of children

Within cognitive development research, the development of sensory experiences of children between the ages of one and four years is examined. This research aims to understand cognitive development in early childhood.

2.9.1 Cognitive development

Cognitive development describes the changes in mental processes and skills of an individual (Sodian, 2009). These are gradual changes in the ability to think, reason, understand and process information throughout life (Sessa, 2016; Sodian, 2009)). It includes the acquisition and refinement of intellectual skills, problem-solving skills and extracting meaning from experiences (Richland et al., 2016; Sodian, 2009). But also, various aspects such as perception, language acquisition, memory and decision-making.

The theory of cognitive development formulated by Jean Piaget says that children go through different stages of cognitive growth (Pakpahan & Saragih, 2022). The theory emphasizes shifts in thinking skills during childhood and adolescence. Piaget identifies four stages of cognitive development. From birth to two years old, children are in the sensorimotor stage, a phase in which they explore the world through their senses and motor activities (Thompson, 2019). Also within this stage is developing object permanence and beginning to understand cause and effect (Thompson, 2019; Pakpahan & Saragih, 2022; Malik & Mawaha, 2023). From about two years old to age seven, children learn symbolic representation and language development, this stage is called the preoperational stage (Pakpahan & Saragih, 2022; Malik & Mawaha, 2023). However, at this stage they struggle with self-centeredness and understanding principles such as conservation (Pakpahan & Saragih, 2022). The third stage, called concrete operational stage, occurs from about seven to eleven years old. Children acquire the ability to

think logically and understand concepts such as conservation (Thompson, 2019; Pakpahan & Saragih, 2022; Malik & Mawaha, 2023). However, their rational thinking is tied to concrete objects (Pakpahan & Saragih, 2022). From adolescence into adulthood, the formal operational stage, individuals develop abstract reasoning skills, can reason hypothetically and have the ability to solve problems.

The early years of childhood are considered a critical period for brain development, emphasizing the importance of sensory experiences during this phase (Tierney, 2009). Shortly after birth, babies prefer high-contrast colors, especially black and white, since they can perceive these colors more easily (Kylie Rymanowicz, Michigan State University Extension, 2014). As they develop, they begin to distinguish primary colors and gradually acquire more complex hues (Skelton et al., 2022). Within six months, babies move from very limited detection of color to more sophisticated color perception. Research suggests that babies respond to simple geometric shapes and patterns (Verdine et al., 2015). As they progress, they become able to recognize and categorize more complex shapes. By age three, children seem to be able to know some basic shape names. Children gradually acquire the integration of sensory and perceptual systems, increasing their ability to understand the environment (Tierney, 2009). Focused on the research question, the rest of the study will delve deeper into the cognitive development of children between the ages of one and four.

One-year-old children, according to Piaget, are in the sensorimotor stage. They exhibit heightened sensory awareness, recognizing and responding to sight, sound and tactile stimuli (McLeod, 2024). In addition, they begin to develop object permanence, they begin to understand that objects persist even when they are out of sight, this lays the foundation for memory and cognition (Cherry, 2023). Children of one show early signs of social cognition, such as imitating actions of adults. They can also begin to understand words and respond. Lastly, increased motor skills promote cognitive development, through active exploration of the environment (Peng & Feng, 2022).

Piaget describes that from birth to two years old, children are in the sensorimotor stage and move to the preoperational stage from about two years old. By age two, children are becoming more independent, developing symbolic play such as using a block as a telephone or pretending to do laundry (Cherry, 2023). They additionally begin solving simple problems, including stacking rings on a peg from large to small. Two-year-old children can respond to simple directions from caregivers and sort objects by category. At age three, children show awareness of the present and past; they develop a better memory. Children of three understand that moving objects are not alive (Berk, 2007). In addition, they can sort and match objects by size, shape and color (Cherry, 2023). Four-year-old children show improvement in using words and imitating adult actions. They can also name and identify colors and begin to understand basic principles of counting and recognize numbers up to five.

2.9.2 Conclusion

When it comes to brain development of children, the early childhood is an important phase in which sensory experiences play a large role. The continuous improvement of mental processes and skills, such as thinking, reasoning, understanding and information processing, is called cognitive development. Jean Piaget makes a difference between four stages of cognitive growth: sensorimotor, preoperational, concrete operational and formal operational. Each stage distinguishes itself with specific cognitive skills. Children of one year old learn sensory awareness and object permanence, where children of two become more independent and develop symbolic play. Children of two also begin to solve problems and can respond to simple directions. By the age of three, children show improved memory, are better understanding non-living objects and show sorting skills. Last, four-year-old children show progress in language, imitation, color recognition and counting skills.

2.10 Fine motor skills development in early childhood

This research underlines the importance of fine motor skills development in early childhood, specifically focused on children between the ages of one and four. The research aims to find how to promote fine motor skills. The research starts with an alignment of the types of motor skills, then the research goes on to discuss fine motor skills, their development and promotion.

2.10.1 Distinguishing gross motor skills from fine motor skills

In early childhood, which is the period between birth and eight years, the most intensive trajectory for physical skill development begins (NASPE, 2007). Children are already able to reach for toys and push themselves up long before they can perform finer motor tasks such as grasping small objects or writing with a pencil (Huffman & Fortenberry, 2011). In this example, an important distinction comes up when it comes to motor skills. It concerns the difference between gross motor skills and fine motor skills (Figure 33).

The literature explains this distinction slightly differently each time. Nevertheless, a common thread can be found. Gross motor skills can be seen as more fundamental and include overall stability, locomotor movements and object control (Rudd et al., 2015). These are movements that particularly require the use of larger muscle groups (Kokštejn et al., 2017). With this, it can be concluded that gross motor skills are about simpler movements that do not necessarily require coordination between different body parts and organs.

Fine motor skills require more coordination between body parts and organs. One of the most frequently cited examples in the literature, concerns the coordination between hands and eyes - also called hand-eye coordination. However, it goes further than that. Besides hand-eye coordination, fine motor skills are also about coordination of the nervous system, fibril and everything with (small) muscles, like fingers and feet, and a random combination of the aforementioned (Carlson et al., 2013; Syafril et al., 2018). Unlike gross motor skills, fine motor skills mainly require the use of smaller muscle groups (Payne & Isaacs, 2017). Examples include drawing, cutting, picking things up and feeding themselves (Johnston & Halocha, 2010).

Gross motor skills	Fine motor skills
Simpler movements	More complex, fine movements
Usually performed by larger muscle groups	Usually performed by smaller muscle groups
Require little coordination between body parts and organs	Require more coordination between body parts and organs
E.g. balance and object control	E.g. drawing and feeding yourself

Figure 33: Gross motor skills versus Fine motor skills

While the distinction between gross motor skills and fine motor skills is relevant and certainly provides some guidance, it should be noted that both forms of motor skills should often be used simultaneously. According to Isaacs, very few movements in their entirety are mastered by only one of the forms of

motor skills (Payne & Isaacs, 2017). Isaacs uses the example of handwriting, which is a combination of both gross and fine motor skills.

As shown above in Johnston and Halocha's research, self-feeding is seen as mainly a demonstration of finer motor skills (Johnston & Halocha, 2010). Other sources in the literature take a similar view. Having taken this into account, and with an eye to the central research question, the rest of this study will therefore focus on fine motor skills as the arms, wrists and hands are of more relevance when eating than, say, the feet.

2.10.2 Reasons to promote fine motor skills

Fine motor skills are learned and developed through a process of motor development throughout childhood (Huffman & Fortenberry, 2011). But the stimulation of fine motor skills in preschoolers experiences challenges, as these skills require muscle control, patience, judgment and brain coordination (Carvell, 2006). A study by Lui and Hamilton on children from a low-socioeconomic environment shows that schools do not focus enough on teaching fine motor skills, resulting in developmental milestones not being met and the child falling behind in terms of development in everyday life, as well as academically (Hamilton & Liu, 2018). Similar results appear from studies that do not specifically focus on the low-socioeconomic environment (Slater, 2022). This, while research focused on preschool children unequivocally shows that the first years of life (between zero and six years) are essential for children's development, as these years of life largely determine what a child is capable of in their future (Derman et al., 2020; Memišević & Hadzic, 2013). To support the development of fine motor skills, encouraging children in their motor development, through developmentally appropriate tasks that are age- and skill-appropriate, is essential (Bruni, 2006). This implies the need for play time and practice to promote the development of the specific small muscles crucial to fine motor skills. A study done by Jasmin et al. (2018) confirms that it is possible in the first place to strengthen fine motor skills for preschool children.

2.10.3 Strategies for promoting fine motor skills

According to Carvell (2006) the development of fine motor skills goes through four phases: (1) whole arm, (2) whole hand, (3) pinching and (4) pincer coordination. The initial phase begins with strengthening and refining the muscles of the whole arm, with activities such as rolling paint on a large surface. As arm muscles are developed, children practice control of their whole hand, such as pouring water from one container to another. Strengthened hand muscles lead to the ability to coordinate finer movements of fingers. These advances lead to the development of pinch movements, where for example the thumb and index finger work together, such as when picking up a piece of food. Eventually, with advanced fine motor muscles and coordination, children are ready to grasp writing utensils properly and begin writing. At this stage, small, highly coordinated finger movements are possible.

The development of fine motor skills varies by age, with children acquiring specific skills at specific years of life. For example, children ages one to two wave hello, clap their hands, use a spoon and cup, and begin to hold crayons (*Fine Motor Skills: Birth to 2 Years*, n.d.). At this stage, they explore Stage I (whole arm) and tentatively begin Stage II (whole hand). At two to three years, they develop these skills further (Stage II) and start pinching (Stage III). They can hold crayons with their fingers and start threading beads on a shoelace (*Fine Motor Skill Development: 2 to 5 Year Olds*, n.d.). At three to four years, children develop these skills further. For example, children at this age can make a macaroni chain, build towers with brick toys and begin scissor skills (Syafril et al., 2018). It is not until the age of five that they develop more advanced finger skills and are able to draw and write cursive. When children are around the age of six, they can perform more delicate tasks, such as tying shoelaces. Note that this research focuses only on the age group of one to four years.

The promotion of fine motor skills requires a systematic approach. The daily routine, the frequency of activities that promote fine motor skills, and the type of materials offered have been found to be crucial to children's muscle development (NAEYC, 2007). Specific activities to promote fine motor skills vary based on developmental stage. For example, for whole arm muscle development, children may be involved in stirring dry ingredients in a bowl with large circular arm movements (Huffman & Fortenberry, 2011). As for whole hand coordination, sorting activities can be done with trays and lids. Pinching can be developed by sorting buttons by color and placing them in the correct containers and pincer coordination can be encouraged by having children catch corks with tweezers in a bowl of water.

2.10.4 Conclusion

Early childhood is an important period for the development of physical skills. Within this chapter, a distinction is made between gross motor skills, which refers to movements involving large muscle groups, and fine motor skills, which involve the coordination of small muscle groups. In this study, the emphasis is on fine motor skills, primarily examining the use of the arms and hands in activities such as eating. Fine motor skills are learned and developed at an early age. Neglecting the stimulation of these, especially in low socioeconomic situations, can lead to developmental delays. Carvell describes four stages in which the development of fine motor skills, from whole arm movement to pincer coordination. Age-specific milestones for developing fine motor skills are also discussed, from swinging and clapping by one to two years to drawing and writing by five to six years. To promote fine motor skills a systematic approach is required. This should include daily routines, frequency of activities and materials used. Furthermore, activities tailored to each age and skill level contribute to effective muscle development and strengthening of small muscles. In general, stimulating fine motor skills in early childhood is important for the development of the child's skills.

2.11 The development of child independence

The research below highlights the importance of promoting independence and addresses the development of independence among children. The purpose of the research is to find how to promote independence. First, the research will discuss the several definitions of independence of children.

2.11.1 Definitions; independence of children

Independence can be seen as a fundamental value in society (Turnbull & Turnbull, 1985). Although independence is a fundamental concept, the scientific literature proves difficult to identify the term with a unified definition. An overarching and general definition of independence behavior involves behavior that can stand alone and thus is not dependent on the behavior of others (Widat et al., 2023).

Much research has been done on children's independence specifically. Researchers regularly focus on how independence can be developed and encouraged. Also here, the definitions of independence differ. The following definition of children's independence comes close to the general definition of independent behavior mentioned above. The definition is concretized by stating that children's independence is about the ability to act, think and feel without excessive dependence on other persons (Wulan & Kurniawati, 2021). Specific examples of child's independence are given, such as children's ability to wash their hands, eat, put on clothes and urinate on their own (Saleh et al., 2022). The aspect of needing to be free from dependence on other persons, which can be found in the previous definition, is also reflected in definitions by other researchers. However, Wulan & Kurniawati (2021) also emphasize that complete independence from others is not realistic in the case of a child. Thus, there is a limit to the extent to which independent behavior can be expected of a child.

2.11.2 Reasons to promote independency; risk of dependency

According to Dodge et al. (2002), there are several other factors that can express a child's independence. These include self-confidence, discipline, physical abilities, social skills, behavior conditioning and controlling emotions. These factors are more prevalent in children who are independent. This is positive when looking at self-confidence, for example. Someone who has more self-confidence experiences more motivation and is more likely to strive to achieve good results in life (Bandura, 1977; Ericsson et al., 1993; Nicholls 1984). The same goes for a positive self-image, which is also linked to a higher independency. When a person is not independent, he cannot experience a sense of freedom (Cerino, 2021). That, while the feeling of freedom is essential for tackling certain situations in life. It is therefore important that modern school systems focus on encouraging independence.

As early as possible, independence should be introduced to children (Saleh et al., 2022). Dodge et al. (2002) emphasizes the importance of the development of independence in the early childhood. In particular, the aspect of confidence in acting, is commonly endorsed in the literature, for example by Wulan & Kurniawati (2021). When independency is not taught soon enough, there is a risk of its opposite: dependency (Saleh et al., 2022). Dependency occurs when independent behavior is neglected (Tork et al., 2007). Someone who is dependent is recognized by a lack of responsibility for their actions. He particularly looks to others when it comes to responsibility (Sunarty & Dirawan, 2015). Independent children are better at dealing with social dynamics and diversity (Saleh et al., 2022). In addition, there is a risk that a child will lack the ability to shape himself if he does not learn independent behavior.

2.11.3 Child independence development; internal and external factors

When it comes to the road to becoming an independent child, the central point is that children must learn to express themselves progressively better, do more things on their own and have more opportunity to discover the world around them (Touhill, 2013). Within this, it is important that a child learns decision-making skills, so that it can make choices (Sunarty & Dirawan, 2015). It is also argued that independence with children is not only about being able to make choices, but also about being able to accept the consequences a choice brings (Saleh et al., 2022). It is widely held in the scientific literature that independence is more than just a physical or psychological capacity (Scott, 1984; Gaylin & Macklin, 1982).

To be able to get a better picture of how independence can be taught to children, it is essential to make a split between internal and external factors that can affect a child's independence. Internal factors are about the emotional and intellectual conditions of a child, for example the physical condition and intellectual potential, but also maturity, gene, body state, birth order, talent, and sex (Sunarty & Dirawan, 2015). External factors are more about the environmental experiences of a child. It includes parenting patterns, the educational background of the parents, love and affection, and the school system. Both internal and external factors are important when it comes to encouraging a child's independence. This research will largely focus on external factors, as these are precisely the factors that a child's environment can influence.

When it comes to a child's environment, the starting point is the recognition that children are born eager to learn and dispose of their own unique genetics and potentialities. This becomes evident from the first year of their life when looking at the performance of basic actions, such as efforts to feed themselves, communicate and investigate (Montessori, 2007). According to Piaget (1954), children learn best when they are doing the work themselves. Vygotsky (1935) additionally emphasizes that the interaction with their immediate environment leads to more knowledge about themselves, the environment around

them, and their relationship to that environment. Within this context, it is important that parents support children experimenting and sometimes taking risks in the process. Parents should have confidence in their children, with it being more desirable for parents to cooperate with their children, rather than be in charge. There are several models of parenting that promote children's independence, including positive parenting and parenting democratic (Sunarty & Dirawan, 2015). Communication is central to both models. Besides this all, it is necessary to emphasize that children are highly sensitive, and every aspect of their environment will have an impact on them (Steiner, 2008). Therefore, a predictable, comfortable, and ordered environment creates satisfaction in children (Montessori, 2012).

2.11.4 Ways to actively promote children's independence

Every child does have its own potentials that develop based on the specific stimulus they get throughout their developmental stages (Sujarwo et al., 2022). Parents and teachers play a very important role in encouraging independence in children (Saleh et al., 2022). Because children, especially at a very young age, spend a lot of time in the family environment, parents have a role as an educator. They supervise the learning process and are responsible for gradually adjusting the process to the level of development of the child when staying patient themselves (Fauziah et al., 2021). For optimal encouragement, parents need to (1) provide several choices, (2) assist the child in solving problems, (3) give sincere praise when the child makes a choice, (4) provide support and respect, (5) communicate well, (6) familiarize the child with doing things independently, (7) make the child responsible for its own actions, and (8) provide good examples of attitude, speech, and behavior (Saleh et al., 2022). This type of encouragement from parents can be applied when a child needs to choose clothes, for example, as well as when the child needs to brush his teeth or go to the bathroom by himself.

The role of teachers sees more on facilitating and supporting the child's independent behavior, partly so that goals can be achieved at school (Saleh et al., 2022). The teacher's roles include (1) facilitating independent behavior, (2) understanding the child, (3) providing information about choices to be made, and (4) providing assistance in making concrete choices, (5) ensuring habituation, and (6) building a harmonious relationship with the child. For example, a teacher can give a child the opportunity to play alone unaccompanied so that he is trained to develop ideas and think for himself. When it comes to habituation, it can be about putting on the right shoe on the right foot, taking off shoes, daring to ask questions and completing given tasks. The harmonious relationship is important so that the child is able to speak easily and can be clearly understood by others.

For both parents and teachers, it is important to communicate as much as possible at the child's level (Saleh et al., 2022). This includes using children's language, applying a systematic and easy-to-understand way of communicating and applying clear intonation. Apart from this, parents and teachers should allow children to ask questions. In all this, it is a relevant fact that children imitate what they hear, see, and feel. Thus, the behavior of parents and teachers can reflect on the children. Parents in particular need to set a good example. Teachers should function as role models.

2.11.5 Conclusion

This literature review underscored the importance of promoting the independence of children. It became clear that independence for children involves the ability to act, think and feel without excessive reliance on others. Moreover, the research gives several reasons for promoting independence at an early age. This includes the fact that it leads to more self-confidence, and it cultivates resilience and adaptability. The research shows that the interaction of internal and external factors is important in shaping a child's autonomy. Environmental influences have a significant impact on the child independence. These include parenting styles and educational frameworks. Finally, strategies for promoting independence are explained. This part highlights the important role of parents and teachers. Parents can, for example,

promote independence by offering choices and familiarizing the child with doing things independent. Besides that, it is important for parents to make the child responsible for its own actions. By offering choices, guidance and positive reinforcement, caregivers can promote that children navigate the world with confidence and self-assurance. Effective communication, role models and a supportive environment are as well important in promoting child independence.

2.12 User analysis; an interview with parents

Within the user research, parents of children between the ages of one and four are interviewed. The purpose of the interview is to learn about experiences and needs when feeding their children in a stroller, as well as the use of products that can help with this. The experience of parents who feed their children in the stroller can provide useful information for the development of the new product. The interview is conducted with ten parents with a stroller or baby carriage. The interview questions can be found in Appendix E Interview questions user research. The answers per person are written down in Appendix G Interview results, in Dutch. Following a coding scheme (Appendix H Coding scheme), the interviews were analyzed, using Thematic Analyses (Braun & Clarke, 2006). More on the Thematic Analysis methodology in Appendix F Thematic analysis interviews.

These ten people do not represent the entire target group. Both fathers and mothers of single and multiple children were interviewed, but only Dutch people. Joolz is leading in the Netherlands, but also sells in other countries in the EU, Asia, Australia and America. The experiences and needs of people from countries other than the Netherlands were not included within this study.

2.12.1 Interviews

The interviewees generally own a large stroller and a buggy; two of the ten interviewees own only a large stroller. Six people were interviewed with one child and four with two children. The interviewees all feed their child(ren) in the stroller.

It varies from parent to parent what they feed their children in the stroller, but it can be said that it is mostly small snacks and not full meals. Some more frequently mentioned foods to eat in the stroller include drinks, pieces of fruit, fruit pouches/ squeeze fruit, vegetable nibbles, sandwiches, rice cakes, crackers and vegetables. Milk bottle feeding was also mentioned twice.

When describing the overall experience of feeding the child in the stroller, a slight majority named that the stroller gets dirty quickly. In addition, half of those surveyed have a fairly positive overall experience of feeding in the stroller. Several people indicated that it was difficult for the child to swallow because he or she is a bit slumped over, not 100% upright, although one person commented that this could be due to age and that it would probably be better when the child was older. Similarly, another indicates that the child is sitting upright in the stroller, which prevents choking. A frustration shared by a few parents is that the child easily throws food out of the stroller. Finally, several parents describe that they prefer to give as little food as possible in the stroller.

When it comes to products, they use for feeding the child, mainly a non-spill cup or straw cup is named, in addition there are also some people who say no products are used. Other answers that were named by some people are a bag, bib, milk bottle, cupholder and sealable container. In addition, one of the interviewees used a snack tray in the past and described it as a helpful experience that the child can grab food by himself.

When it comes to a typical routine, answers vary. Several people indicate that they do not have a typical routine. Others indicate that they keep the usual eating routine or have two specific eating times. Two

people describe always bringing snacks with them. Half of the participants indicate giving food in the child's hand, a few did mention dosing the food in the child's hand. A few describe that after drinking, the water bottle is returned to the parent. A few also indicate that they give the child food to keep him satisfied. Furthermore, several indicate that in a restaurant or terrace, the child sometimes sits in the cart or the cart is pushed against a table to eat in the cart. When giving the milk bottle, people put the backrest back. Last, two people specifically give their child something to eat in the supermarket.

Interviewees were surveyed about healthy eating with nine out of ten describing considering healthy foods. The other indicates the importance of balance. In doing so, a few mention the child gets almost only healthy food. Others indicate that they are more practical along the way and focus less on healthy eating and mainly give healthy food at home. One person says they don't give fruit because it doesn't stay fresh and gets dirty.

When it comes to challenges experienced by interviewees while feeding their child, everyone pointed out the dirt and that children mess a lot. In addition, throwing food on the floor and cleaning the stroller are mentioned several times. One person describes that bringing the cup is inconvenient considering the child is sucking on the cup and this should not get dirty. Furthermore, a few people describe that a baby carriage is too low for a table, the bumper bar is too high in a stroller, the stroller gets in the way in a restaurant, the baby gets cold hands while eating and having to do everything at once.

On the theme of distraction and restlessness, a small minority indicated that this does not bother them. In addition, a few people describe that eating helps against distraction and that the child focuses less on food and more on the environment in the stroller. Solutions people have for distraction are taking time, finding a quiet spot and closing the canopy over the stroller.

When it comes to supporting parents and how Joolz can contribute to that, different answers are given. Half of the parents say they find it convenient to have something to put food and a cup in. In addition, a few mention that they will be fine and do not need a product or will not use the product. Some also describe wanting a product that prevents or reduces messes. One person recounted having a negative bias toward snack trays and finding it pragmatic. Other answers include products that do not bring issues and something where items from the diaper bag can be placed.

The interviewees were then asked about the ways of encouraging independence. The majority indicated that they encourage independence in their children. In particular, they do this by having their child pick up food themselves or try to eat by themselves with a spoon or fork. Others say they do this mainly at home, and one person describes sometimes encouraging independence. A few also describe helping on the go more quickly for practical reasons.

When asked about characteristics for a new product, the answers ranged. Half described wanting a product that could hold a cup. In addition, a tray, recess, notch, raised edges or something for food to lie in are mentioned a couple of times. Furthermore, convenience, quick disassembly and easy to clean (dishwasher safe) are described more than once. It is also mentioned a few times that it should not interfere with folding. Examples of other answers are something that does not always have to come off, reduce mess, can be used with few operations, suitable for baby (cannot knock over) and material without harmful substances.

The last question addresses learning elements or developmental goals that parents would like to see reflected in the new product. Again, the answers vary widely, however all parents reacted positive to the idea of adding a learning element. For example, several people indicate that colors could be integrated, but one person describes finding colors terrible. Lids or something you can attach a stuffed

toy or tactile book to are also mentioned a few times. Other answers include something to turn and pull and that if the child presses on something it gets food.

2.12.2 Conclusion

The interview conducted, with ten Dutch parents of children ages one to four, reveals several insights. Parents primarily give their children snacks in the stroller rather than full meals, with messiness being a common concern. Although some shared a positive experience when feeding on the go, problems such as throwing food out of the stroller occurred and some indicated they prefer not to feed in the stroller. Most parents use anti-spill cups or straw cups to give the child drinks in the stroller. Whereas some parents stick to typical feeding schedules, others take a more flexible approach. In addition, some parents use food to keep the child satisfied. For most parents, health considerations are key, with a focus on providing healthy food, although practical considerations sometimes trump adherence to healthy eating, especially outside the home. Challenges such as messing around, throwing food on the floor and cleaning the stroller were emphasized by respondents. Going into encouraging independence, most parents described wanting to encourage self-feeding skills both at home and on the go, although on the go the kid is more often helped due to practical reasons. When it comes to how Joolz can support parents while feeding in the stroller, parents express wishes for products that make food and cup storage easier and reduce mess. Parents feel empowered while feeding their child in a stroller when practical solutions are available to prevent messes and make feeding easier. Parents also give several suggestions for new product features including a cup holder, food storage, easy cleaning and no folding issues are desired. Lastly, parents respond positively to adding a learning element.

2.12.3 Personas

Based on the target group analysis and user analysis, personas can be created. These detailed descriptions of parents of children between the ages of 1 and 4 can be found in Appendix I Personas. The personas reflect realistic individuals, rather than a general target group. This results in a better picture of the target group and their needs. Within this research, the personas function only as a visualization of parents' needs and experiences. For further development of the product, the full research is consulted.

2.13 Customer journey; the journey of going out with a child

Using information from the snack tray observation, target group analysis and user analysis, three customer journeys are created. The three customer journeys address the steps parents go through when going outside with their child, the stroller and snack tray. The journeys are divided into daily use, recreational use and travel. Five parents of young children were asked to complete a template for the three journeys and describe their routine when going out with a child. The template can be found in Appendix J Customer journey template and the results can be seen in Appendix K Customer journey results. This information is used to detail the customer journeys and make them accurate to parents' experiences. In addition, the final customer journeys are discussed with several parents to make sure it is accurate and matching their experiences.

2.13.1 Daily commute

Within the daily commute, parents strive for efficiency and want to be back before the child needs to sleep or eat. This is also the reason parents do not always bring snacks, when they bring snacks, they prioritize snacks that do not cause a mess. When preparing, it can also be seen that parents do not want to spend much time on this, despite this, it is important that they do not forget anything and they

worry about this. During the commute they try to avoid hassles and be ready when the child needs something. One way to keep the child content is to give them snacks. The trip causes different emotions think satisfied if everything goes well, or just afraid that the child will not stay calm, also frustrations at difficulties occur. Finally, when they return, the focus is still on efficiency. Since they have to go on to other daily tasks, they can possibly forget to clean the stroller. The entire customer journey for the daily commute is shown in Figure 34.

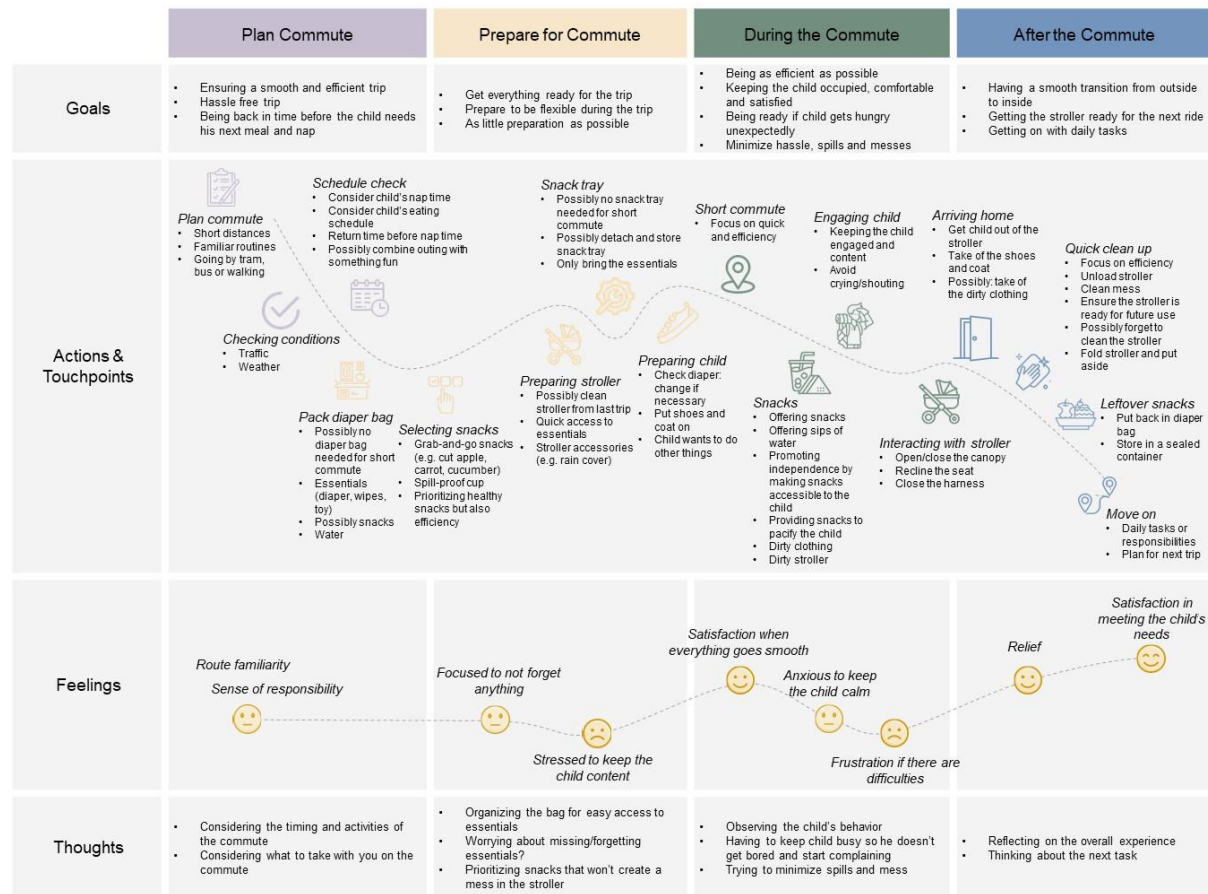


Figure 34: Customer journey daily commute

2.13.2 Recreational outing

Within the recreational outing, parents want to have fun together with their children. This trip involves more planning and preparation than the daily commute, for example, they are more likely to use the car for this purpose. Within the preparation of the trip, snacks but also toys are brought along to entertain the child. Snacks are sometimes prepared the day before and priority is given to snacks that do not cause a mess. Parents want to focus on fun but also feel the responsibility to bring all the necessities. During the outing, it is about keeping the child entertained and bonding with the child is valued. Children are likely to get dirty while playing so before eating, the child's hands and face should be cleaned. Upon return, parents try to restore order. They make sure the child is clean and ready to play inside or go to sleep. Since the child is probably tired or hungry after the outing, cleaning the stroller and snack tray may be forgotten. Parents are satisfied with the successful outing, but also tired from the activities. The entire customer journey for the recreational outing is shown in Figure 35.

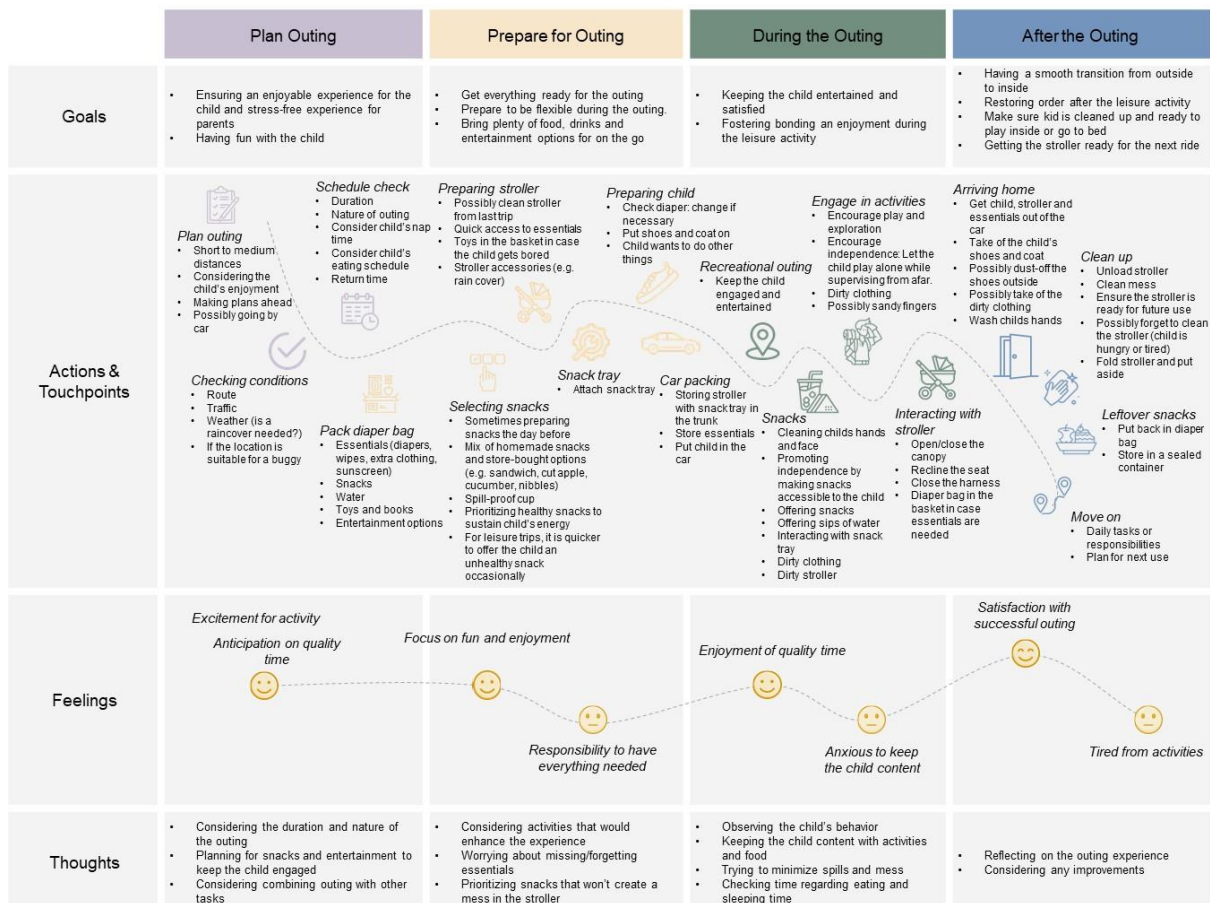


Figure 35: Customer journey recreational outing

2.13.3 Travel

Within the travel scenario it is about both efficiency and fun. Planning and preparing for the trip takes longer than recreational trips, as the trip is longer and requires more packing, for example, a suitcase is also needed. It is also possible for the family to use different means of transportation, think of a car and plane. With preparing comes the need to be ready on time and all the essentials to take. Parents also have to keep track of logistics for sleeping and feeding the child. Bringing snacks involves snacks with a longer shelf life and while still prioritizing snacks that do not create a mess. While traveling, parents are focused on keeping the child content. When on vacation, they enjoy the quality time and let the child explore on their own, similar as the recreational outing. Upon returning from vacation, the parents focus on restoring order and clean the child. The child may be tired from the return trip and therefore parents possibly forget to clean the stroller. Parents are satisfied that they measure their child's needs but are also tired from the trip. The image below (Figure 36) shows the entire customer journey for traveling.

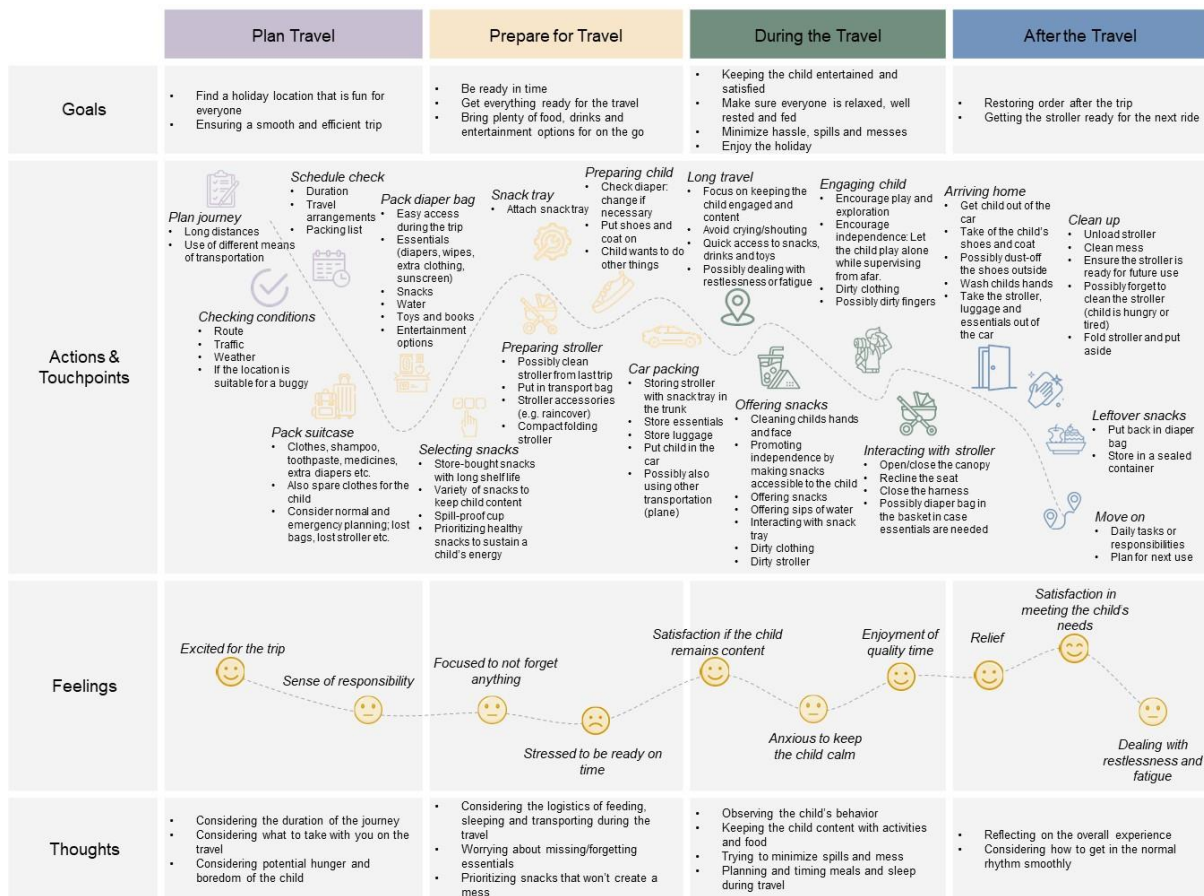


Figure 36: Customer journey travel

2.13.4 Conclusion

Based on the snack tray observation, target group analysis and user analysis, three customer journeys were created: daily use, recreational use and travel. Using five parents who described their routines for the three journeys, the customer journeys are specified. The customer journeys emphasize efficiency, enjoyment and preparedness. In the daily commute, parents prioritize efficiency, they want to keep their child content and prioritize snacks that do not cause mess. Upon return, little time is spent restoring order and they move on to other daily tasks. Recreational outings involve more planning and preparation with packed snacks and toys. The focus within these outings is placed on fun and bonding between parent and child. Traveling requires extensive planning, with attention to logistics, snacks that last longer and keeping the child happy. Although trips on destination resemble recreational outings. Recreational outings and travels end up with parents making sure their child is clean and his or her needs are met, although they may overlook cleaning the stroller due to the child's fatigue and hunger.

2.14 Legal safety standards

Within this research, relevant safety standards are discussed. It is important to design a safe product where safety risks are minimized. This chapter discusses standards that address mechanical requirements. In addition to mechanical clauses, there are also relevant standards that include chemical clauses. These standards are included in the PoR and can be shared with the supplier so they can consider the chemical requirements. Appendix L Safety standards describes in detail the relevant safety standards and the clauses important to the project in this regard. A brief summary can be read below.

First, European standards are discussed. For example, EN1888-1 and EN1888-2 provide detailed safety criteria for strollers and baby carriages to protect children's safety. These standards include measures to prevent access to dangerous openings, shear and pinch points. Also crushing hazards, stability and an irregular surface test is covered. These standards ensure that the products are safe for children, considering factors like sharp edges. Additionally, EN14372 addresses safety aspects of cutlery and eating utensils for young children. This standard does emphasize criteria such as sharp points, edges and small parts to prevent choking hazards. Next, one American standard, ASTM F833, is covered. This standard also covers safety standards for strollers and buggies, in addition, the American standard describes specific norms about trays. It does focus on aspects like tray/grab bar protection, passive containment, and frame folding safety to prevent injuries. This standard also describes stability testing with trays. This includes ensuring structural integrity during folding to prevent injuries from scissoring or pinching. Finally, an Australian standard, AS 2088-2023, is discussed, this norm dictates stability tests for strollers. The standard also covers durability and security of latching devices for accessories, and structural integrity tests under different conditions. These standards underscore the importance of rigorous testing methods to ensure product reliability and child safety.

2.14.4 Conclusion

This research examines safety standards for designing a safe-to-use product. European standards such as EN1888-1 and EN1888-2 provide safety criteria for strollers, including measures to prevent access to dangerous openings. The American standard ASTM F833 discusses specific requirements for trays. This includes, for example, a stability test. Finally, the Australian standard, AS 2088-2023, focuses on stability and safety of interlocks, testing structural integrity.

2.15 Sustainable material analysis

The materials analysis examines characteristics and properties of sustainable materials, naming examples and exploring existing sustainable eating products for children. The purpose of this analysis is to understand sustainable materials and provide examples that could possibly be used in the yet-to-be-designed product.

2.15.1 Sustainable materials

A sustainable material can be defined as one that has minimal impact on the environment and society within its entire life cycle (Bontempi et al., 2021). Examples of sustainable materials include recycled materials, bio-based polymers and materials designed for renewable energy. Below are some key concerns for sustainable materials (Titirici et al., 2022).

- **Renewable sources.** Materials derived from renewable sources allow for their natural replenishment. This criterion emphasizes the importance of reducing dependence on finite resources.

- **Energy efficiency.** By using renewable energy sources whenever possible and minimizing overall energy consumption, the environmental footprint is reduced.
- **Minimal water-usage.** Water scarcity is a global problem. Sustainable materials strive to minimize the impact on this valuable resource.
- **Non-toxic.** Sustainable materials do not release harmful substances or toxins during production, use or disposal. Ensuring safety of both the environment and human health.
- **Durability.** Durability is critical to reducing the frequency of replacement and minimizing waste.
- **Recyclability, reusability, biodegradability.** The end-of-life of the material must be considered. This includes their ability to be recycled, reused or biodegraded, so they can break down into natural substances over time.

In addition to sustainability, the practicality of the material for a children's eating product is also important. A chosen material must meet government safety regulations to ensure the safety of users.

2.15.2 Sustainable material examples

Some examples of sustainable materials are described below.

Stainless steel. Stainless steel is made primarily from iron ore, which is a renewable resource that promotes natural replenishment (Baddoo, 2008). Technological progress contributes to an energy-efficient and smaller carbon footprint during steel production. The key properties of steel are its yield strength, tensile strength, elongation and hardness (*Steel Material Properties*, n.d.). These properties contribute to the durability of steel, reducing the need for replacement and minimizing waste (Baddoo, 2008). It is a non-toxic material and does not release harmful substances during its life cycle. This makes it safe for both the environment and society. Stainless steel is easily recyclable at the end of its life (Björkman & Samuelsson, 2014).

Silicone. Silicone is a synthetic polymer composed primarily of silicon. Silicon is a natural element extracted from abundant resources such as sand (Graiver et al., 2003). It is the second most abundant element in the Earth's crust after oxygen. At the end of its life cycle, silicone is recyclable and reusable (Deng et al., 2023). Silicones have drawbacks such as they do not degrade and remain in the environment for a very long time. (Graiver et al., 2003). Many plastics are made from fossil hydrocarbons (Geyer et al., 2017). Also, none of the commonly used plastics are biodegradable. Therefore, silicone as an alternative to plastics in this field can be considered more sustainable because it is produced with an abundant resource.

Recycled materials. Recycled materials are materials in which waste materials are reprocessed into a new material (European Commission, n.d.). These materials reuse existing resources, reducing the need for new resources (Yang et al., 2022). Using existing resources provides opportunities to minimize carbon footprint (Hopewell et al., 2009). In Europe, there are additional regulations that address recycled materials in conjunction with food contact to ensure safety. Recycled materials, like plastics, often retain their recyclability and can be reused, contributing to a circular economy and reducing waste (Hopewell et al., 2009).

Plant-based materials. Plant-based materials refer to substances derived from plants; these materials include fibers, polymers and raw materials derived directly from plants (Boros & Tózsér, 2023). Examples include bamboo fiber, corn starch-based plastics (PLA), acacia wood, palm leaves, sweet potato fiber, coconut fiber and cork fiber. Plant-based materials come from renewable resources and thus can be replenished naturally (Boros & Tózsér, 2023; Hasan et al., 2023). For example, bamboo fiber, is known for its durability, reducing the need for replacement and minimizing waste (Hasan et al., 2023). Biodegradable polyesters, such as PLA, can be processed in the same ways as various standard

plastics (Shogren et al., 2019). Plant-based materials are reusable or recyclable and sometimes biodegradable, breaking down over time into natural substances. Not all plant-based materials are biodegradable, this depends on several factors including additional additives.

2.15.3 Existing sustainable baby tableware

The mood board below (Figure 37) shows different existing baby tableware made from sustainable materials. Frequently used are the materials silicone and various forms of PLA. In addition, bamboo appears more regularly. Stainless steel is minimally used in plates but is more often seen in lunch boxes and trays. Finally, one of the plates from the mood board is made of a composite with pulp from bamboo, wood fiber and sugar cane.



Figure 37: Existing sustainable tableware

2.15.4 Conclusion

Sustainable materials are characterized by their minimal impact on the environment and society throughout their life cycle. Key considerations include the use of renewable resources, energy efficiency, minimal water use, non-toxic properties, durability and end-of-life aspects: recyclability, reusability and biodegradability. In addition to sustainability, it is important that the material complies with government safety regulations, in order to consider the health of children. When looking at examples of sustainable materials, stainless steel, silicone and plant-based materials such as bamboo fiber and plastics based on cornstarch mail can be mentioned. In terms of existing sustainable baby dinnerware, materials such as silicone, various forms of PLA, bamboo and stainless steel are frequently used.

2.16 Conclusion

This conclusion focuses on answering the main research question using the research in Chapter 3. The main question asks how Joolz can empower parents to promote fine motor skills and independence during nutritious meals for children aged 1 to 4 years in a stroller. To enable parents to promote fine motor skills and independence, several strategies can be used.

First, it is important to understand the development of fine motor skills in young children. Encouraging fine motor skills at an early age is important for child development. Carvell's four-stage model outlines the progression of fine motor skills and emphasizes the importance of activities tailored to age-specific milestones for effective muscle development. One example is giving children small pieces of food to practice pincer movement. Furthermore, the development of fine motor skills can be stimulated by a systematic approach, daily routines, activity frequency and appropriate materials can contribute to this.

Moreover, it is important to promote independence from an early age; this helps to promote children's self-confidence, resilience and adaptability. Independence refers to the ability to act and think independently. By applying practical strategies, such as providing choices, familiarizing children with independent action and instilling a sense of responsibility, children can effectively become more independent. Parents can incorporate this by, for example, allowing their children to eat independently or giving them meal choices. Encouraging self-help skills, such as using cutlery or opening food containers not only improves fine motor skills, but also cultivates a sense of independence.

Furthermore, parents have a role as educators and they need to set a good example and be a role model in demonstrating independence. It is essential to create a supportive environment, using effective communication and positive reinforcement. These aspects can all significantly affect a child's behavior. By employing these strategies, parents can lay a strong foundation for their child's future skills and independence.

The next section discusses requirements and wishes arising from the findings of the various research conducted. These requirements and wishes are used to link research findings to the product development.

Chapter 3. Program of Requirements

The Program of Requirements (PoR) consists of the wishes regarding and requirements to be met by the to be developed product. These requirements and wishes come from the findings of the research (Chapter 3). The conclusions of the research have been transformed into requirements and wishes. The PoR is a guide in the development of the product.

3.1 Program of Requirements

The most important requirements of the PoR can be seen in the table below (Table 1). The complete POR with all test methods can be found in Appendix M Program of Requirements. The PoR consists of requirements and wishes, where the requirements must be met in the final product, the final product does not have to meet all the wishes. The PoR distinguishes between wishes and requirements by using the letters W (wishes) and R (requirements). In addition, the table describes which research is the source of the requirement, a number of requirements have no source and are predetermined by the company. Finally, at a later stage, after testing the final product, it is possible to check which requirements and wishes the product meets.

Table 1: Program of Requirements

Nr.	Type R/W	Description	Source	Fulfilled Y/N
1.1	R	The product shall be applicable to the Aer+.	Product analysis	
1.4	R	The product shall promote fine motor skills.	Fine motor skills	
1.5	R	The product shall promote independence.	Independence	
1.6	R	The product shall be able to store at least food with a size of 80mm x 90mm x 25mm.	Product analysis	
1.7	R	The product shall be able to hold a cup.	User analysis	
1.9	R	The product shall fold in with the Aer+.	User analysis	
1.10	W	The product should minimize the mess in the stroller while eating.	User analysis	
1.11	W	The product should be usable with minimal extra steps.	User analysis	
1.13	R	The food shall not fall off while driving.		
2.1	R	The design matches the Joolz design style.	Joolz design style	

3.2 Test methods

Each requirement can be validated using a test method. This test method describes the test that reveals whether the requirement has been achieved at the end of the project. The most important requirements are described below along with their corresponding test method (Table 2).

Table 2: Program of Requirements test methods

Performance

Nr.	Type R/W	Description	Test method
1.1	R	The product shall be applicable to the Aer+.	Testing with a prototype.
1.4	R	The product shall promote fine motor skills.	Passed when the product offers an activity requiring the small muscles in the hand (activity requiring fine motor skills).
1.5	R	The product shall promote independence.	Passed when the product offers choices, familiarizes with independent actions and/or encourages self-responsibility.
1.6	R	The product shall be able to store at least food with a size of 80mm x 100mm x 25mm.	Passed when the product can store at least food with a size of 80mm x 100mm x 25mm.
1.7	R	The product shall be able to hold a cup.	Passed when the product can hold a cup.
1.9	R	The product shall fold in with the Aer+.	Testing with a prototype.
1.10	W	The product should minimize the mess in the stroller while eating.	Testing with a prototype and test person.

1.11	W	The product should be usable with minimal extra steps.	Testing with a prototype.
1.13	R	The food shall not fall off while driving.	Testing with a prototype.
2.1	R	The design matches the Joolz design style.	Feedback session with the Joolz design team.

3.3 Conclusion

Within this section are requirements and wishes resulting from the research. These include requirements for functionality, design, ergonomics, engineering and safety. For example, the product shall fit the Joolz design language, but requirements that come from the user research are also included, such as minimizing the mess in the stroller while eating. Using these requirements in mind, concepts can eventually be defined. First, design sketches will be made in order to come up with creative and innovative ideas.

Chapter 4. Ideation and Concept Generation

Within the ideation phase, research is used to generate ideas and solutions. Brainstorming sessions are used for this purpose. The ideas and solutions are visualized through sketches. After the ideation sketches, the task is to diverge into concrete idea directions. The idea sketches can be combined into a concept with the corresponding idea direction in mind. Mock-ups are used to choose the best concept.

4.1 Methodology

In the ideation phase, as many different ideas as possible are conceived. This phase is structured by going through a number of steps. The figure below (Figure 38) specifies the structuring used in this phase. The ideation phase starts with two brainstorming sessions, using the main findings of the research as a guide. The phase ends with a concept that can be materialized.

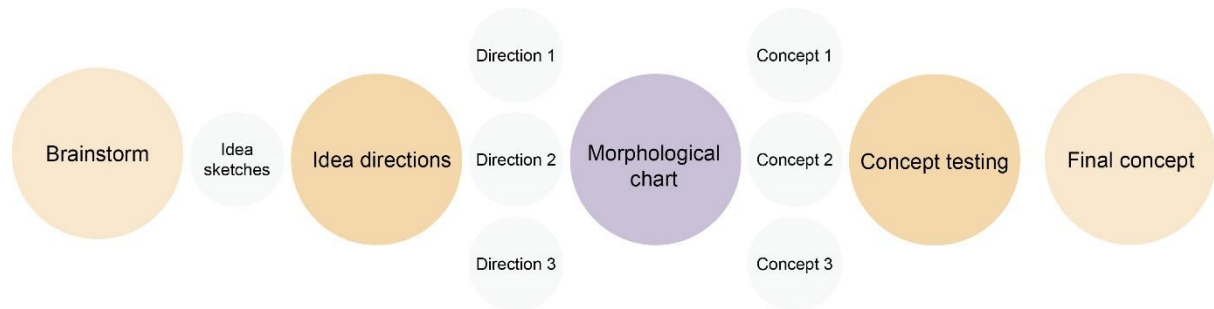


Figure 38: Structuring ideation phase

4.2 Idea generation

Figure 39 discusses the main findings of the different conducted researches. These findings form the foundation for the idea phase and are thus used to develop ideas.

Research	Results		
Joolz design style	Joolz values sustainability in their designs.	Joolz core values are elegance, minimalism, and high quality.	
Product analysis	People buy the product to practically store snacks and cups for their children.	The current product does not radiate Joolz core values.	The current product is not in an ergonomic location.
Market research	A number of competitor snack trays are available.	Many baby tableware is available.	
Purchasing behavior	Safety is most important to parents in baby supplies.	Practicality, appearance, and price follow.	Trends and brands have minimal impact on parental choices.
Nutritious meal	Early years shape eating habits.	Varied diets with nutrients are essential for growth.	Pictorial nudges, tableware size, and separate portions can influence children's habits
Cognitive development	Sensory experiences are crucial for brain development in children.	Children exhibit key milestones: object permanence, symbolic play, memory.	
Fine motor skills	Stimulating fine motor skills in early childhood is essential for development.	Daily routines, activity frequency, and materials are crucial for muscle development.	Activities tailored to each age contribute to effective muscle development.
Independence	Early independence cultivates self-confidence, resilience and adaptability in children.	Parents have a role as educator and need to set a good example.	Offer choices, familiarize with independent actions and encourage self-responsibility.
Target group	The Aer+ stroller caters to parents with mobile lifestyles, frequent travelers.	Functionality and style are prioritized, with ease of use valued.	The target group is frustrated by buying duplicate accessories due to compatibility issues.
User research	Parents primarily offer small snacks and drinks, not full meals, in strollers.	Main challenges are messiness, child throwing items, and cleaning concerns.	Desired features include a cup holder, storage, easy cleaning, and no folding hindrance.
Customer journey	Daily commute: focus on efficiency, keep child content. Prioritize mess free snacks.	Recreational outings: focus on fun and bonding, more planning, preparation (snacks and toys).	Travel: focus on keeping child happy, extensive planning, long-lasting snacks.

Figure 39: Main research findings

4.2.1 Brainstorm

Idea generation starts with two brainstorming sessions (Figure 40). The first brainstorm is being conducted with four design engineers within Joolz and the second brainstorm involves three industrial designers. These brainstorming sessions both begin by presenting the current snack tray and research question. To start the idea development process broadly but still have guidance, key research findings are shared and the created mood boards and competitor products are pictured in a presentation for inspiration. The goal of the brainstorming sessions is to obtain as many different ideas as possible. For this reason, post-its are used in both sessions. No directions are given in advance so that as many different ideas as possible are generated. After sharing the research findings, post-its are handed out and different ideas are sketched and written. After brainstorming ideas, the ideas are sorted and categorized. The most outstanding ideas are discussed again afterwards. The image below shows a picture of both brainstorming sessions. The ideas were divided into a number of categories, examples being fine motor skills, modular and no mess. Photos can be found by category in Appendix N Brainstorm 1 and Appendix O Brainstorm 2.



Figure 40: Brainstorming sessions

4.2.2 Ideation sketches

After the two brainstorming sessions, design questions are drawn up for each category of interest. See Appendix P Design questions. The categories were determined using the two brainstorming sessions. Based on these questions, promising ideas are outlined. These lead to new insights and new sketches. The digital sketches made in this phase can be found in Appendix Q Ideation sketches. Below three ideas for each category are highlighted.

Modular. In the research phase, it was found that parents bring different types of food and use different drinking bottles. This makes it important the different food and drink bottles can be stored in the product. This direction also looks at how the product can be reused for other purposes and how the product can be used alongside the stroller. Another interesting idea is to make the product compatible with existing food containers. The image below (Figure 41) shows three idea sketches in the modularity category. The left idea deals with storing different cups, the holes allow for cups with handles. The idea in the middle uses the lid of the product as a play and draw station, giving the product an additional function.

The last product includes a separate container that can also be used alongside the snack tray as, for example, a lunchbox.

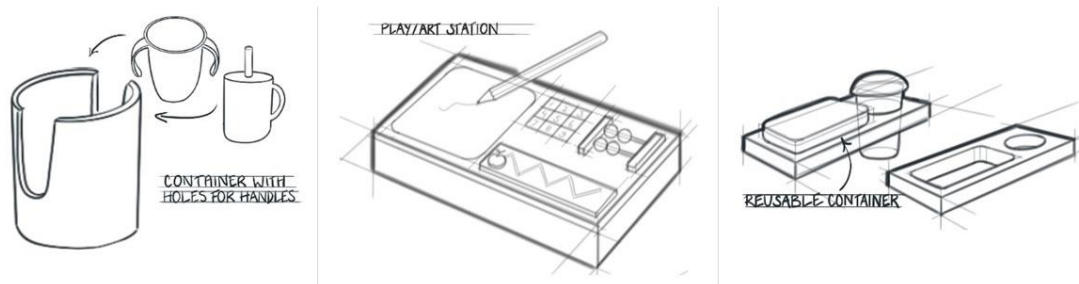


Figure 41: Ideation sketches Modular

No mess. During the user analysis, it emerged that the mess caused by the child in the stroller is the biggest frustration among parents. Within this category, it examines how the product can prevent or reduce mess and throwing food. It also examines how the product can be easily cleaned. The image below (Figure 42) shows three ideas for this category. The first idea is one for easy cleaning, removable inserts. By removing the inserts they can be cleaned. In the second image, the product is pressed against the children's legs, which reduces the amount of dirt falling onto the clothes and into the stroller. The last idea is small openings that require children to make an effort to grab food, making it less easy to throw away.

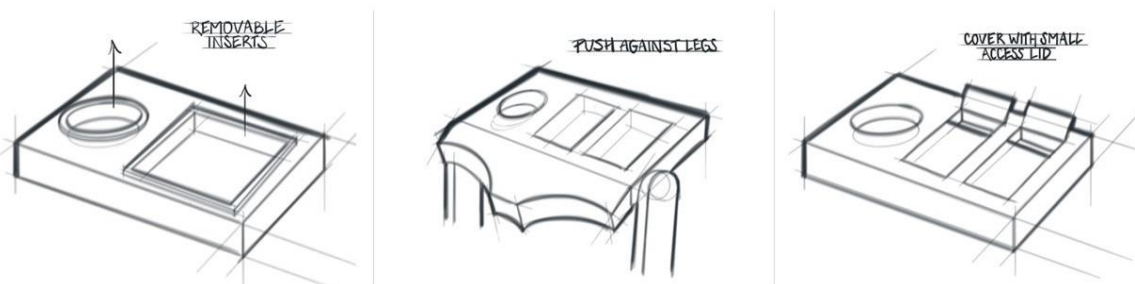


Figure 42: Ideation sketches No mess

Fine motor skills. The research question states that the product should promote fine motor skills, this is done by promoting to use the small muscles in the hand. Within this category are ideas that encourage children to use the small muscles in the hand and ideas with activities (puzzles, games) that require the use of the small muscles in the hand. The image below (Figure 43) shows three ideas that address promoting fine motor skills. The left idea deals with the use of pincer movement and learning this, by using small compartments children should try to grab the food with thumb and index finger instead of the whole hand. The second idea is a sliding member, this allows the child to slide the lid to reach another compartment. The last idea is focused on sensory senses, feeling textures and shapes.

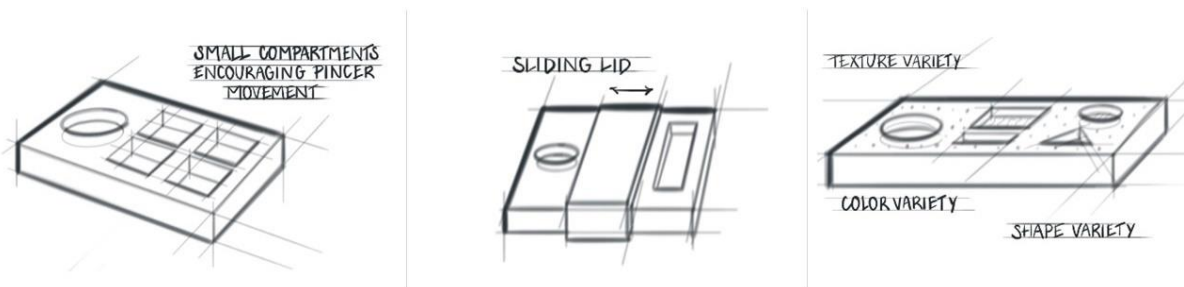


Figure 43: Ideation sketches Fine motor skills

Independence. The research question also states that independence of the child should be promoted. Within this category are ideas that promote self-selection, problem-solving skills, and independent activities. The image below (Figure 44) shows three idea sketches related to this category. The first sketch shows an idea where children can arrange the snack tray to their own liking. The second idea shows that the snack tray can rotate allowing the child easy access to the snack tray and all the compartments, allowing him to grab the food himself. The last idea deals with personalizing the snack tray, where the child can use stickers, for example, to customize the snack tray to their liking.

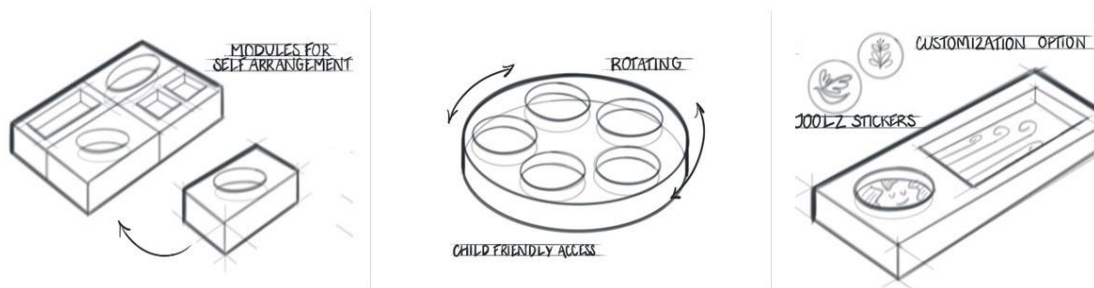


Figure 44: Ideation sketches Independence

Folding with stroller. This category looks at how the product folds with the stroller. The Aer+ buggy is a compact stroller that can be folded with one hand in one second. In the user interview, it was mentioned a few times that the product should not interfere with folding the stroller. The image below (Figure 45) shows three ideas that address this category. The first idea shows that the compartments can fold flat, allowing them to be folded with the stroller. The second and third idea deal with making the product tiltable, which then allows it to be folded along with the stroller. These ideas can be used at a later stage when further developing a concept.

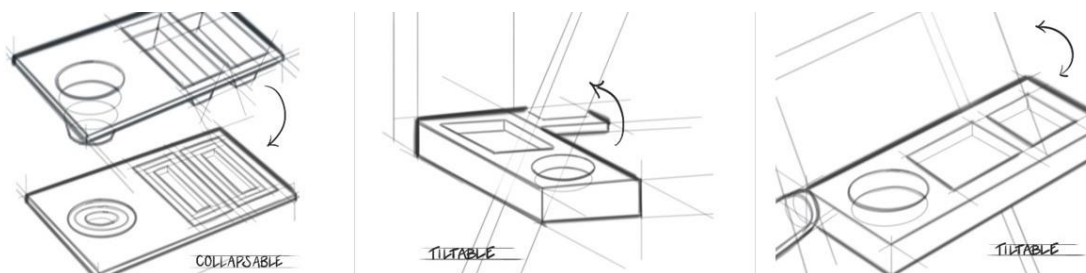


Figure 45: Ideation sketches Folding with stroller

Keep food fresh. A direction that came up in one of the brainstorming sessions was keeping food fresh. Fresh vegetables and fruits are often stored in the refrigerator and do not have an endless shelf life. Since healthy eating is a theme within the project, several of ideas were conceived within the category of keeping food fresh. The image below (Figure 46) highlights three ideas for this category. The first idea is an insulated tray to better keep food hot or cold. Another idea is to place a cooling element under the food to keep the food cold. The last idea is to seal the food with lids so air does not get in and keeps the temperature longer.

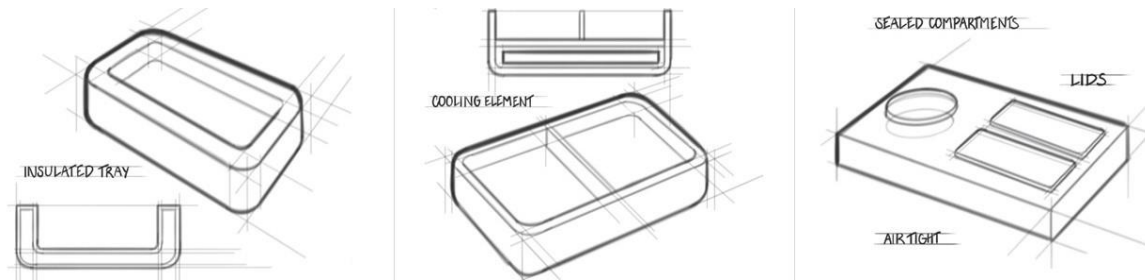


Figure 46: Ideation sketches Keep food fresh

Attachment. The current snack tray is not modular, there are different trays per stroller. The target group analysis shows that a target group frustration is having to buy accessories twice due to compatibility issues. Within this category, we are looking at options of connecting on different strollers. These ideas can be used at a later stage in further developing a concept. The image below (Figure 47) shows three ideas regarding attachment. The first idea is a one click fits all mechanism where the product attaches to one side of the stroller. The next idea is a product adjustable in width so that the product fits different strollers. The last idea focuses on different attachments per stroller, while the product itself remains the same.

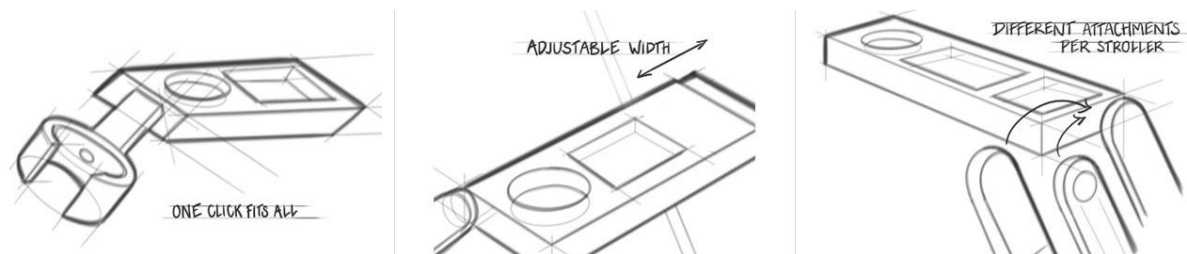


Figure 47: Ideation sketches Attachment

Features. The last category looks at integrating other functions into the product. The image below (Figure 48) shows three ideas for other functions the product could have. For example, the lid of the product, see the left sketch, can be used as an art panel, on which children can express their creativity. Another idea is to create toy attachment points, allowing children to play with their favorite toys while on the go. The third idea is to incorporate a sunshade into the product to protect the child from the sun while on the go.

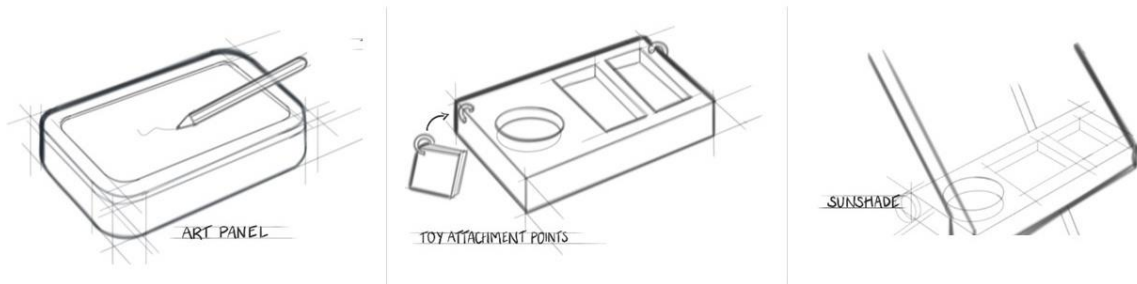


Figure 48: Ideation sketches Features

4.3 Idea directions

The idea sketches resulted in a variety of ideas. To get closer to concrete concepts, the choice is made to select idea directions. These idea directions come from the idea sketches, but are also related to the findings from the research. It was chosen not to include all categories from the idea sketches. The categories folding with stroller and attachment are omitted at this time. This choice was made because the findings within these categories can be incorporated into a concept a later stage.

A meeting (Figure 49) with three designers is used to choose idea directions. The sketches are printed out, with interesting ideas highlighted and explained with a post it. Customer journeys are also printed to align directions with parents' experiences.



Figure 49: Design meeting

The three directions are health, convenience and playful. The directions were created using the customer journeys.

Health. Within the idea direction of health, the focus is on healthy eating. The research question addresses nutritious meals for children. In addition, the user research shows that nine out of ten parents consider healthy eating for their child. However, a number of parents within this survey do indicate that they focus on practicality and less on healthy eating along the way. In addition, one person indicates

that they do not give fruit to the child on the go because it does not stay fresh and gets dirty quickly. Within this direction, the focus is on keeping healthy food fresh and promoting healthy food.

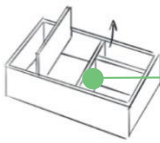
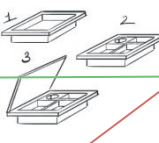
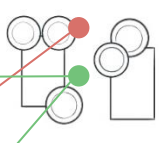
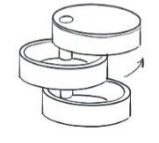
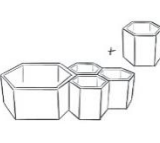
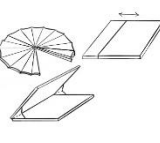
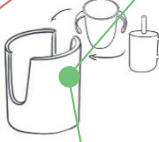
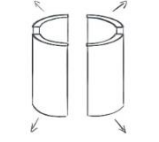
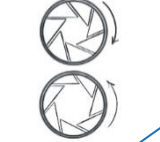
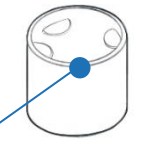
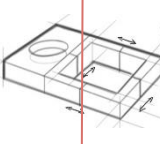
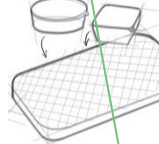
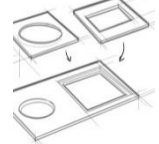
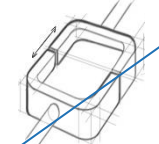
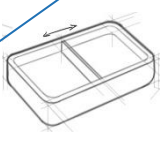
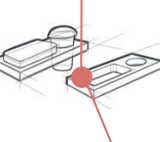
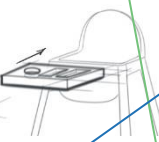
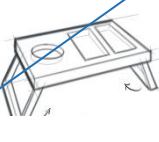
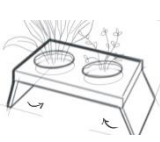
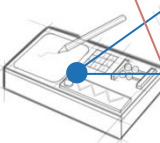
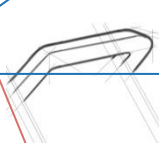
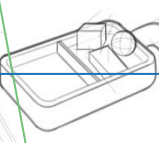
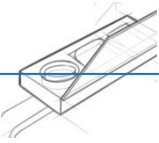
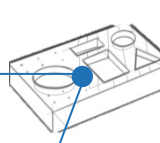
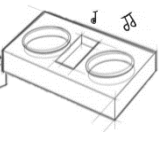
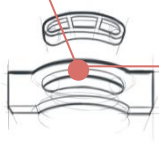
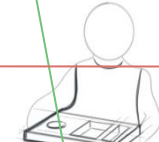
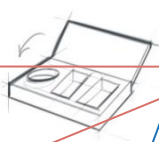
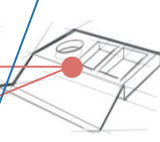
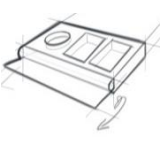
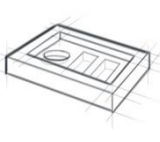
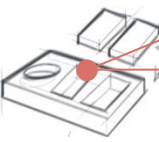
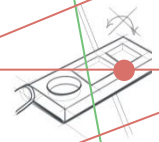
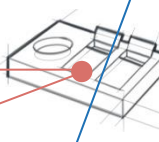
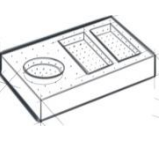
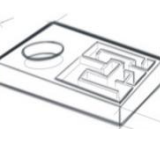
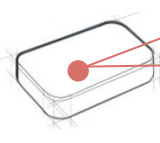
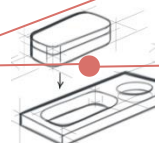
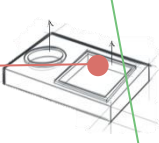
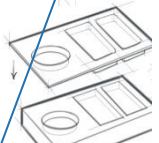
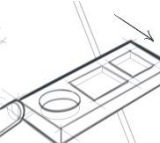
Convenience. The idea direction convenience addresses ease of use. The user research found that the biggest challenge parents experience while feeding their child in the stroller is the mess the child causes. In addition, throwing food on the floor and cleaning the stroller were mentioned several times as challenges. When asking for features for a new product, convenience is mentioned several times. These include ease of cleaning. Within this direction the focus is on reducing the mess, easy to clean, adding few additional steps. This direction also addresses the easy reuse of the product for other purposes.

Playful. The third direction focuses on a playful experience for the kid. The research question addresses promoting fine motor skills and independence. With the help of playful experiences, both fine motor skills and independence can be promoted. In addition, parents in the user research responded positively about adding an element of learning. In addition, a playful experience gives an extra dimension to the product, a second function. This direction mainly addresses the promotion of fine motor skills and independence.

4.4 Morphological chart

A morphological chart is made of all the generated ideas to structurally create concepts. For each idea direction a line is drawn that links to different ideas, these ideas can be combined into a concept. Ideas are selected by idea direction, the ideas should fit within the idea direction, be compatible with each other and form a product that can hold food and a cup. The table on the next page (Table 3) shows the Morphological chart. The direction health is depicted with the color green, convenience with red and playful with blue. It is decided not to choose the extreme ideas, think for example an integrated bib since Joolz stands for minimalistic solutions.

Table 3: Morphological chart

	Idea 1	Idea 2	Idea 3	Idea 4	Idea 5	Idea 6
Store food						
	Dividers	Three parts	Different compartments	Turn modules	Attach shapes	Extendable
Store bottles						
	Snap in	Holes for handles	Fabric	Adjustable	Aperture	Flexible parts
Existing products						
	Adjustable slots	Adhesive tray	Interchangeable inserts	Universal clips	Customizable dividers	Universal grooves
Standalone						
	Reusable container	Usable with highchair	Snack table	Picnic set/school bag	Gardening station	Art easel
Repurpose						
	Play/art station	Bumper bar	Toy holder	Organizer	Sensory play area	Music station
Reduce mess						
	Push against legs	Insert compartment	Integrated bib	Lid	Lid + clothing protection	Unfold napkin
Reduce throwing food						
	Raised edge	Lids	Non-tilting	Small access lid	Non-slip surface	Game to distract
Easy to clean						
	Smooth surface	Separate container	Removable inserts	Disposable liner	Cleaning kit	Completely dishwasher safe

Fine motor skills						
	Knob/ button/ key	Small compartments	Lids/ play, draw lid/ sliding lid	Puzzle	Velcro/zipper/ buttons	Texture/color/ shape variety
Independence						
	Compartments	Easy access	Self-arrangement	Customization	Preparation station	Route
Keep food fresh						
	Insulated tray	Cooling element	Sealed compartments	Moisture control	No uv transmission	Separate compartment
Features						
	Utensil holder	Wipe dispenser	Toy attachment	Art panel	Phone tablet holder	Sunshade
Nutritious meal						
	Pictorial nudges	Tableware size	Shaped snacks	Separate portions		

4.5 Concept generation

Concept generation is achieved using the morphological chart. The three colored lines, in the morphological chart, link different ideas to form three concepts. Within this section, a quick sketch and user scenario of the three concepts is created, highlighting the three idea directions. Using the concept generation, the idea direction becomes visual and three clear directions emerge.

4.5.1 Health

The concept of health (Figure 50) combines several ideas that focus on healthy eating. First of all, it uses two separate compartments that can be kept in the refrigerator to keep the food fresh. In addition, the compartments are insulated, which, like the airtight lids, also helps keeping the snacks fresh. Also, the idea of customization is combined with pictorial nudges to encourage healthy eating. Lastly, partitions can be found in the compartments, these encourage healthy eating, considering the food can be presented in separate portions.

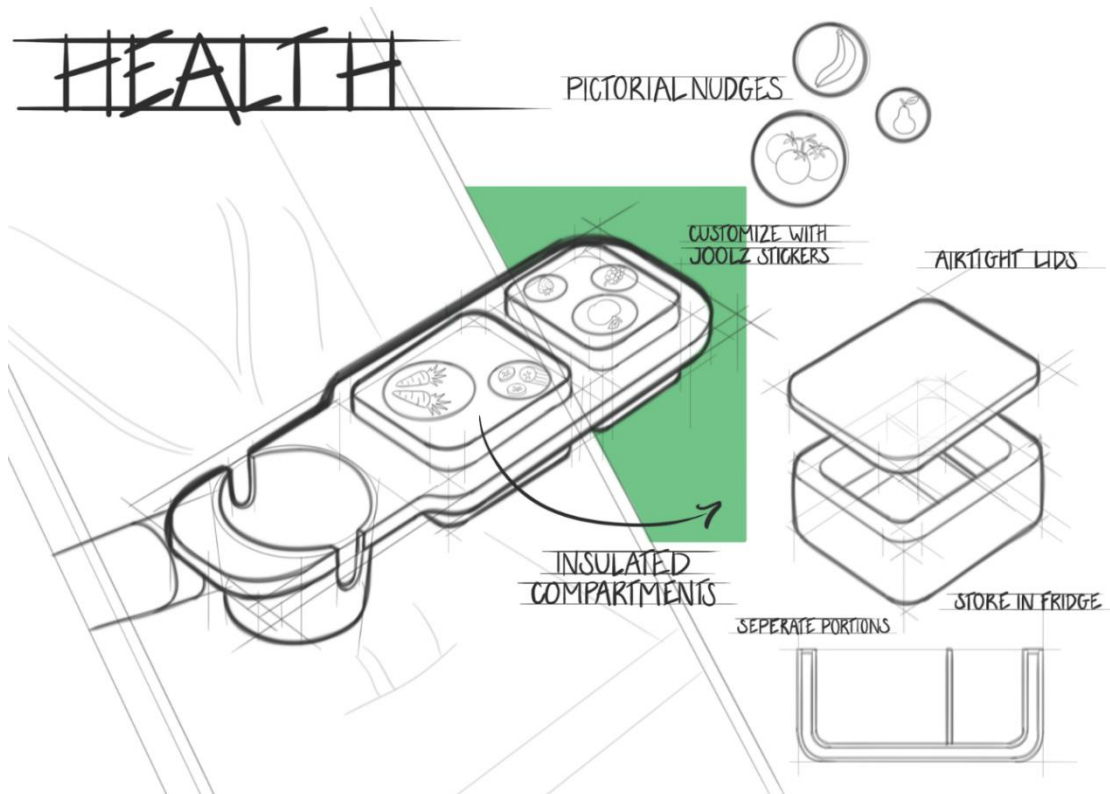


Figure 50: Concept 1 Health

The image below (Figure 51) shows a user scenario of the concept of health, discussing how the use of the product is envisioned.

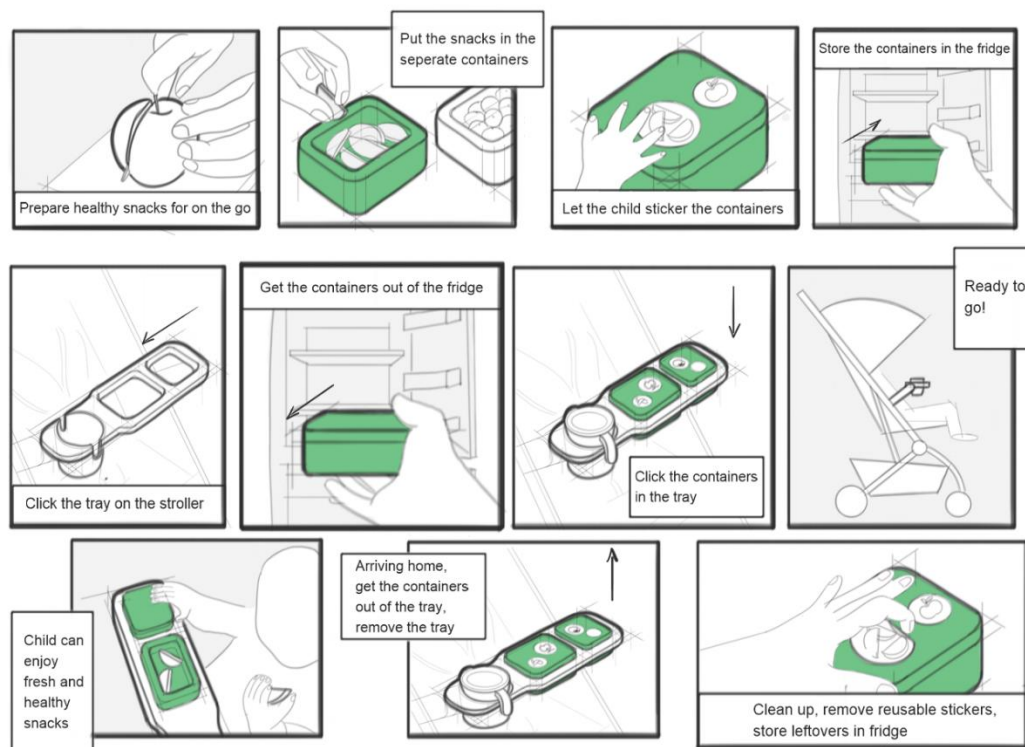


Figure 51: User scenario concept 1 Health

4.5.2 Convenience

The convenience concept (Figure 52) combines several ideas that focus on ease of use, especially the ease of cleaning the product. First, a separate compartment is also used in this concept, this compartment can be put in the dishwasher for convenience. In addition, this allows the product to be completely flat so it can be easily wiped clean. Also, the product cannot tilt, which can prevent mess. In addition, the concept includes a lid that can be folded towards the child to protect the clothes and stroller from messes while eating and using the product. Lastly, the separate compartment has an insert where the child has to make an effort to grab the food which could help against food sliding and throwing away food.

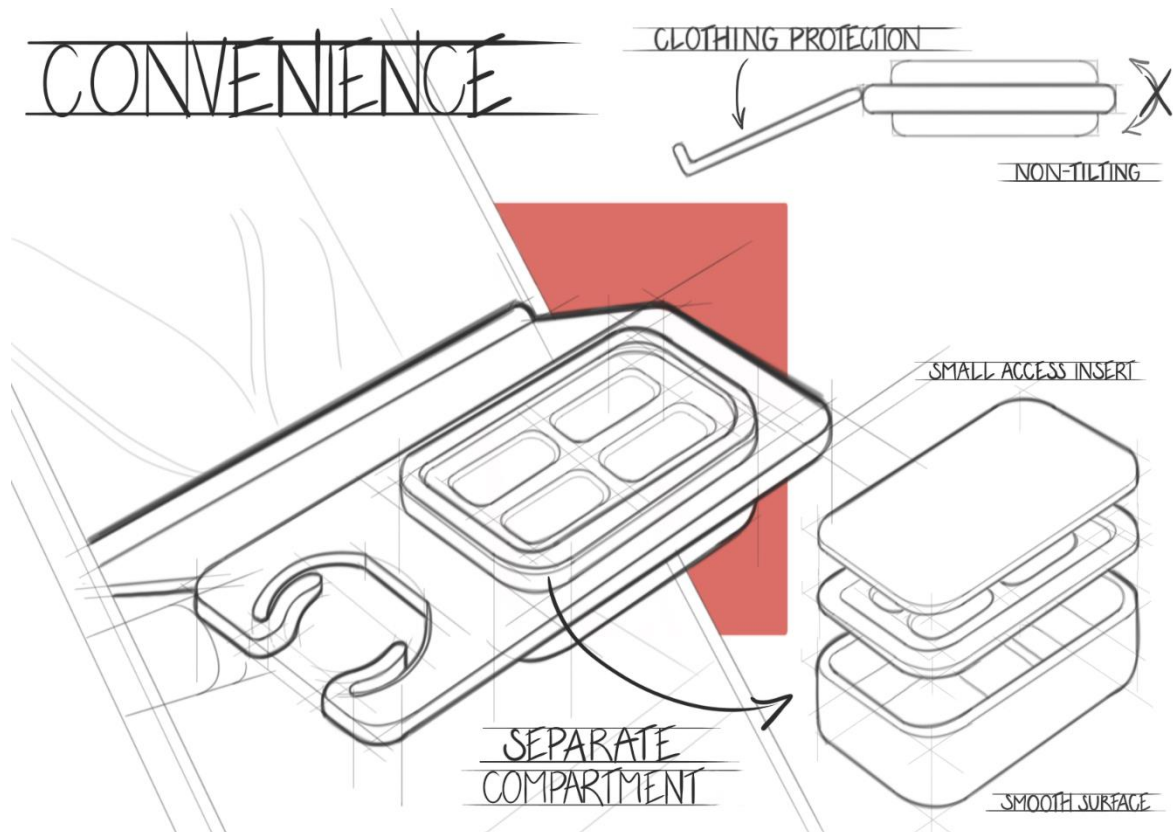


Figure 52: Concept 2 Convenience

The image on the next page (Figure 53) shows a user scenario of the convenience concept, addressing how the use of the product is envisioned.

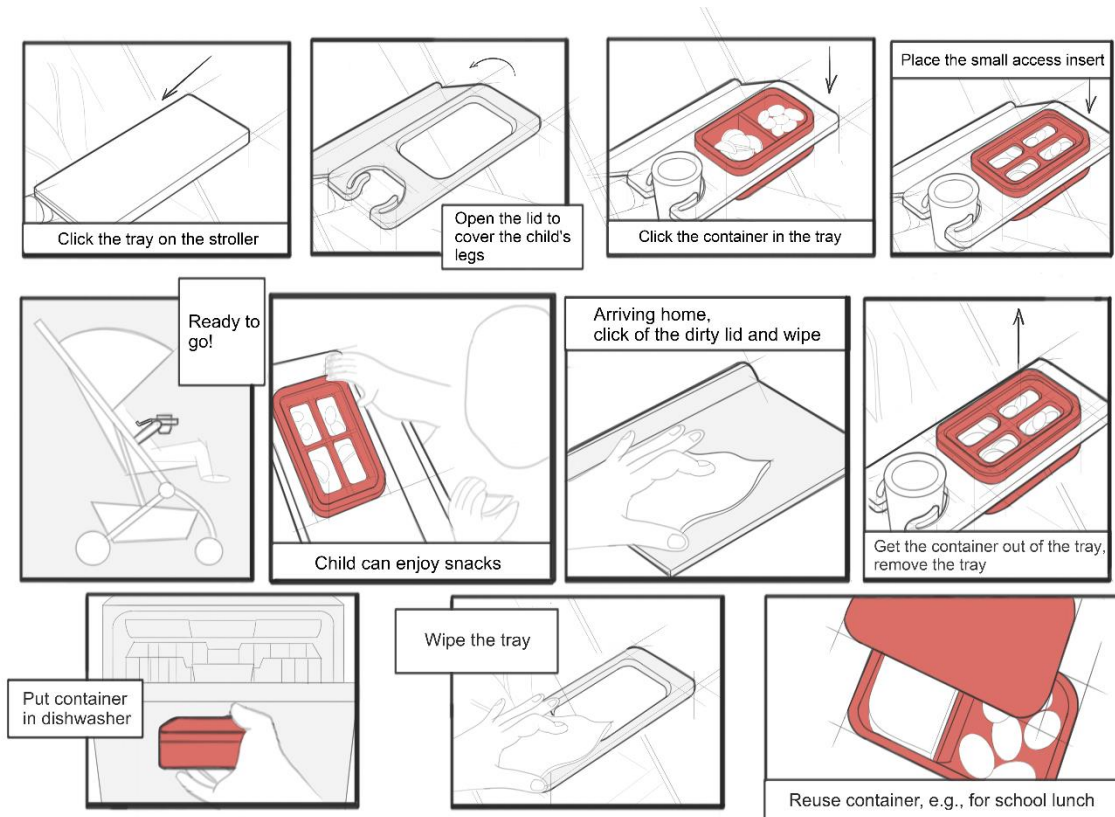


Figure 53: User scenario concept 2 convenience

4.5.3 Playful

Within the concept of playful, a playful experience for the child is priority (Figure 54). Using play, promoting fine motor skills and independence also becomes part of this concept. The concept contains two layers, which can be slid apart. The bottom layer contains small compartments, to practice pincer movement, in different shapes. In addition to shapes, the layer contains textures and colors, in short it is a sensory play layer. The lid contains a toy attachment point, from which a small toy for the child can be attached. Lastly, the child can self-arrange different games on the lid. In addition to eating, the child can make sensory discoveries and play games with this concept.

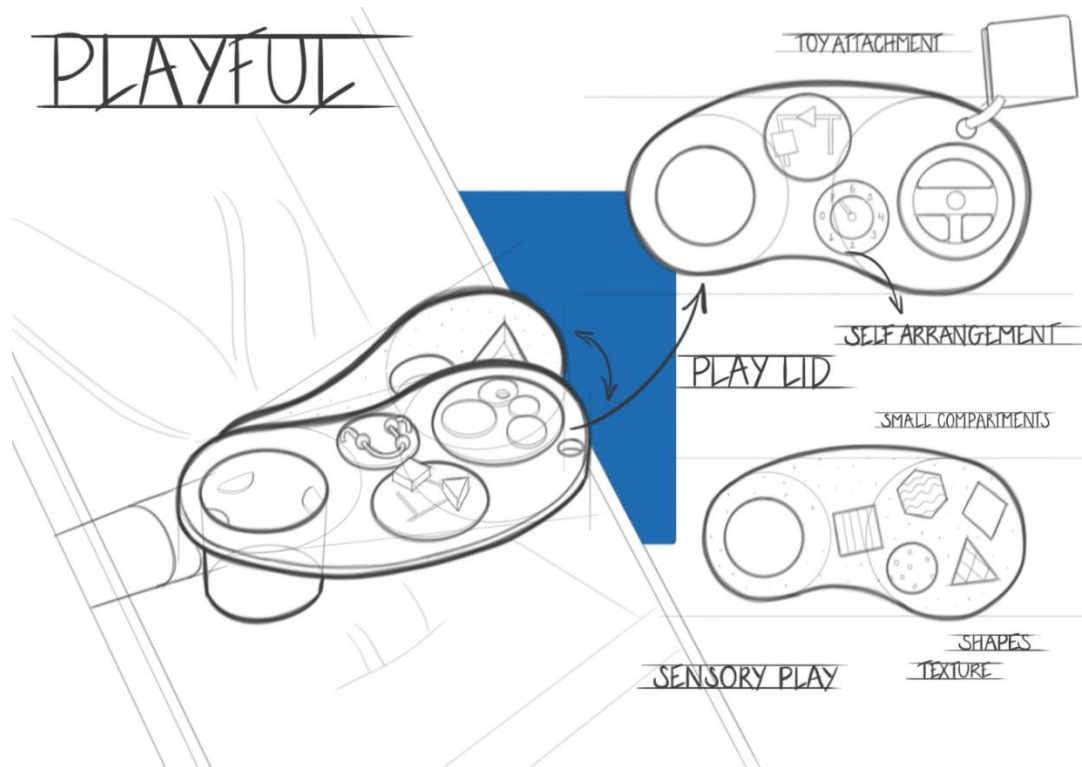


Figure 54: Concept 3 Playful

Figure 55 shows a user scenario of the concept of playful, discussing how the use of the concept is envisioned.

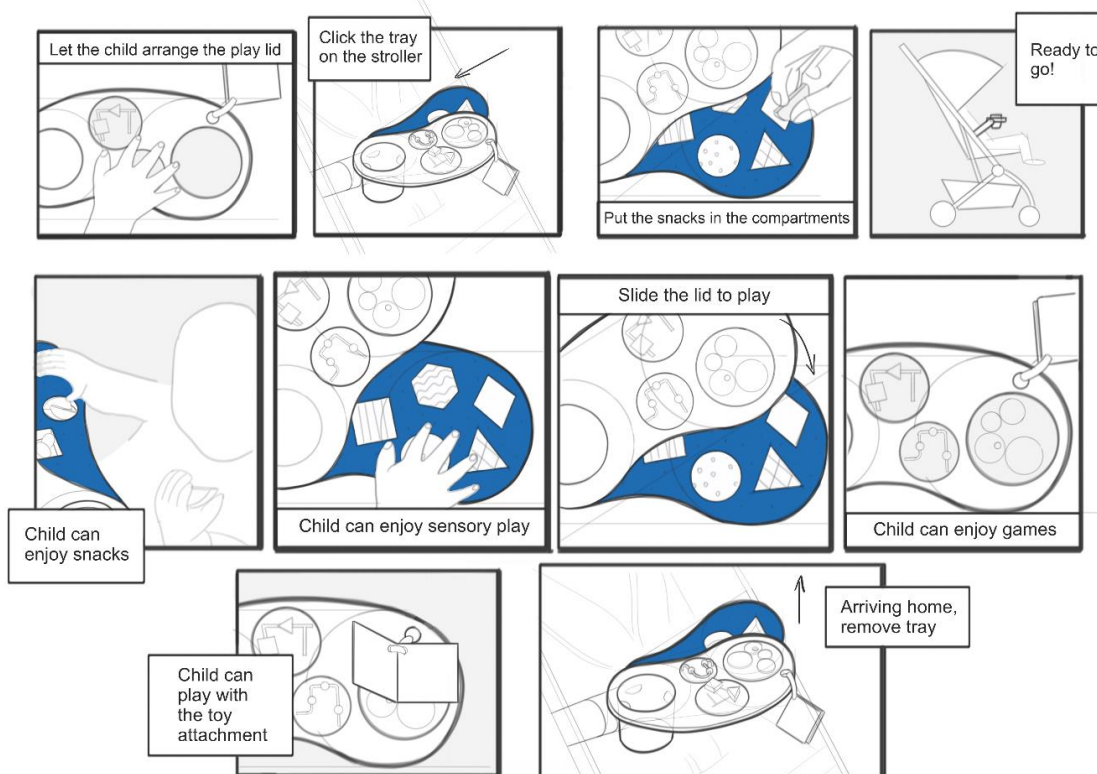


Figure 55: User scenario concept 3 Playful

Chapter 5. Discussion and conclusion

Within this chapter, a conclusion is provided focused on the entire project. This conclusion addresses the research question and makes an attempt to answer it.

5.1 Discussion

In essence, underlying project consists of two dimensions. The first dimension involves conducting research on children's fine motor skills and independence. The second dimension involves designing a snack tray for Joolz. That snack tray should take into account the research on fine motor skills and independence, but also consider two additional factors. It must fit the design language of Joolz and must fit the Aer+ stroller. In this discussion, different aspects of the process will be addressed individually.

5.1.1 Research on fine motor skills and independence

Research was conducted on promoting fine motor skills and independence in children through a literature review. This method has proven suitable for finding much information on the subject. The research contributes to the literature as it provides an overview regarding the promotion of fine motor skills and independence for a very specific target group, namely children from 1 to 4 years old. Having this specific target group made the research more difficult because much of the literature was not specifically written for it. Simultaneously, it was pleasing to have a specific target group, as this provided the opportunity to deep dive and get a great deal of grip on prevailing doctrines. This may not have been possible if the focus area had been larger.

However, it did prove difficult to extract concrete and practically useful guidelines from the literature. The literature hardly provides any concrete points that parents or teachers can immediately work with to promote fine motor skills or independence, but rather looks at the broader scientific picture in an observational manner. This meant that the link between the scientific literature and a possible practical solution had to be made on one's own. It would have been possible to contact someone who works extensively with children in this target group. This could, for example, be someone who coaches parents and children to support development. In that case, however, there is a risk of a one-sided picture that is strongly colored by the principles of the person being interviewed. But the fact that a link had to be established oneself is not highly problematic now that it is understandable that the promotion of fine motor skills and independence is not a fixed fact and can vary according to the circumstances of the case.

5.1.2 Interviews with parents

To conduct research on how parents feed their children in a stroller, several interviews were conducted. Interviews provide an opportunity to get in-depth information quickly and to ask further questions. The purpose of the interviews was to find out parents' experiences, problems and needs. It was found that all parents took plenty of time and made an effort to give a good picture of feeding a child in a stroller. The interviews were therefore of great value. They provided an excellent starting point and ensured a much better understanding of feeding children in a stroller throughout the process. Interestingly, some parents had negative preconceptions about the point of using a snack tray.

In conducting and processing the interviews, it quickly became apparent that many individuals experienced the same problems. As a result, a red line was quickly drawn and the findings could be used directly to create a product that broadly meets the needs and expectations of parents and children.

5.1 Conclusion

This project aimed to answer the central question of how Joolz can empower parents to promote fine motor skills and independence during nutritious meals for children aged 1 to 4 in a stroller. The answer to this question leads to a redesign of the current snack tray of Joolz. This new snack tray is designed

with the promotion of fine motor skills and independence in mind, but also had the objective to better fit the design language of Joolz and to fit the Aer+. In doing research on the current snack tray, two other problems were also identified. The first was that the tray does not sit at an ergonomic height, preventing the child from seeing the food. It was also found that cleaning the product is inconvenient.

After conducting an extensive literature review, it can be concluded that several strategies can be used to promote fine motor skills and independence. Regarding fine motor skills, the stage a child is in should be considered so that depending on that, the right age-specific movements can be trained within a systematic and consistent approach. For example, offering small foods can help a child learn pincher movements. There are also several strategies for promoting independence, including offering choices, for example, regarding what the child wants to eat.

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Appendices

Appendix A Karjalainen

Using the Karjalainen method, designing for visual brand recognition, typical explicit features and design lines were uncovered. Within this study, Joolz's two newest strollers, the Geo3 and the Day5 were analyzed for explicit features. These two strollers exude the Joolz style. The images below show this research. Recurring features include small fillets, angular lines, Joolz logo, big roundings and continuous lines.





Appendix B Competitor snack trays

Within this section, the snack trays of competitors of Joolz are discussed. Going into the price and advantages and disadvantages of the individual snack trays. The advantages and disadvantages were determined from product specifications and customer reviews.

Bugaboo

The Bugaboo tray has a cup holder, a compartment for snacks and a sliding lid (*Bugaboo Tray Black* | Bugaboo, n.d.). Consumers pay €54.94 for this product. The product attaches to the stroller with a single snap connection, making it easy to attach and remove. In addition, the product is compatible with many Bugaboo strollers and dishwasher safe. The angle can be rotated, allowing the tray to be pushed to the side so the child can get in and out of the stroller. Disadvantages of this tray are that the tray does not function as a bumper and thus the child cannot hold onto anything, as well as the fact that customer reviews show that the product is easy for children to unclick.



Bugaboo tray

Price: € 54,95

Pros and cons

Pros:

- + Easily attachable and removable
- + Modular
- + Dishwasher safe
- + Adjustable angle

Cons:

- Kid does not have a bumperbar
- Easy for kid to click of

Cybex

Cybex sells a snack tray with three compartments, a large bowl, small bowl and a deep bowl or cup holder (*CYBEX Snacktray - Black in Black*, n.d.). The price of the product is €59.95. The product attaches to the stroller with two snap connections, on both sides of the stroller. This click connection makes the product easy to attach and remove, but this also means that the child can click the tray off without much effort. An advantage of this tray is that it also acts as a bumper bar and a child can hold onto it.



Cybex snacktray

Price: € 59,95

Pros and cons

Pros:

- + Easily attachable and removable
- + Also functions as a bumper bar

Cons:

- Easy for kid to click of

UPPAbaby

UPPAbaby sells its snack tray for €55 and it includes a cup holder and a compartment for snacks (UPPAbaby *Snackblad*, 2023). The tray has the advantage that it also functions as a bumper bar and it is dishwasher safe. In addition, this product is not easily clicked off the stroller by the child. Another plus is that the snack tray can stay on the stroller when folding the stroller. A downside is that this tray is less easy to attach and remove because it is not a click connection but works with a bracket.



UPPAbaby Snack Tray

Price: € 55

Pros and cons

Pros:

- + Also functions as a bumper bar
- + Dishwasher safe
- + Not easy for a kid to click of
- + Let it sit while folding

Cons:

- Not easily attachable and removable

Easywalker

The following image shows the Easywalker snack tray, which consists of two compartments for snacks and a cup holder (Easywalker | *Accessory | Food Tray*, n.d.). The product is €29.99 and easily attaches to the bumper bar. This means the child still has a bumper bar to hold onto. In addition, the product is dishwasher safe and modular. The product can be clicked onto a variety of Easywalker strollers. One drawback is that the product is easy for a child to remove.



Easywalker Food tray

Price: € 29,99

Pros and cons

Pros:

- + Easily attachable and removable
- + Kid still has a bumper bar
- + Dishwasher safe
- + Modular

Cons:

- Easy for kid to click of

Maxi-Cosi

The Maxi-Cosi tray has a cup holder, a compartment for snacks and space to store other products such as toys and packaged food (*Maxi-Cosi Lila Tray*, n.d.). Consumers pay €35 for this tray, The product attaches to the stroller with two simple snap connections on the sides of the stroller, it is a replacement for the bumper bar. An advantage of this product is that it can remain in place when the stroller is folded. A disadvantage to this product is that the child can easily click the tray loose.



Maxi-Cosi Lila Tray

Price: € 35

Pros and cons

Pros:

- + Easily attachable and removable
- + Also functions as a bumper bar
- + Let it sit while folding
- + Extra space to store things (toys, food)

Cons:

- Easy for kid to click of

Nuna

Nuna's snack tray sells for €35 and includes a cup holder and a compartment for snacks (*Nuna Mixx™ Series Child Tray*, n.d.). The product attaches to the stroller with a single click connection. A disadvantage of this is that the child can easily click the product loose. Another disadvantage is that the product sits on one side of the stroller and therefore the child has no bumper bar or anything to hold

onto. However, the angle of the product can be rotated which makes it easy for the child to get in and out.



Nuna child tray

Price: € 35

Pros and cons

Pros:

- + Easily attachable and removable
- + Adjustable angle

Cons:

- Kid does not have a bumperbar
- Easy for kid to click of

Stokke

The following image shows the €39 Stokke snack tray (*Stokke Kinderwagen Snack Tray | Accessoires, n.d.*). The snack tray has two compartments, one deep and one shallower. The product attaches to the stroller with one click connection, making it easy to attach and remove. In addition, the angle of the tray is rotatable which allows the child to get in and out easily. Disadvantages of this tray are that it is easily unclipped by a child and the child does not have a bumper bar.



Stokke Snack Tray

Price: € 39

Pros and cons

Pros:

- + Easily attachable and removable
- + Adjustable angle

Cons:

- Easy for kid to click of
- Kid does not have a bumperbar

Thule

Thule sells a snack tray with two compartments, one of which can be used as a cup holder (*Thule Stroller Snack Tray, n.d.*). The price asked for the product is €54.95. A plus is that the product is easy

to attach to the stroller by means of a simple click and therefore also easy to remove. In addition, the whole product can be put in the dishwasher. Disadvantages of this snack tray are that it can be easily removed by the child and it does not have a bumper bar.



Thule stroller snack tray

Price: € 54,95

Pros and cons

Pros:

- + Easily attachable and removable
- + Dishwasher safe

Cons:

- Easy for kid to click of
- Kid does not have a bumperbar

Appendix C Purchasing behavior of expectant parents

The images below show the budget expectant parents have to spend per category (Aantjes, 2023). The budget for each category is divided into three ranges, within which you can see what percentage of the respondents have to spend. In addition, the percentage of expectant parents planning to buy products in that category can be seen.

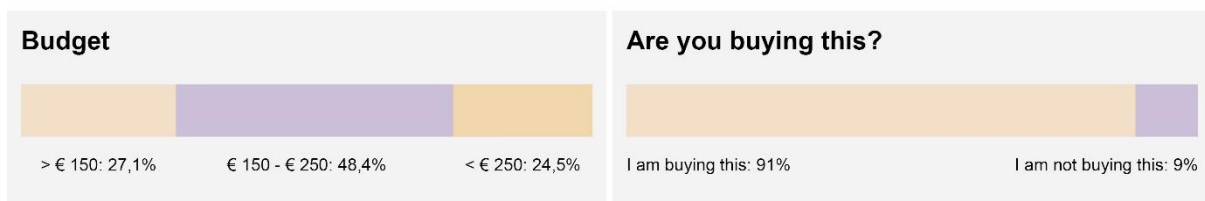
Stroller



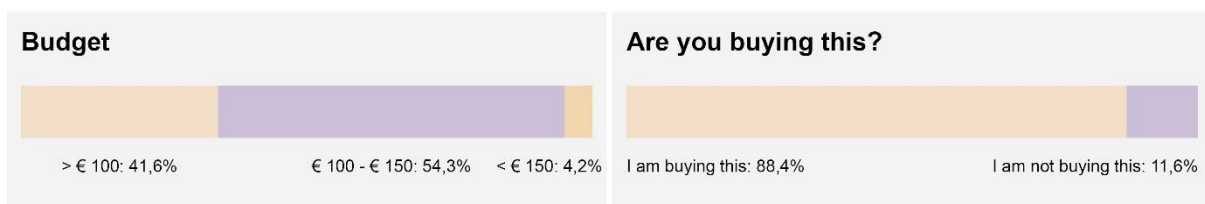
Baby room



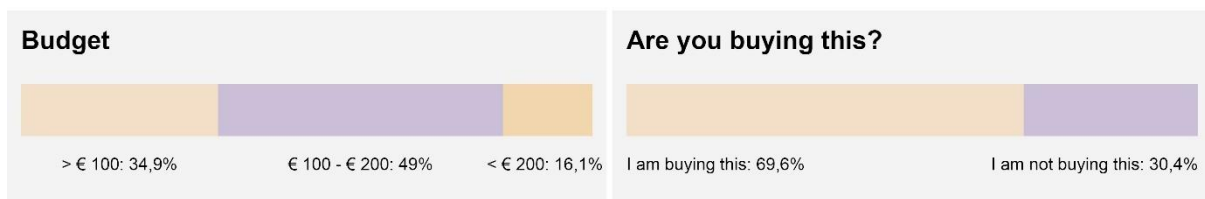
Car seat



Baby monitor



Pumping unit



Appendix D Interview questions Brecht Daams

Ik ben Niene Keizer student Industrial Design Engineering aan de Universiteit van Twente. Momenteel ben ik bezig met mijn afstudeerstage bij Joolz. Binnen mijn stage ga ik bezig met het ontwerpen van een product om de fijne motoriek en zelfstandigheid van kinderen van 1 tot 4 jaar te bevorderen tijdens voedzame maaltijden/snacks in een kinderwagen. In dit interview wil ik graag informatie verzamelen over de ergonomie van een kind.

Eetgewoonten kinderen 1 tot 4 jaar

1. Hoe eet een kind? Is er een verschil in de manier waarop volwassenen eten?
2. Zijn er specifieke ontwikkelingsmijlpalen die van invloed zijn op de manier waarop kinderen tijdens de maaltijden met voedsel omgaan

Zitpositie tijdens het eten

3. Wat is de beste zitpositie voor een kind tijdens het eten?
4. Hoe beïnvloeden de grootte en proporties van een kind de keuze van de zit- en tafelhoogte voor een optimale ergonomie tijdens de maaltijd?

Ergonomie en fijne motoriek

5. Welke rol ergonomie speelt bij het bevorderen van de fijne motoriek bij jonge kinderen? (gezien mijn onderzoeksvraag ook ingaat op het bevorderen van fijne motoriek)

Dit was mijn laatste vraag wilt u nog iets toevoegen?

Appendix E Interview questions user research

Ik ben Niene Keizer masterstudent Industrial Design Engineering aan de Universiteit van Twente. Momenteel ben ik bezig met mijn afstudeerstage bij Joolz. In dit interview wil ik graag informatie verzamelen over uw ervaringen en behoeften bij het voeden van uw kind in een kinderwagen.

Introductie

1. Zou u allereerst willen vertellen wie u bent? (geslacht, leeftijd, aantal kinderen, kinderwagen)
2. Geeft u uw kind eten in een kinderwagen?
 - a. Wat is de reden hiervoor?
3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?
 - a. Wat is de reden hiervoor?
 - b. Als iemand een product heeft:
 - i. Wat voor product heeft u? Merk?
 - ii. Hoe bevalt het product?
 - iii. Ervaart u problemen?
 - iv. Mist u een functionaliteit?
 - v. Kunt u positieve punten benoemen?
 - vi. Wat vindt u van de positionering van het product?
 - vii. Zijn er nog andere dingen die u zou veranderen?

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?
 - a. Hoe eet uw kind in een kinderwagen?
 - b. Welke maaltijden neemt u mee voor uw kind onderweg?
 - c. Overweegt u gezonde maaltijden?
6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?
 - a. Zowel wat betreft de fysieke als ontwikkelingsaspecten
7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?
8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
 - a. Kunt u een specifieke situatie delen waarin u zich extra gesteund zou voelen tijdens het voeden van uw kind onderweg?
 - b. Hoe denkt u dat Joolz hieraan kan bijdragen?
9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?
 - a. Kenmerken waardoor een product naadloos in uw dagelijkse routine past
11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Appendix F Thematic analysis interviews

To quantify interviewees' experiences and needs, the coding methodology Thematic Analysis is used (Braun & Clarke, 2006). This method identifies, analyzes and reports patterns from the data collected. This coding methodology consists of six steps followed sequentially.

1. Familiarizing yourself with your data: developing a thorough understanding of the data by writing it down and reading it repeatedly.
2. Generating initial codes: within this phase the initial codes of the data are created. All relevant information in the interviews is annotated with short codes.
3. Searching for themes: once all information is coded and collected (phase 2), broader patterns and overarching themes can be identified in the coded data.
4. Reviewing themes: the identified themes are reviewed for coherence by examining the data and codes.
5. Defining and naming themes: each theme is analyzed and labeled to accurately represent data.
6. Producing the report: the themes and codes are compiled into a coherent document.

Appendix G Interview results

Interview 1

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: vrouw

Aantal kinderen: 1 kind van 20 maanden

Kinderwagen: een grote kinderwagen en een buggy (sinds ik een buggy heb, gebruik ik deze voornamelijk)

2. Geeft u uw kind eten in een kinderwagen?

Ja, ik geef haar het meest van de tijd snacks in de buggy. Het is een handig iets om te doen, vooral praktisch.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/ onderweg?

Toen ze jonger was had ze meer support nodig en het is goed, maar soms ligt ze teveel waardoor het een beetje een troep wordt. Dat maakt het misschien moeilijker voor haar te slikken omdat ze niet 100% recht zit.

Het is over het algemeen wel handig om je kind eten te geven in een buggy en wanneer je onderweg bent. Het is denk ik ook wel een gebruikelijk ding om te doen. Ik heb altijd wel iets zoals een snack mee zodat ik het aan haar kan geven.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Ja, voor mijn andere kinderwagen had ik soms een food tray en dat was wel handig, want dan deed ik daar gewoon een aantal dingen in en dan kon zij dat gewoon zelf pakken. Maar de buggy heeft dat niet dus geef ik haar zelf de dingen, de koekjes. Ook bijvoorbeeld als ik haar de verpakking geef dan gooit ze dat gewoon ergens naar toe. Daarom geef ik haar liever zelf het eten als ze iets wil.

Voor het water drinken gebruik ik van die bekers die als je ze op de kop doet geen water lekken, uit gemak.

Andere producten, misschien een slabbetje, wanneer het iets vloeibaars is en ik denk dat het een troep kan worden dan doe ik haar een slabbetje om of gewoon een doek. Om te voorkomen dat het vies wordt.

En een tas waarin ik alle snacks kan bewaren of het eten voor mijn kind. Ze heeft geen flesje meer nodig, maar een tas is ook handig om je flesje in te doen, dat je hem direct bij je hebt als je onderweg bent. Daarvoor is een tas ook handig.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Ik heb niet een typische routine maar als het een paar uur geleden is dat ze eten heeft gehad, dus dan heeft ze honger en dan geef ik haar iets. Maar het is ongeveer houden aan haar normale eetroutine. Dus ongeveer 2-3 uur geef ik haar iets te eten. En als ze in de buggy is kan ze daar wat eten.

Wanneer ze in de buggy zit en we onderweg zijn geef ik haar vooral snacks of ik maak iets thuis klaar voor haar zoals kleine pannenkoekjes. Of ik geef haar een klein broodje en dan geef ik dat aan haar.

Maar een hele maaltijd is gewoonlijk niet in de kinderwagen. Maar soms als we naar een restaurant gaan en ze geen kinderstoel hebben kan ze soms in de buggy blijven zitten en daarin eten.

- a. Overweegt u gezonde maaltijden?

Ik probeer de snacks gezond te houden, maar het is ook zo dat als ik onderweg ben dat ik meer praktisch probeer te zijn. Dus ik koop gewoonlijk, klaargemaakt eten, zoals snacks, rijstcakes of ik probeer haar organische broodcakejes te geven. En maissnoepjes en linzen, groente knabbels. Er is ook een merk wat ik vaak heb voor kinderen wat vooral gezonde snacks heeft. Groenteknabbels en groentekoekjes heb ik gewoonlijk wel mee in mijn tas en dan geef ik haar dat. En ook van die fruitzakjes zijn heel handig, maar dat zijn ook de dingen die overal terecht komen.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Ik geef haar ook wel snacks die ze zelf kan vasthouden en eten, zoals koekjes. Bijvoorbeeld nu met het koude weer als ik haar nu een koekje geef wil ze geen handschoenen dragen en dan heeft ze koude handen buiten met het koekje in haar hand.

Maar ook als iets vloeibaar is of een fruihapje (fruit smoothie) wordt het een troep. Ik vind het fijner als ze een koekje ofzo eet dan bijvoorbeeld dat fruit ding wat je kan knijpen en dan moet slikken, want dat komt overal. Ze is gewoon nog niet zo handig dus ik weet niet of het echt aan de kinderwagen ligt. Als ze knijpt en het is uit haar mond dan komt het gewoon overal. En dan wordt de kinderwagen vies, de koekkruimels komen in de voetenzak en in haar kleren, dat maakt niet zoveel uit want dat kan je gewoon wassen, maar ook de kinderwagen wordt helemaal vies. Dus dan moet je soms de stofzuiger gebruiken.

Ook niet genoeg handen hebben, maar ja dat is algemeen voor ouderschap. Je moet bijvoorbeeld in de bus, je moet inchecken en de buggy er in rijden en dan haar een snack geven en haar drinken geven. Dus het is echt alles tegelijk doen, maar dat gaat ook over andere dingen dan eten geven.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Soms omdat ze nu heel graag de wereld wil ontdekken, wanneer ik haar in de buggy stop, soms vindt ze dat niet leuk dus dan geef ik haar een koekje als ik haar in de zitting zet. Dan blijft ze wel blij met haar snack.

Ze is tegenwoordig ook meer bewust van de omgeving dus als ik bijvoorbeeld bij de Jumbo kom en door de fruit afdeling loop, vraagt ze voor dingen bijvoorbeeld een banaan. Dus ik doe dan soms ook een banaan.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Iets waarmee een deel uit mijn handen kan worden genomen. Ik denk nu aan een food tray voor de buggy, zou misschien handig zijn. Ook omdat ik het gebruikte op mijn kinderwagen en het kan heel handig zijn, want je kan daar de waterbeker en het eten wat ze eet in doen.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Ik laat haar wel dingen zelf doen, maar dat zorgt er ook voor dat het een troep wordt. Toen ze jonger was had ik altijd een lepel mee om een fruithapje (knijpfruit) op te doen en haar te geven. Maar dat was toen ze jonger was, nu is ze iets groter en een beetje zelfstandiger dus kan ze dat zelf doen. Maar ja daarom is het ook een troep. Laatst had ik een discussie met haar want het eten zat overal en ik probeerde haar uit te leggen dat ze eerst haar mond moet open doen en daarna moet knijpen maar die coördinatie heeft ze nog niet.

Ik zou zeggen dat het een combinatie is van haar zelfstandigheid geven maar soms is het praktischer en makkelijker om haar te helpen.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Iets waarop een waterbeker op kan worden gezet en iets waarop haar eten kan worden gezet. Dus ik zou zeggen een kleine tray. Misschien iets om snacks in te bewaren.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Kinderen vinden het leuk om spulletjes erin en eruit te doen, of als er een dopje is om het open en dicht te doen. Dus misschien is er zoiets als een tray en is er een optie om een vakje te hebben met iets dat open en dicht kan. Ik denk dat dat handig en praktisch kan zijn, omdat je er iets in kunt opbergen, maar het is ook interactief.

Interview 2

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Leeftijd: 38 jaar

Geslacht: vrouw

Aantal kinderen: 2 kinderen, eentje in de leeftijd van 5,5 en eentje van een jaar

Kinderwagen: Ik heb een grootte wagen, ook vanaf de eerste al

2. Geeft u uw kind eten in een kinderwagen?

Ja, maar niet heel veel. Ik doe het wel maar wel zo beperkt mogelijk, omdat je wil dat de wagen zo lang mogelijk schoon meegaat.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Ik kies de momenten uit wanneer ik ze eten geef. Ik kies dan ook wel wat makkelijk te verwijderen is en wat geen vlekken geeft. Dus dat is wel de hoofdmoot dat ik mijn kind voedt in de kinderwagen.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Niet echt, een flesje, maar verder dan dat eigenlijk niet.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Ik probeer het eigenlijk wel zo te plannen dat ik ze gegeten al in de wagen heb. Waardoor je dat eetmomentje in de kinderwagen over kan slaan. En dat heeft er mee te maken dat het in de wagen gewoon heel snel knoeiboel wordt, hij kan natuurlijk wel gewassen worden, maar hoe minder mooi de wagen blijft. Dus ik probeer dat eigenlijk wel te vermijden op voorhand.

Als je bijvoorbeeld ergens wat gaat drinken dan kan zij gewoon in de wagen aan tafel blijven zitten. Het is ook een beetje afhankelijk wat je dan gaat eten, dus als het dan heel snel knoeiboel wordt, zou ik haar uit de wagen halen om in een stoeltje te zetten. Maar als het gewoon beperkt is dan zet ik haar gewoon met wagen en al aan de tafel.

Ik geef haar droge dingen, zoals een boterham of een cracker of een appeltje. Maar bijvoorbeeld niet banaan of smeerbare dingen. Kijk een boterham wordt al vrij snel besmeerd dus liever geen pindakaas of dadels erop in de wagen. Met name droge dingen. Ik hou wel rekening met gezonde dingen.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Met name de knoeiboel, dat zal wel echt de hoofdreden zijn dat ik niet veel voedt in de kinderwagen.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Het is een beetje afhankelijk van de levensfase, er zitten periodes tussen dat het prima gaat maar ook dat je echt even rustig een plekje moet zoeken. Maar in de regel nemen wij wel de tijd, dus ook al worden ze afgeleid dan vinden wij dat niet zo heel erg.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ik weet het niet zo goed. Ik vraag me wel af of Joolz hierbij kan bijdragen. Kijk je ziet wel eens moeders die een kop koffie zelf drinken en daarvoor een bekerhouder hebben waar die in kan. Maar in die zin

ben ik ook wel vrij praktisch dat ik die bak onderin gebruik en dat ik me ook wel red met de wagen die hij zo is.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Ik stimuleer heel erg zelfstandigheid, ik volg zelf de Rapley-methode dat is een methode waarbij de baby vanaf kleins af aan leert eten door gewoon stukken vast te houden. In plaats van dat je ze zelf potjes voert. Het verschil met die methode is juist het kind alles zelf laten doen. En dat zal ongetwijfeld ook wel meespelen dat ik dat niet veel in de wagen doe, omdat dat een knoeiboel geeft. Kijk bijvoorbeeld een potje geven dat zal ik niet zo snel doen.

Als ik haar nu ook thuis voer of eten geef dan liggen er in een vierkante meter om haar heen direct allemaal kleine stukjes voer, omdat ze dat gewoon zit te eten en te ontdekken en te knijpen. Daardoor leren ze juist de smaak en de structuur die past bij het desbetreffende eten kennen. Alleen ja op een gegeven moment wordt het natuurlijk ook beter dat ze gewoon zelf met een lepel of vork kunnen eten.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Het moet makkelijk te gebruiken zijn, goed demontabel en makkelijk te reinigen.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ik denk dat voor mijn persoonlijke situatie niet perse omdat het leerelement al in de methode zelf zit en ik daar geen tool voor inzet.

Maar ik begrijp wel de speelelementen, dat het meer is dan alleen een eetproduct. Misschien ook wel dat ik dan wel sneller in de wagen zou eten ook omdat het op eten erop blijft liggen en dus niet in de wagen kan vallen. Waar ik een tafel heb gebruik ik dat ook om eten op te leggen, maar goed als je dat niet hebt geef je het los in de hand.

Interview 3

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: man

Aantal kinderen: een zoontje van 16 maanden, dus ruim een jaar.

Kinderwagen: we hebben eerst een grote kinderwagen gehad en daarna ook een buggy er bij genomen voor de zomervakantie.

2. Geeft u uw kind eten in een kinderwagen?

Ja, af en toe wel ja, zeker. We waren in het begin heel streng dat hij alleen in zijn stoel met slabbetje en alles daarvoor mocht eten. Maar we worden nu veel makkelijker. Tijdens het wandelen even wat eten geven.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Op zich gaat dat wel makkelijk, we hebben dan vaak of wat stukjes fruit of een boterham in een bakje. Dus dan geven we hem gewoon elke keer een hapje. Soms voeren we hem rechtstreeks in zijn mond en soms geef ik iets in zijn hand dan kan hij gewoon een beetje knagen aan een bolletje ofzo. Op zich gaat dat prima.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, we hebben geen bijpassende hulpmiddelen of iets om het eten op te doen. Komt ook omdat hij gewoon nog niet, omdat als hij zelf dingen moet pakken dan maakt hij daar een smeerzooi van. En we willen de kinderwagen toch een beetje netjes houden.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

We hebben niet echt een typische routine, maar we hebben wel twee momenten wanneer we hem voeden. Soms als we onderweg zijn en we aan het lopen zijn, hij heeft wel een beetje vaste eetmomenten dat hij zijn fruithapje moet hebben of zijn boterham of wat dan ook. Dus als we dan wat laat ergens zijn dan beginnen we alvast een beetje on the go hem te voeden. En dan doen we gewoon vaak dat ik de boterham in de hand hou en hem gewoon stukjes geef in zijn mond.

We doen ook als we een keertje een weekend weg zijn en we hebben niet de babystoel bij ons dan gebruiken we de kinderwagen echt als de voedingsstoel ook. En dan geef ik hem ook wel wat in de hand, maar ja dan mis je eigenlijk, nou ja ik heb hem eigenlijk nooit ook aan een tafel gezet. Volgens mij bij de grote kinderwagen zou je hem aan tafel kunnen aanschuiven, dat hij het zo van de tafel kan pakken. Maar bij een weekendje weg hebben we toch vaak de buggy mee en die is wat lager dus dan zit je echt wel een beetje zo te voeden. Dan doen we hem ook echt wel een slabbetje voor dat hij ook echt wel iets meer kan rommelen.

- a. Overweegt u gezonde maaltijden?

Hij krijgt alleen maar gezond voedsel, haha nee. Nou de dingen we voor hem meenemen, een fruithapje, boterham en bolletje dat soort dingen zijn allemaal gezonde dingen. Maar als wij een gebakje zitten te eten met een kopje koffie dan krijgt hij ook een stukje van de taart of wat koffieschuim, maar ja dat is niet in de kinderwagen.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Nou om de boel een beetje schoon te houden, dat is lastig. Ja verder algemeen, maar dat is meer opvoeden om hem een keer met een vork of lepel te leren eten, maar ja dat heeft niks met de

kinderwagen te maken. Dat is gewoon, zo'n kind heeft de motoriek nog niet om een lepel goed recht te houden en netjes naar zijn mond kan brengen, dus nee daar kan ik niet zoveel aan doen.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Daar hebben we op dit moment nog niet zoveel last van eigenlijk. Maar als hij chagrijnig is gooit hij thuis weleens alles op de grond.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ik denk dat een houder wel makkelijk is, maar ik ben ook bang dat hij op een gegeven moment chagrijnig is dat hij alles eruit gooit en alles alle kanten op smeert. Dus ik weet nog niet of het handig te maken is dat het gewoon een full proof product is dat het kind er gewoon makkelijk van kan eten zonder dat hij er een zootje van maakt. Maar het zou wel handig zijn een houder waar hij dingen in kan bewaren.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Soms doen we onderweg dus wel een boterham of bolletje in zijn hand dat hij dat zelf kan afhappen.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Ja ik denk dat ik zelf niet zo zeer een tafelblaadje maar een bakje waar dingen in kunnen zitten. Dus sowieso een houder voor een fles en een uitsparing of een bakje waar je wat stukjes fruit in kan leggen of stukjes boterham.

Dus iets waar die dingen uit kan pakken, nog even over die vorige, wat hij heel vaak doet is over de tafel heen vegen en dan flikkert die alles er vanaf dus het zou wel een diepbakje moeten zijn dat als hij chagrijnig is dat hij er niks uit kan vegen ofzo. Dat zou helpen.

Kwaliteit verder, geen lastige hoekjes en randjes die moeilijk schoon te maken zijn, want je wil het toch af en toe wel een keertje kunnen schoonmaken. In de vaatwasser is natuurlijk het makkelijkst, dat je het gewoon in de vaatwasser kan gooien.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ja dan, wat hij nu heel leuk vindt, maar ja dat is natuurlijk op een kind gebaseerd en afhankelijk van de leeftijdsfase. Maar hij vindt het heel leuk om klepjes of dekseltjes open te doen. Dus dat er iets van een dekseltje op zit dat hij zelf kan open en dichtdoen. Dat zou grappig zijn, dan kun je ook spelen met kleuren natuurlijk. Ja wat bestek zou ik niet echt handig vinden wat dat kun je dan laten vallen. Ja het moeten wel dekseltjes zijn die vast blijven zitten anders ben je de hele tijd dingen aan het opruimen.

Ik heb weleens van die snackplankjes gezien waar je dan schijven uit kan trekken, dat je hem zo rond kan trekken. Dat het weet ik veel, vier schijven zijn die je uit kunt trekken dat het een groter blad wordt. Een soort van klaverblad, dus afhankelijk van hoeveel ruimte je nodig hebt dat je hem dan kan uittrekken. Maar je hebt ook het risico dat je er iets op zet en hij het dan in klappt of het er van af veegt natuurlijk.

Interview 4

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: man

Aantal kinderen: Een zoontje van 15 maanden oud

Kinderwagen: Ik heb twee kinderwagens, een grote kinderwagen en een buggy. Vanaf twee weken oud gebruikt hij de buggy, wel met de cot. Vanaf begin november eind oktober hebben we de grote kinderwagen. We gebruiken ze parallel naast elkaar, dus dat we de buggy voor vakantie gebruiken en tripjes waar we met de auto weggaan, we hebben niet zo'n grote auto dus dan gebruiken we gewoon de buggy. Na vijf/zes maanden hebben we seat erop gezet.

2. Geeft u uw kind eten in een kinderwagen?

Ja, op vakanties en dat soort dingen, maar niet dagelijks.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Dat ligt er een beetje aan wat voor eten je geeft. Als het kruimelt dan wordt het een rommeltje en zeker als je dan vloeistoffen en dergelijken geeft dat is dan niet zo heel handig. Daar is hij ook nog niet oud genoeg voor, hij kan wel drinken in de kinderwagen, met zo'n antilekbeker maar dat is het dan wel zo'n beetje.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, ja, behalve dan een antidrup drinkbeker, dat is een hulpmiddel zou je kunnen zeggen.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Gewoon op een bepaalde manier even vastzetten zeg maar, meestal doen we dan alleen de heupgordel vast wel. Die sowieso, maar dan die om de armpjes niet. Dat was eigenlijk pas toen die negen maanden oud was zo'n beetje, dan zijn ze wat stabiel. Dan kan je meer rechtop zitten, dan hebben ze wat meer vrijheid. Dan kan je ook bijvoorbeeld met de kinderwagen tegen het tafeltje aan rijden zeg maar dichtbij. En dan kan hij dingetjes van het bordje zelf af pakken.

We hebben ook wel gehad dat we op vakantie waren en dat ze in het restaurant daar geen stoel voor handen hadden, maar als je hem op schoot neemt is dat ook een beetje onhandig, dan zat hij gewoon in de kinderwagen. Dan geef je hem eten aan tafel zeg maar, wat ook wel werkt, het zit wel een beetje te laag eigenlijk met de buggy.

Voor de rest als we hem dan eten geven hebben we vooral vaste dingen, zoals een boterham, brood of stukjes fruit en groente. Ook wel vloeistof eten zeg maar op vakantie, uit zo'n potje die we zelf gemixt

hadden. Dan hadden we gewoon groente op de markt gehaald enzo en dan gekookt en geblend. Dan heb je een potje mee die je uit je koelkast haalt en dan bij het restaurant met een lepel er bij ook en dan lepel je dat er zo in. Pompoen en zoete aardappel.

- a. Overweegt u gezonde maaltijden?

Hij eet bijna alleen maar gezonde dingetjes. Van die maissticks krijgt hij ook maar dat is gewoon meer voor tussendoor, dat kruimelt niet zo dus dat is echt handig.

Op een gegeven moment op vakantie dan raakte hij ook verveeld dan had hij een keer vers gemaakte pompoen gehad en als je dan babyvoedsel uit een potje geeft dan vindt hij het al snel saai, dus wel verwend.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Op het moment dat het wat meer kruimelt dan wordt het een beetje een zootje. Een ritueel dat je dan zou kunnen omschrijven is dat we hem altijd wel een slab om doen als we die bij de hand hebben. In restaurant of waar je dan eet is dat wel heel handig. Voor onderweg doen we het niet altijd als hij gewoon stukjes brood aan het eten is ofzo, dan gaan we niet helemaal een slab om doen.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

De eerste tien minuten eet hij eigenlijk wel flink door, zodra hij een beetje meer verzadigd raakt dan raakt hij steeds sneller afgeleid. Dat merk je wel, dat kan je een beetje voorkomen door de kap van de buggy dicht te doen. Maar ja als je op vakantie bent dan maakt het ook niet heel veel uit dat hij een beetje afgeleid is. We zijn daar toch niet om snel en efficiënt te eten en het naar binnen te proppen, je hebt de tijd en als hij dan een beetje afgeleid wordt dan is dat prima.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?

- a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ik denk bijvoorbeeld door dingen uit te leggen om in de kinderwagen, hoe het eten makkelijkste werkt. Of überhaupt dat je je kind wel eten kan geven in de kinderwagen. Ouders denken misschien ja lastig je moet altijd een hoge stoel hebben als je een restaurant binnen rijdt, maar dat is niet het geval. Het is natuurlijk het makkelijkst als het restaurant er een heeft, dan zet je hem even over, maar dat gaat niet altijd. Veel Joolz kinderwagens zijn ook gemaakt om hem aan tafel te kunnen zetten. Je kan dus goed de tafel gebruiken om een bordje op te zetten.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Ja, als je kijkt naar zelf een vork geven en een beetje voordoen en helpen van het prikken van stukjes eten zegmaar. Stukjes eten op hapklare brokken maken en dan met een vork, want hij gaat nog niet zitten snijden en in stukjes verdelen. Dat je promoot je dan wel, dat hij dan lerende wijs door krijgt de motoriek daarvan.

Kijk rijst eten met een lepeltje zit er nog niet in dan schept hij misschien wat rijst op en dan draait hij het lepeltje om en dan stopt hij het lepeltje in zijn mond en dan ligt de rijst natuurlijk op grond.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Antilekbeker, een bordje, denk dat het belangrijk is dat de producten op het kind geschikt zijn gemaakt. Het is leuk dat de ouder het er ook wel leuk eruit vindt zien maar als ik een vork of lepel als voorbeeld neem. Zo'n baby vork of baby lepel zijn eigenlijk helemaal niet zo handig want die motoriek is nog vrij grof, ze kunnen nog geen pincet greep doen die je wel een beetje nodig hebt. Je ziet het bij tandenborstels bijvoorbeeld wel daar zit dan zo'n enorm handvat aan, dat ze het met de hele hand kunnen pakken. Dat zie ik nog niet bij babygerei, ik geloof dat het wel op de markt is hoor. Maar dat is dan echt ontworpen voor die baby dat is dan makkelijker. Uiteindelijk moeten ze natuurlijk oefenen om dat ook met gewoon bestek voor elkaar te krijgen op die manier, met die pincetgreep te oefenen.

Maar ik denk dat het belangrijk is om eerst die opstap te maken naar simpel, omdat ze alleen maar de grove motoriek hebben. Dat in een product te vertalen, dus dat is bijvoorbeeld bij een vork. En een bij een bordje bijvoorbeeld, dat er een stevige basis onder zit dat het niet zomaar wegglijdt, antislip. Bij een super simpel bordje, doet hij een tik tegen en dan ligt het bord op de grond. Dan moet je de hele tijd het bordje vasthouden dat is niet super handig als je dan zelf zou kunnen vastzetten dat maakt het makkelijker voor de ouder. Dus ik zou op die manier denken, de baby wil ook niet perse het bord omstoten maar dat doen ze wel.

Echt kijken naar het gedrag van een baby, dus wat ze van nature doen, want je gaat een baby van een jaar afleren dat hij daar niet tegen aan tikt.

De antilekbeker vind ik daar ook een goed voorbeeld van, er zitten twee grote handvaten aan. Het is ook stoot proof, dus als je het op de grond laat vallen breekt het niet.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ja, in veel van die kinderproducten zitten allemaal kleurtjes in die ook een functionaliteit hebben. Bijvoorbeeld bij zo'n drinkbeker is de rand van de flap een andere kleur, een duidelijke kleuronderscheiding, waardoor er een verschil tussen de bovenkant en onderkant is. Hij hield bijvoorbeeld die beker de hele tijd ondersteboven en dan ging hij aan de bodem zitten drinken tot dat hij dacht dit werkt niet en nu herkent hij wat is de onderkant en wat is de bovenkant.

De vorm is denk ik niet goed af te lezen voor een baby. Sommige baby's hebben dat snel door. Je hebt bijvoorbeeld ook van die boxen met gaten er in en dan kan je daar kubussen en dergelijken in doen maar onze zoon heeft dat nog niet helemaal door. Het is vrij normaal dat ze dat vanaf één een beetje door beginnen te krijgen.

Ik denk dat het wel handig is als je er meerdere bakjes in doet dat om te splitsen door middel van kleur, wat simpeler is dan vorm te herkennen.

Interview 5

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Leeftijd: 33

Geslacht: Vrouw

Aantal kinderen: Twee kinderen, een dochter van bijna vijf en een dochter van drie

Kinderwagen: Ik heb heel wat exemplaren gehad, twee grote kinderwagens en twee buggy's, en nu nog maar één buggy, want met twee kinderen heb je op een gegeven moment niet meer twee van die dingen nodig. Dus nu gebruik ik nog af en toe één buggy, echt niet zo heel veel. Soms is het wel lekker makkelijk, als je naar de Efteling gaat ofzo of je bent de hele dag bezig dan is het lekker makkelijk om ze in een buggy te stoppen. En het blijft voor kinderen toch nog leuk op een of andere manier, toen mijn dochter vier was toen zat ze zelfs nog in de grote kinderwagen met haar zusje, vond ze enig, vond ze super leuk, ja het is een soort dubbeldekker.

2. Geeft u uw kind eten in een kinderwagen?

Ja, maar niet vaak. Het komt weleens voor dat ik de buggy meeneem als ik boodschappen doe, maar dat is echt heel weinig en vaak geef ik dan wel even snel iets te eten. Geef ik ze weleens een kaasstengel ofzo, maar echt niet vaak.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Ik denk dat iedere ouder dit wel herkent, het is hetzelfde als je een kaasstengel in een autostoeltje, het wordt een beetje rommelig. Er zitten overal van die kruimeltjes en ze gaan ook zo lekker in dat ding zitten waar je ze vast doet. Ja het zit echt overal. Maar het makkelijke is met die buggy die is zo ligt die kan je gewoon even uitschudden.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, omdat ik het niet zo vaak doe.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Ja bij mij is het dus vooral als ik naar de supermarkt ga, dan doe ik het wel. En ja, dat gebeurt nu niet meer zo heel vaak maar toen ze wat kleiner waren gebruikte ik het heel vaak als stoel als we bijvoorbeeld op een terrasje zaten ofzo, dat was met de buggy wat onpraktischer omdat het natuurlijk best wel laag is.

Ik geef geen drinken in een beker, alleen in een afgesloten beker met een rietje, want anders zit het echt overal in de buggy.

Ja en als we dus een dagje weggaan is het dus super makkelijk want dan doe ik dus alles in de buggy. Dan eten ze er in, drinken ze er in, slapen ze er in, dat is dan echt superhandig.

Dingen die ik geef in de buggy, knijpfruit, dat is makkelijk. Ja wat geef ik het meest, ja een knijpfruitje, iets drinken in een drinkfles of een kaasstengel of een kleine snack of zo.

a. Overweegt u gezonde maaltijden?

Er moet wel een beetje een balans zijn met gezond en ongezond eten, maar als wij bijvoorbeeld een dagje weggaan, wanneer we dus sneller de buggy zullen pakken, dan gooi ik dat sneller overboord. We

hebben dan een leuke dag en ik ga jou dan niet alleen maar paprika geven ofzo. En ik vind een kaasstengel ook niet heel gezond, maar ja ook niet heel ongezond. Ja ik vind ook vaak met de gezonde dingen, als je ze een appel eet, heel veel kinderen willen geen appel uit hun hand eten, dus dan geef ik dat niet in de buggy. Dat zal ik dan eerder thuis doen. Dat ik dan thuis die appel snij of bijvoorbeeld ze vinden worteltjes ook leuk wat in zo'n zakje zit, nou als ze dat op hun schoot hebben binnen de kortste keren liggen die wortels overal. En om iedere keer dan zo'n worteltje te gaan geven dat is ook een beetje zo. Dus het zijn vaak de ongezontere en wat makkelijkere dingen die je geeft onderweg.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Nou wat ik dus heb als we ergens zijn bijvoorbeeld op een terras, de buggy is een stuk lager dan dat ik gewend ben met de kinderwagen. En dat maakt het voor je kind moeilijker om bij de tafel te kunnen, omdat ze dan niet zoals wij echt aan de tafel kunnen zitten, waardoor als je je kind eten moet geven je heel erg moet bukken, want je kan het ook niet bij je kind zelf kwijt. Het is niet zo dat mijn kind het bord zelf kan vast houden en hapjes neemt. Dus dat is eigenlijk een beetje onpraktisch.

Verder ja, maar wij zijn allebei niet zo vies van vies worden. Dat hoort er nou eenmaal bij en ik heb gelukkig zo'n seatliner er in zitten, dus als het echt heel vies is dan kan ik dat wel wassen.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Nou ik moet zeggen dat de afleiding wel meevalt mijn dochters houden heel erg van eten en ze eten ook echt heel goed. Dus dat heb ik eigenlijk niet.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ja, met mijn vorige kinderwagen vond ik het dus echt perfect omdat je die aan tafel kon zetten. Als je dan ervaart hoe het is om zo'n hoge kinderwagen te hebben en dat je kind er dan ook gewoon bij zit en het voor jezelf ook gewoon makkelijker is dat vond ik super fijn.

Ik zou zelf denk ik niet zo snel zo'n eetplankje gebruiken, ik denk ja je kan je leven ook wel anders inrichten dat je het niet nodig hebt. Maar ik kan me voorstellen dat als je je buggy dagelijks gebruikt al vanaf je kindje zes maanden is, wat ik dus niet had omdat ik twee kinderen had, dat het best handig is om zoiets te hebben.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Dat doen wij vooral heel erg thuis, bijvoorbeeld dat mijn dochter stampot eet met haar handen op tafel. Het is heel belangrijk om je kinderen zelf dingen te laten eten, maar als je je kind in een kinderwagen of buggy hebt dan kies je al sneller voor dingen wat ze al zelf kunnen eten. Want anders is het gewoon, kijk ik bedoel thuis je tafel of je stoel schoonmaken is niet zo erg, maar zo'n kinderwagen van stof iedere keer schoonmaken is niet te doen. Dan ga je al automatisch zoeken naar dingen, zoals een kaasstengel, wat ze zelf vast kunnen houden.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Wat heel handig is, is dat er inkepingen inzitten waar je iets vast in kan zetten, dus dat je kindje zelf bijvoorbeeld drinken kan pakken. Wat ik nu zeg maar heb, of nou ja ik heb er niet veel last van omdat

ik het zo kort gebruik, dus dat ik het drinken in een tas heb zitten en dan moet het steeds geven. En als je het heel vaak gebruikt kan ik me best voorstellen dat het handig is dat het gewoon bij je kindje staat en ze het er gewoon uit kunnen pakken.

Dus iets van inkepingen en meerdere opties. Dus dat je bijvoorbeeld een ding hebt voor je drinken en een inkeping voor je snack. En wat dan nog handiger is dat daar een los bakje in zit, want het lijkt mij heel onhandig dat je iedere keer dat hele ding moet schoonmaken. Dat daar gewoon een bakje in ligt die daar op maat in kan en dat je die er dan uit kan halen. Wie gaat zo'n groot product nou in zijn vaatwasser stoppen of iedere keer schoonmaken, dus als je dan een bakje hebt.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Wat misschien wel handig is dat je er iets aan vast kan maken, dus dat er een soort lusje inzit waar je iets aan kan doen. Wat je bijvoorbeeld ook hebt dat je van die mobieltjes in een kinderwagen kan hangen. Dus dat je dan aan de zijkant een lusje hebt waar je iets aan kan doen, bijvoorbeeld een knuffeltje of je speen of een zacht boekje. Dan kan je zelf bepalen wat je er aan doet, denk dat het heel moeilijk is iets te bedenken dat universeel is.

Ik zou het wel vreselijk vinden als er allemaal kleuren op zitten, maar goed. Dat je kiest voor rood, geel en blauw, want dat zijn primaire kleuren en dat zien kinderen eh, nee, nee. Je zou het misschien wel leuker kunnen maken met een embleempje ofzo of zo'n Joolz icon.

Interview 6

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: vrouw

Aantal kinderen: ik heb twee kindjes, mijn jongste is anderhalf en mijn oudste is net vier geworden, het zijn twee meisjes.

Kinderwagen: We hebben een grote kinderwagen en buggy, maar moet zeggen dat we tegenwoordig vooral de buggy gebruiken.

2. Geeft u uw kind eten in een kinderwagen?

Ja, zeker. We geven dan vooral snacks of een boterham als we merken, als je opstap bent en ze worden honger. Of meer als een momentje om een beetje te sussen zeg maar als ze eigenlijk geen zin meer hebben of moe zijn ofzo iets, dus het kan variëren van een melkfles geven tot een boterham, rijstwafeltje of cracker. Dat soort dingen.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Opzich bevalt het best goed, het enige wat ik altijd in de gaten moet houden is één of ze niet gewoon dingen eruit gooien, dus dat je het geeft en of ze laat het vallen of ze gooit het gewoon expres op de grond. En twee of er ook niet dan, als je dan een boterham met pindakaas geeft dat dan die vieze handjes meteen weer de stof of wat dan ook vies maken.

Liever, als ik de optie heb om het niet te geven in de kinderwagen dan geeft ik het liever gewoon in een stoel of daarbuiten, maar het gebeurt ook vaak genoeg dat het wel nodig is. Dan doe ik het wel.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, nou ja het enige is misschien een drinkbeker zo'n 360 drinkbeker die bijvoorbeeld niet lekt. Of dan misschien wat het dan nog kan zijn is zo'n afsluitbaar bakje. Waarin bijvoorbeeld een paar stukjes appel of wat dan ook inzitten dan zou ik dat nog wel kunnen geven. Maar wel ook als ik erbij zit want anders vliegt dat bakje weer op de grond.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Nee eigenlijk niet, ik heb niet echt een routine daarin. Het is gewoon net wat er is, op elk moment kan het net wat anders zijn maar nee, het is eigenlijk geen routine.

Nou ja het enige wat misschien een routine kan zijn als je merkt ze heeft bijvoorbeeld een melkfles nodig. Dat we dan gewoon zorgen dat haar rugleuning zeg maar lekker laag is dat ze een beetje kan liggen drinken. Dat is denk ik het enige.

Ik neem vooral van die kleine rijstwafeltjes mee, crackers, dat zijn bijvoorbeeld van die Cracotte crackers, boterham, het kan bijvoorbeeld ook een mandarijntje zijn of appeltje.

- a. Overweegt u gezonde maaltijden?

Ik vind gezonde dingen wel belangrijk, het gebeurt echt weleens dat ze een koekje krijgt hoor, maar overwegend wel gezond.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Dat ze dan niet de boel onder smeren of het inderdaad op de grond gooien en dan heb je niks meer. Als ik dan bijvoorbeeld krentenbollen, dat neem ik ook weleens mee, omdat dat ook makkelijk is, want daar hoeft ook geen beleg tussen. Maar ja als ze die dan op de grond gooien dan is het einde. Dus ja niet de boel vies maken of op de grond gooien.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Dat ervaar ik eigenlijk niet zo, nee

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?

- a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ik denk dat opzich wel dat ze echt een eigen bakje hebben op de kinderwagen uitkomst kan bieden. Ik denk dat het ook wel per kind verschillend is, want die van mij is wel echt gewoon. Die is ook gewoon als ze thuis een bordje krijgt. Vliegt die vaak op een gegeven moment ook op de grond. Dus ik ben er toch bang voor dat bij zo'n bakje dat ook niet alsnog de inhoud er gewoon uit gegooit wordt. Ze gooien dingen op de grond, omdat ze het leuk vinden of uit frustratie of spelende wijs, maar ze weten wel zeker

hoe ze er eigenlijk mee om moeten gaan, maar meer gewoon als een vorm van frustratie, verveling, spelen.

Maar misschien als het iets is dat ook afgesloten kan worden, dat er bijvoorbeeld een dekseltje op zit dat al handig zou zijn zodat je ook niet, mocht er iets in liggen dat je het dan continue eruit moet halen en in een ander bakje of zakje moet doen. Dus iets wat je kan afsluiten, denk dat dat nog wel interessant is.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Ik probeer dat wel, zeker maar in sommige situaties, als we bijvoorbeeld ergens zijn waar het misschien niet zo handig is als ze zelf iets eten met een lepel dan heb ik nog wel zoiets van ik ga ze even voeren voordat straks overal yoghurt of wat dan ook aan zit. Ik stimuleer het wel maar soms heb ik ook nog zoiets van ik help eventjes.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Nou het materiaal vind ik wel belangrijk, dus dat het wel gemaakt is van materiaal zonder PFAS of andere schadelijke stoffen. Dat het misschien ook makkelijk te reinigen is. Dat vooral.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ja dat zou leuk zijn ja, dat er ergens iets op zou zitten waarmee ze ook nog zouden kunnen spelen of ontdekken, ja.

Interview 7

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: vrouw

Aantal kinderen: een zoontje, hij is van september dus hij is nu twee, twee en een half jaar.

Kinderwagen: Een grote kinderwagen met een zitje

2. Geeft u uw kind eten in een kinderwagen?

Ik heb hem nu bijna niet meer in de kinderwagen. Hij is voornamelijk eigenlijk aan het lopen en hij er eigenlijk ook niet vaak meer in wil. Maar ja ik heb hem weleens wat eten gegeven, maar ja, niet echt extreem veel.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/ onderweg?

Opzich wel goed, omdat ik gewoon een goede kinderwagen heb, waar het kind goed inzit. Het zit ook wel vrij rechtop erin, dus het gaf voor mij altijd wel een fijn gevoel dat hij zich niet zo snel echt kon verslikken.

Ik gaf altijd wel wat kleine dingetje dus, elke keer als ik hem een stukje gaf en hij had zijn mondje leeg dan gaf ik gewoon weer een stukje.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Mm nou ja, ja wel zo'n rietjes beker die je tegenwoordig hebt. Maar ja die kon je eigenlijk niet ergens kwijt dus dan gaf ik het gewoon aan hem en als hij klaar was dan pakte ik hem alweer en stopte ik hem zelf weg.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Ik gaf bijvoorbeeld van die maisvingers waar ze dan op kunnen sabbelen, ik gaf weleens wat fruit in de kinderwagen of van die babykoekjes van Liga. En ik gaf dan gewoon elke keer een stukje en dat ik gaf ik dan elke keer aan hem. Voor mijn eigen geruststelling, dat ik wist dat het alleen dat stukje was dat hij had en dat ik wist hoe dat in mate naar binnen ging en dat ik wist dat hij zich niet kon verslikken en dergelijken doordat hij zijn mond te vol propte. Dus eigenlijk een beetje door mijn eigen keuze dat ik hem gewoon stukje voor stukje gaf.

- a. Overweegt u gezonde maaltijden?

Wij hebben eigenlijk altijd wel een beetje gezonde dingen gegeven, hij krijgt eigenlijk niet veel koekjes of dat soort dingen eigenlijk. Alleen van die knabbelkoekjes dan zeg maar van de Liga, maar voor de rest gaven we hem alleen maar fruit of van die maisvingers. Of ja ook nog weleens zo'n knijpfruitje, dat gaven we hem ook nog weleens.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Voor de koekjes dat hij dan gaat sabbelen en hij gaat er daarna op zitten dat krijg je bijna niet meer uit de kinderwagen. Je kan ook niet echt die hoes er afhalen ofzo dus het is ook niet zo van ik gooi die hoes even van de kinderwagen en dan kan ik die er daarna weer terug opdoen. Ik was elke keer aan het boenen met een doekje om het er af te krijgen.

Verder eigenlijk niets, het was gewoon denk ik niet helemaal mijn voorkeur om mijn kind in de kinderwagen te voeden. Dus voor mij was het sowieso wel snel dat we hem uit de kinderwagen haalde en in stoel zette.

Alleen de stang die voor langs de kinderwagen loopt zit vrij hoog. Het komt bij hem op zijn borst hoogte dus ja die beugel vonden wij altijd vrij hoog zitten. Want dat merk ik nu af en toe nog steeds hij is nu al best wel groot en als ik hem er nu in zet komt hij er net zo met zijn handjes boven, zovan oke ik heb ze er op liggen, maar hij zit echt heel hoog.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Daar heb ik onderweg eigenlijk weinig last van, omdat ik het niet vaak doe.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

De kinderwagen die ruikt natuurlijk altijd naar thuis dus dat geeft altijd een veilig gevoel voor de kinderen. Een tafeltje of plateautje zou wel handig kunnen zijn vooral bij nog wat kleinere kinderen. Vooral als je meerdere kinderen hebt dat de een in de kinderwagen kan en de ander in de stoel dat je het eten daar even voor de kleine kan neerleggen.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Dat doe ik wel, maar niet echt in de kinderwagen moet ik zeggen. Dan haal ik hem eigenlijk altijd wel uit de kinderwagen.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

In ieder geval een bakje, noem het een soort van inkeping, want bij kinderen valt alles er natuurlijk vet snel af. Dus ook graag een opstaande rand aan de zijkanen.

Ergens zou het wel handig zijn om een houder te hebben voor de antilekbeker of een rietjes beker, want dat kunnen kinderen vaak zelf wel heel goed.

Verder niet teveel poespas want kinderen gaan er toch alleen maar aanzitten.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Je hebt tegenwoordig, van die voelboekjes noem je dat, dat zijn losse attributen vaak die je er dan aan kan doen. Dus als aan zo'n plateau ook een soort, ik noem het maar haak zit, een haakje waar ze zulke dingen aan vast kunnen maken. Ja kan me voorstellen dat dat al heel fijn is. Soms heb je niet eens de gelegenheid om het aan de kinderwagen zelf vast te maken.

Interview 8

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Leeftijd: 31 jaar

Geslacht: Vrouw

Aantal kinderen: Een zoontje van twee jaar

Kinderwagen: Een grote kinderwagen en een buggy

2. Geeft u uw kind eten in een kinderwagen?

Ja zeker, dan zijn het gewoon vaak een knijpfruitje of van die babychipjes of een stuk banaan. Dat wel maar niet hele maaltijden maar gewoon wel echt van die makkelijke snackjes zeg maar.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Ja, opzich gaat het wel soepel, maar ja een banaan houdt hij dan in zijn handen en vaak valt dat dan ook weer, dan laat hij het vallen. Opzich zijn het wel gewoon van die makkelijke dingen die je geeft zoals een knijpfruitje, hij vindt dat heel erg lekker dus dan eet hij dat ook gelijk op. Van die babychipjes als hij er zin in heeft ook en anders gaat hij ermee gooien.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee in de kinderwagen doe ik dat eigenlijk niet. Ik geef gewoon altijd, ik ben gewoon een beetje lui. Dus ik geef hem gewoon altijd van die makkelijke dingen wat ik hem kan aangeven zeg maar.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Als we in de supermarkt zijn dan pak ik gewoon een knijpfruitje of van die babychipjes. Ik geef gewoon een paar van die chipjes in zijn hand en dan houdt hij dat in zijn handje vast. Ik geef hem eigenlijk niet zelf dat zakje want dan eet hij dat zelf gewoon op. En dan over 5 minuten zit hij weer te huilen dat hij wil eten. Ik doseer het gewoon een beetje. Hij wilt gewoon de hele dag door eten.

Ik geef hem als we op pad zijn ook eten om hem een beetje tevreden te houden zodat hij een beetje stil is en niet gaat huilen. Dan geef ik hem eten en dan is hij weer eventjes zoet en dan moet ik hem weer wat even geven en dan is hij weer eventjes zoet.

Ik geef hem op vaste momenten eten en dat zijn om 10 uur fruit, dat is gewoon een vast moment dat ik hem altijd fruit geef. En om 3 uur 's middags ook nog wel gewoon, of yoghurt of, hij is gek op dadels, dus dan geef ik hem dadels. Twee vaste momenten. En tussendoor, thuis doe ik het eigenlijk niet, maar als we dus op pad zijn dan geef ik hem nog wel de snackjes om gewoon echt puur hem tevreden te houden.

Als we op de vaste momenten op pad zijn, bijvoorbeeld om 10 uur, dan geef ik hem gewoon dat knijpfruitje, maar dat is gewoon puur omdat ik zelf niet georganiseerd ben. Dat ik gewoon dat helemaal dat voorbereid en fruitjes meeneem. Ik kan me voorstellen als je zelf tegen, er zijn ook moeders die tegen knijpfruitjes zijn, omdat het toch bewerkt is, dat je dat wel gaat doen. Volgens mij zijn ouders over het algemeen wel lekker van het gemakkelijk.

Ik ga gewoon niet helemaal voorbereiden, misschien wel als je de hele dag weg bent ofzo. Maar als ik gewoon echt even naar het winkelcentrum ga of ergens een winkel bezoek of gewoon iets anders bezoek, nou dan is er vaak ook weer eten, maar dan bereid ik dat nooit echt voor.

a. Overweegt u gezonde maaltijden?

Banaan geef ik vaak, knijpfruitje nou ja ik geef eigenlijk geen koekjes, maar wel van die maischipjes, dat zijn van die gepofte dingen. Ik geef hem geen koekjes, ik geef hem geen dingen met zout. Maar inderdaad je zou nog wel kleine rauwkost dingen, bijvoorbeeld kleine worteltjes of dat soort dingen tussendoor kunnen geven. Hij houdt daar gewoon niet van, maar er zijn kinderen die daar wel van houden. Hij houdt gewoon echt niet van grote stukken, als het ergens in verwerkt zit, dan vindt hij het prima, dan vindt hij het lekker, maar zo'n stuk groente dat hoeft hij echt niet.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Ja, hij knoeit wel, dat doet hij thuis ook, daar heeft hij zo'n plateautje en dan ligt het letterlijk overal. En dat is gewoon ook omdat hij met dingen op een gegeven moment gaat gooien of slaan. Ja, ik zit gewoon wel vaak als hij in de kinderwagen zit, dan wordt het wel gewoon vies als je hem gewoon eten geeft en ja dan zou je hem ook een slabbetje moeten geven maar ja dat is ook wel weer veel gedoe. Ja dat is misschien gewoon een dingetje dat hij gewoon vies wordt als hij een knijpfruitje aan het, en je hebt gewoon geen zin om een slabbetje om te doen en dat wilt hij vaak ook niet.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Hangt er van af, ja in de kinderwagen opzich niet, want dan zit hij gewoon of in zijn knijpfruitje of zijn chipje en dan zit hij daar wel echt gefocust op. Maar ja thuis is dat wel sneller en onderweg geef je hem niet echt hele maaltijden, in ieder geval ik doe dat niet. Ik zorg eigenlijk altijd voor zijn maaltijd ben ik thuis. Ik kan me voorstellen dat je als je dan wel een keer onderweg bent dat dat anders is.

In een restaurant is hij wel snel afgeleid, maar dan wilt hij vaak ook niet in een kinderwagen zitten. Ik doe hem gewoon in zo'n stoeltje en dat wilt hij vaak ook niet in en dan gaat hij gewoon bij je op schoot of lopen. En soms is hij dan wel even zoet met eten, maar niet in de kinderwagen.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?

a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Het zou kunnen, ja, ik kan me wel voorstellen stel je neemt van die fruitjes mee, van die stukjes fruit en je gaat op pad en je hebt een tafeltje of iets en een bordje waar je het op kan zetten en hij het zelf zou kunnen pakken. Ik kan me voorstellen dat als je op vakantie gaat dat dat misschien op het vliegveld, dat dat misschien kan doen. Maar ik ben gewoon niet super georganiseerd daarin dus ik ga niet helemaal maaltijden voorbereiden. Dus daarom heb ik het zelf eigenlijk nooit nodig gehad. Maar kan me voorstellen dat het wel handig is.

Een kinderwagen is ook wel iets wat je altijd mee hebt. Misschien gewoon veel van die dingen die je in je luiertas hebben dat die gewoon op kinderwagen zitten ofzo. Zoals bijvoorbeeld een drinkbeker houder dat je die daar gewoon in doet, dat hij daar in klikt en dat je die dan niet los hoeft mee te nemen.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Zeker, ja dat heb ik eigenlijk al vanaf het begin af aan gedaan, ik heb hem nooit dat ik hem eten gaf. Ja, misschien toen hij vier maanden was en het zelf niet kon. Maar vanaf best wel vroeg, zes maanden ofzo, liet ik hem alles zelf eten en dat doet hij nu eigenlijk. Hij eet zelf hele maaltijden en drinkt zelf. Gewoon vork ook, kan hij ook echt al prikken. Maar ja ik hoor ook weleens mensen die het vies vinden al het eten op de grond wordt gegooid en die voeren hun kinderen dan wel zelf, ik heb daar nooit een probleem van gemaakt.

Maar onderweg is dat natuurlijk wel meer een dingetje, daarom zou ik zelf ook nooit hele maaltijden geven onderweg. Ja misschien gewoon uit een potje, maar dan geef je dat toch wel wel meer, want ik weet hoe hij dat gaat, heel veel kinderen die zelf eten gaan gewoon gooien of knoeien. Ik weet niet of je hele maaltijden zou doen.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Gemak, dat het gewoon gemakkelijk gaat, niet dat het gewoon moeilijk gaat omdat het gewoon allemaal soort van extra veel handelingen moet gaan doen om het er op te zetten. Dus het moet makkelijk, dat het er gewoon makkelijk altijd is, of dat het er wek gewoon altijd is maar dat het niet perse er elke keer af hoeft. Dus gemak denk ik want anders ga ik het niet gebruiken.

Ja misschien sowieso bij de drinkbeker, ik heb hem nu gewoon altijd in mijn tas maar dan lekt hij soms nog steeds wel. Dus als je hem ergens recht op zou kunnen zetten dat zou wel handig zijn.

Een kinderwagen is ook wel iets wat je altijd mee hebt. Misschien gewoon veel van die dingen die je in je luiertas hebben dat die gewoon op kinderwagen zitten ofzo. Zoals bijvoorbeeld een drinkbeker houder dat je die daar gewoon in doet, dat hij daar in klikt en dat je die dan niet los hoeft mee te nemen. Ik heb heel vaak geen luiertas mee, want dat vind ik gewoon niet fijn, wat ik vervelend vindt is dat die tas nooit gewoon makkelijk blijft zitten. Ik neem hem dus heel vaak gewoon niet mee en dan doe ik alles in het matje daaronder. Ja gewoon producten gewoon integreren gewoon meer. Ja gewoon een houdertje voor een drinkbeker dat je die gewoon bij het kindje zet. Dan kan je kindje zelf drinken pakken wanneer die wil en hoef je dat niet aan te geven.

Misschien toch wel als je een banaantje kan geven dat hij het ergens op kan leggen zelf.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ja zeker, dat is misschien echt wel een hele goede, je hebt wel van die spelletjes bijvoorbeeld dat ze afgeleid kunnen worden of dat ze kunnen draaien of zo kunnen trekken. Of mijn kindje is echt helemaal gek op sloten dus die wil gewoon de hele dag van die dingen, ook wat die kinderwagen heeft, de riem, het liefst wil hij daar de hele dag mee spelen. Dus als er iets van een spelletje of iets wat hij in elkaar kan doen, dat zou echt geweldig zijn, want dat betekent gewoon dat hij gewoon super lang zich kan vermaken.

Interview 9

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: Man

Aantal kinderen: een dochtertje van een jaar, om precies te zijn een jaar en een maand

Kinderwagen: het eerste half jaar heb ik een grote kinderwagen gebruikt. Op een gegeven moment kon ze zitten en hebben we eigenlijk als tweede wagen een buggy genomen en sindsdien hebben we de kinderwagen niet meer gebruikt.

2. Geeft u uw kind eten in een kinderwagen?

Ja, maar we geven alleen een crackertje of een komkommertje ofzo, maar echt een warm gerecht geven we niet in de kinderwagen. Het zal weleens gebeurt zijn hoor, dat je even geen zitplek hebt en dat je het wel doet.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/onderweg?

Ja we geven het niet zo vaak, want het wordt gewoon echt heel snel vies. Dus als we een crackertje geven dan wordt het een beetje nat en dan gaat het echt in de stof zitten. Maar ja we geven wel een crackertje of komkommertje of dat soort dingen wel. Weleens een drinkbekertje of zo'n fruitzakje hebben we ook weleens gehad, dat gaat ook heel snel lekken, dat zit dan ook overal.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, eigenlijk niet.

Ja, met water geven we ook een flesje met een rietje maar ook zo'n bekertje met zo'n randje waar water uit komt als ze een beetje bijt zeg maar.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

In het begin gaven wel de helft van het crackertje bijvoorbeeld, want dan was het nog best wel groot, maar sinds zes maanden geven we gewoon een complete cracker en komkommer ook, gewoon een hele komkommer. Heel soms geven we een fruitzakje of rozijnen, we proberen voornamelijk gezond eten. We geven dan het hele doosje, maar vaak vliegt alles overal heen en soms zit ze echt te proberen om het er uit te krijgen enzo. Ze drinkt nu eigenlijk bijna geen flesje meer, melk, maar het eerste jaar had ze wel vaak dat ze een flesje moet hebben en dat hebben we ook wel in de wagen gegeven. Dan is dat vaak in een recline positie dat ze meer naar achter ligt. En als het flesje dan op is dan berg je het weer op.

Met waterfles dat is dan even geven en dan weer terug nemen, want anders gaat ze er een beetje meespelen en dan spuugt ze het weer uit en wordt alles nat. Dus gewoon echt letterlijk af en toe geven en dan drinkt ze wel en dan is ze even gestopt en dan doe ik hem weer weg, want anders gaat ze er mee spelen. Maar met een cracker ofzo daar loopt ze gewoon wel lang mee te, knabbelen zeg maar.

Het is wel zo dat je merkt ze is een beetje verveeld en misschien een beetje hongerig doet, dat zijn wel de momenten dat je iets geeft.

Verder hebben we niet echt routines ofzo

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Het is echt voornamelijk het knoeien en dat het dan vies wordt zeg maar. Voor de rest kun je best wel rechtop zitten in de kinderwagen. En qua hoogte is het ook wel oké.

Ja misschien als je bijvoorbeeld in een restaurant zit ofzo, en daar iets gaat eten en dat je haar dan in de wagen laat. Dat het natuurlijk wel wat ruimte in beslag neemt dus dan probeer je haar wel op een bepaalde manier te plaatsen dat het niet in de wegstaat.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Tegenwoordig nu ze een beetje begint te lopen is ze wel wat meer afgeleid, na een tijdje halen we haar dan gewoon uit. En afgeleid wordt ze sowieso heel snel. Als je buiten bent en het is heel druk en ze ziet andere kinderen dan eet ze minder. Maar thuis bijvoorbeeld dan zit ze er wel echt van te genieten en dan zit ze lekker te eten. Maar ja als het heel druk is enzo dan eet ze gewoon echt minder, omdat ze om haar heen kijkt wat er gebeurt.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Als ik persoonlijk kijk van wat zou ik daarvoor nodig hebben om wel gewoon vaak in de kinderwagen eten te geven dan komt het echt op het feit dat ze het knoeien gewoon best wel veel doet. Dus als je iets kan hebben wat dat kan voorkomen, of in ieder geval echt wel kan verminderen dat zou wel echt een verbetering of toevoeging zijn.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Ja daar zijn we eigenlijk best wel vroeg mee begonnen dat je eerst gewoon kleine stukjes geeft en op een gegeven moment geef je gewoon een hele cracker of een hele komkommer dat ze er zelf mee bezig is. Ook gewoon bestek geven, dus lepeltjes vorkjes, dat ze er al een beetje mee, dan probeert ze het even en dan gaat die andere hand het al pakken. Maar dat ze er in ieder geval al aan gewend raakt.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Ja, als het knoeien verminderd zou kunnen worden dat is iets wat ik belangrijk zou vinden. Het tweede wat ook belangrijk is dat het er niet snel van af vliegt. Dat zou ook wel echt een goede zijn. Want dat zou thuis op haar eetstoel ook bijvoorbeeld wel fijn zijn, over het algemeen zou dat wel een goede toevoeging zijn. Dus dat je best wel een fysieke bevestiging zou hebben zeg maar.

Misschien dat het ook niet het vouwen van de wagen belemmert. Van de buggy, een van de tofste dingen vind ik, is dat het gewoon best wel makkelijk vouwt en ik heb er bijvoorbeeld de bumper bar op en daarvoor moet je weer een aparte actie toevoegen om hem op te vouwen, het is wel makkelijk. Maar toch als je het eenmaal gewend bent om met een knopje, dan wordt je op een gegeven moment lui en is het wel fijn als het dan niet het vouwen belemmert.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Het zou bijvoorbeeld wel leuk zijn dat als er een knopje ofzo zou zijn dat je daarop drukt en dat, ik zeg maar wat, dat je de drinkbeker er op klinkt en dat ze daarop drukt en dat ze zelf weet als ik daarop klik dan kan ik hem er af halen. Dat je motoriekvaardigheden, dat je dat kan challengen. Of dat je bijvoorbeeld dat je een bakje met rozijnen hebt en dat als ze iets doen dat er dan een rozijntje uitkomt.

Interview 10

Introductie

1. Zou u allereerst willen vertellen wie u bent?

Geslacht: vrouw

Aantal kinderen: wij hebben sinds 4 december 2022 een dochter, ze is nu dus iets meer dan 14 maanden. Zeg ik dat nou goed, bijna 14 maanden

Kinderwagen: Een grote kinderwagen en daarnaast gebruiken wij nu ook sinds 4 maanden, maar toch pas sinds een maand echt wel geregeld, een buggy. Dus nu ze wat groter is en wat beter kan zitten, gebruiken we de buggy ook best wel veel.

2. Geeft u uw kind eten in een kinderwagen?

Ja, dat doe ik wel. Ik moet zeggen dat ik best wel tussen het eten door met haar op pad ga. Dus echt grote boterhammen of dat doe ik niet. Het zijn meer dus de wat snackmomentjes.

3. Hoe zou u uw algemene ervaring beschrijven bij het voeden van uw kind in een kinderwagen/ onderweg?

Het zijn dus de wat snackmomentjes, of dat we even tussen twee maaltijden in iets kleins te geven. Maar ik moet zeggen dat het niet mijn doel is om dat in de kinderwagen te doen.

Ik vind het fijner, zeker wat jonger, ze zit wel goed, maar vind het toch een beetje onder uit gezakt, oh dan denk ik alles wat je nu eet vind ik het nog wel wat spannend of je dat goed weg kan slikken dus ik heb haar wel liever in de kinderstoel. Dat ze gewoon wat rechterop zit en de focus heeft op het eten. Het is misschien ook een beetje de leeftijd, als ze anderhalf is of twee dan is het misschien ook wel minder spannend. Maar nu nee ik maak er niet een sport van, ik probeer het wel zo veel mogelijk te vermijden. Omdat ik het een gekke houding en er is gewoon te weinig focus op haar dat ze eet, ze kan ook best wel snel heel veel tegelijk in haar mond proppen. En dan ben je zelf aan het rijden en dan vind ik dat je daar minder alert op kan zijn. Dus ik denk dat dat een beetje de fase is waar we nu in zitten.

Gebruik van voedt producten in kinderwagen

4. Gebruikt u producten of hulpmiddelen om te helpen bij het voeden van je kind in een kinderwagen?

Nee, ja je hebt natuurlijk drinken dat zit dan in zo'n 360 beker, met twee van die handvatten en dan kan ze gewoon zelf. Die doe ik in een cupholder.

Voeding onderweg

5. Kunt u uw typische routine beschrijven als het gaat om het voeden van uw kind in een kinderwagen?

Het beperkt zich wel een beetje tot dingen die ze zelf kan vast pakken, bijvoorbeeld van die maiswokkels of gewoon een soepstengel, dan heeft ze ook wat meer in de hand. Rozijntjes, dat is ook zo'n fase, dan eten ze allemaal rozijntjes, maar dat moet je dan wel weer ergens in doen en zo'n bakje ja dat pakken ze natuurlijk niet echt vast. Dus ik zorg er eigenlijk wel voor dat ik een wat groter ding of zo'n stengel of zo'n wokkel. Fruit doe ik ook niet, want dat vind ik een beetje smerig worden en blijft niet vers. Dus dat is een beetje wat ik geef, dus dat doe ik zonder bakje, zonder vorken.

Dus ik heb altijd wel zo'n zakje met van die wokkels en dan zo'n IKEA klip om hem helemaal af te sluiten, ligt gewoon onder in mijn mand. Ik vind het altijd wel makkelijk dan heb ik altijd iets, mocht ik toch ergens onverwachts naar toe moeten. Niet dat het vult ofzo, maar dan heb ik altijd wel iets bij me. Om haar dan wel even af te leiden van iets of haar bezig te houden.

Ik neem die beker eigenlijk bijna altijd mee, want dan drinkt ze gedurende dag veel beter. Maar wat ik vaak doe, ik heb een cupholder, niet ideaal want ik heb twee handvatten eraan en dan past het net niet, maar als ik het er een beetje in duw dan past het wel. Die heb ik dan altijd voor het grijpen. Dus als ik denk ze moet even wat te doen hebben dan denk ik drink maar even wat, want dan heeft ze wat vocht binnen. Die neem ik wel echt altijd mee. Die geef ik dan aan haar als ik denk doe maar even een slokje. En soms doet ze echt grote goede slokken en de andere keer is het meer vermaak. Dat geeft mij wel het gevoel, dan krijgt ze genoeg vocht binnen. Dat doe ik dan wel weer in de kinderwagen.

Maar ik heb niet echt een routine in de kinderwagen, voor mij is dat niet echt een plek waar ik echt denk daar moet ze in eten of thuis. Nee ik doe het voornamelijk wel thuis, thuis eten thuis drinken. Of dan loop ik ergens naar toe en dan haal ik haar wel uit de kinderwagen, tenzij er geen stoel is. Maar veelal hebben restaurants wel gewoon een kinderstoel. En dan zorg ik gewoon dat ik haar daar eten geef.

- a. Overweegt u gezonde maaltijden?

Qua snacks zorgen we er ook voor dat het mager of luchtig of voedzaam is. Ik wil ook nog wel eens gewoon boontjes koken dan kan ze gewoon een boontje vast pakken en eten. Ik zorg er gedurende de week wel voor dat er variatie zit, dus als zij vandaag rozijnen heeft gehad dan toch morgen, een rijstwafeltje in plaats van die rozijnen die weer veel suiker zijn. Dus ik ben wel bezig met gezond eten. Maar als het niet altijd kan dan kan het niet altijd hoor, het is niet meteen heel erg. Ik ben er opzich wel heel bewust mee bezig.

6. Voor welke uitdagingen komt u te staan als u uw kind onderweg voedt (in een kinderwagen)?

Het is natuurlijk zo dat er wel heel veel gesmeerd wordt met eten. Hoe ouder ze worden hoe bewuster ze dat waarschijnlijk ook wel doen. Dus dat vind ik wel een uitdaging dat niet ook niet alles onder zit. Ze heeft dan nu een jas aan en het zit dan ook helemaal in die jas. Dus ik vind het niet perse dat ik dat nou heel chill vind. Dan zit alles weer onder, want ook die rijst die snackjes, als dat een beetje nat wordt dan wordt het heel papperig en dan gaat het heel erg plakken en dan wordt het weer hard, dus dan heb je overal dat spul zitten.

En ik moet zeggen die beker, die beker die ik nu gebruik, die past dus niet zo lekker in de cupholder. Die is wel heel erg voor een speenfles of een rietjesbeker, maar volgens mij is die 360 beker wel een hele generieke beker tegenwoordig. Want alle kinderen van die leeftijd die ik nu tegenkom, komt met die beker. Dus die kan ik niet super makkelijk meenemen. Ik wil hem ook niet onder in de wagen laten liggen, want als die omvalt, zit die zeg maar waar ze met haar mond aan zit in die bak los. Dus ik

probeer dat wel altijd ergens in te zetten, een soort van hygiëne, dat hij wel rechtop blijft, ieder geval niet lekt maar ook niet vies wordt, omdat ze daar met haar mond aan zit.

Maar voor de snacks die ik geef verder, ja die gooi ik gewoon in de mand of dat doe ik in mijn tas of dat doe ik in mijn jaszak. Daarin heb ik niet veel uitdaging perse. Om het mee te nemen in ieder geval niet, als er gegeten wordt en de wagen vies wordt dat vind ik wel een ding en drinkbeker vind ik dan ook wel weer.

En je moet het zelf geven, als je een tray hebt dan kunnen ze daar wat makkelijker zelf bij, maar ik merk nu ook wel als ze iets kan pakken dan kan ze het ook makkelijk weggooien. Dus je wil misschien ook niet dat het zo makkelijk te pakken is.

7. Hoe gaat u om met mogelijke afleidingen of onrust tijdens het voeden van uw kind in een kinderwagen?

Ja, een op een niet hoor, dat lukt wel. Maar in een kinderwagen zo buiten, dan heeft ze de focus op het eten niet, omdat ze dan om zich heen gaat kijken. Ik merk ook als mijn vriend thuiskomt en ik zit haar eten te geven, ja dan duurt het echt wel even tot ze weer in de focus is, om eten te krijgen. Maar ze kan ook heel makkelijk boekje bladeren en mond open doen eten. Opzich kan ze het wel, maar on the go, ja dan is wel heel snel afgeleid, ja.

8. Wanneer voelt u zich gesteund terwijl u uw kind onderweg voedt?
a. Hoe denkt u dat Joolz hieraan kan bijdragen?

Ja ik denk dat er wel heel veel slimigheidjes zijn. Er zijn natuurlijk tassen die je aan de duwbeugel kan hangen, waar je ook wel wat in kan opbergen. Wat ook wel een beetje voor snel snackie even ergens uithalen. En een cupholder of een tray. Ik denk dat er wel accessoires zijn die in de essentie iets toevoegen. Maar of ze echt een probleem, of uitdaging als ouder met kinderen die eten in een kinderwagen oplossen, dat weet ik niet. Omdat het of niet lekker past of er is niet nagedacht over dat een kind daar ook zelf bij kan of dingen weg gooit. Dus ik denk dat accessoires best wel waardevol kunnen zijn, maar ik denk dat het nu wel basis is. Je hebt een cupholder, er kan een fles in, maar dan heb ik het probleem dat mijn beker niet lekker past. Of hij zit best wel in de weg en je kan de zitting niet helemaal lekker reclinen, omdat daar die cup holder zit. Dus het brengt dan ook wel weer issues met zich mee.

Ik moet zeggen een tray, ik zie dat soms bij mensen en dat voelt voor mij soms een beetje of een kind de hele dag maar moet eten. Dat ze dan even onderweg zijn maar dat er dan ook weer een pakje Wicky en een broodje op. En dan denk ik ja, dat is misschien echt wel een oordeel die ik heb hoor, maar voor mij voelt het van pak nou gewoon een moment om met het kind rustig te zitten en te eten. In plaats van dat heel pragmatisch in een kinderwagen te geven.

Dus, ja ik denk dat Joolz wel kan bijdragen maar ik moet zeggen dat ik zelf wel mijn twijfel heb over de uitvoering van bepaalde dingen.

9. Op welke manieren stimuleert u de zelfstandigheid van uw kind tijdens het eten, vooral als u onderweg bent?

Zeker, ja ik geef het vooral heel erg aan haar dan kan zij het gewoon doen. Om een beetje afleiding te hebben, maar ook om te leren hoe ze het in haar mond moet stoppen en hoe ze moet kauwen.

Thuis doe ik dat ook echt wel met bestek dan geef ik haar wel gewoon een vork. Dan geef ik haar eten met een lepel en dan geef ik haar een vork om tussendoor een beetje zelf te doen. Dat is nu ook ze wil alles zelf doen. Ik doe dan zelf prikken en dan pakt ze het en dan brengt ze het naar haar mond. Want

de handeling van een vork pakken en prikken dat snapt ze nog niet helemaal. Hoewel ze wel met een vork of een lepel, ze kan wel in een bakje gaan, want ze ziet dat ik dat ook doe. Maar ze snapt nog niet helemaal dat ze met een vork dan moet prikken om het mee te nemen. Zo leert ze het wel een beetje, dat vind ik wel belangrijk.

Nieuw product

10. Welke eigenschappen of kwaliteiten zoekt u in een product dat helpt bij het voeden van uw kind in een kinderwagen?

Makkelijk, nou het is natuurlijk niet, de voetenzak heb ik altijd op de kinderwagen zitten, omdat hij een heel seizoen dagelijks gebruikt wordt. Een cupholder, klik ik erop wanneer ik hem echt even nodig heb. Het is niet dat ik dat elke dag elke wandeling die cupholder bij me heb. Soms loop ik even naar de Albert Heijn, dan hoef ik geen eten en drinken mee te nemen. Dan is het soms alleen maar een beetje irritant dat dat ding er op zit. Dus accessoires die snel op en af en in en uit kunnen, zonder dat je de hele wagen hoeft om te bouwen en dingen moet loshalen of dingen moet vastklikken. Nou ja misschien wel dingen vastklikken. Ik denk dat dat wel een fijne toevoeging kan zijn, dat het je het makkelijker maakt zonder dat je heel veel handelingen hoeft te doen, of dat je hem heel permanent op de wagen hebt, want dat kan soms wel heel irritant zijn als hij er op zit. Ook die tas, die zit er dan soms op en dan vind ik hem net niet lekker zitten met inklappen en dat doe ik ook best vaak dus dan moet ik hem er weer afhaken. Die handelingen van die kleine accessoires die in de basis niet heel essentieel zijn, als je daar makkelijk slim mee om kan gaan, ik denk dat dat ook een fijne toevoeging kan zijn.

Dat je denkt van oh ja, dat het in je gang ligt en ik klik het er even op en ga even naar de stad. Of ik haal hem er even snel af want die heb ik nu even niet nodig, zonder dat je de hele kinderwagen hoeft om te bouwen.

11. Zijn er specifieke leerelementen of ontwikkelingsdoelen die u in een dergelijk product aan bod wilt laten komen?

Ja grappig, ik moet zeggen ik heb de bumper bar van de pride, met kleurtjes. Die heb ik al vanaf de geboorte en dan zat ze in eerste instantie gewoon naar dat ding te kijken, van dat is wel interessant er zitten allemaal kleurtjes op. En soms doe ik dan wel even van, geel, paars, groen en dan gebruik ik dat wel om met haar dat spelletje te spelen om die kleuren te leren kennen. En toen dacht ik dat vind ik ook wel grappig, want ik gebruik de kinderwagen ook echt wel heel veel als ik wandel en dan ga ik met haar zingen of dingen aanwijzen of als ik een vogel hoor. Dus ik ben heel erg met haar bezig en ik vind dat is ook nog wel een plek dat je die connectie met elkaar hebt. Dat dat soort attributen ook wel weer grappig kunnen zijn. Educatie of entertainment. Je ziet ook wel eens van die stuurtoetsen, zelf rijden, ik weet niet of ik dat persoonlijk zou kopen. Kleurtjes op die bumper bar is helemaal niet zo bedoeld maar zo gebruik ik hem wel.

Appendix H Coding scheme interviews

Codering interviews

Thema's	Subthema's	Aantal codes	Totaal aantal codes
Kinderwagen type	Buggy	8	17
	Grote kinderwagen	9	

Aantal kinderen	Eén kind	6	10
	Twee kinderen	4	

Eten geven in kinderwagen	Ja	10	10
	Nee	0	

Type eten	Rijstwafels	3	45
	Organische broodcakes	1	
	Groente knabbels	5	
	Knijpfruit	5	
	Boterham/broodje	4	
	Cracker	3	
	Stukjes fruit	6	
	Drinken	8	
	Kleine pannenkoekjes	1	
	(Stukjes/ snoep) groente	3	
	Een potje	1	
	Kaasstengel	1	
	Baby koekjes	1	
	Krentebollen	1	
	Soepstengel	1	
	Melkfles	2	

Algemene ervaring	Praktisch	1	21
	Snel vies	6	
	Het kind zit vrij rechtop, niet verslikken	1	
	Moeilijk slikken, niet 100% recht	3	
	Redelijk positief	5	
	Kind die eten eruit gooit	2	
	Liefst zo min mogelijk	3	

Producten/hulpmiddelen	Nee	3	16
	Antilekbeker	5	
	Rietjesbeker	2	
	In het verleden een snack tray	1	
	Slabbetje	1	
	Tas	1	
	Flesje	1	

	Cupholder	1	
	Afsluitbaar bakje	1	

Snack tray ervaring	Handig, zelf dingen pakken	1	1
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Typische routine	Geen typische routine	3	44
	Eten geven om de paar uur	1	
	Gewoonlijke eetroutine aanhouden	2	
	Geen hele maaltijden	1	
	Soms in restaurant/terras in de wagen	4	
	Voorafgaand eten, zo min mogelijk in wagen	1	
	Kinderwagen tegen een tafel zetten	4	
	Stukjes in de mond geven	1	
	Twee standaard eetmomenten	2	
	Wagen als voedingsstoel op vakantie	1	
	Alleen de heupgordel vastzetten	1	
	In de supermarkt een snack geven	2	
	Bij een dagje weg, eten ze er de hele dag in	1	
	Bij melkfles, de rugleuning naar achteren	2	
	Per stukje/kleine dosering in hand geven	2	
	Eten geven om tevreden te houden	4	
	Eten aan geven in de hand	5	
	Slabbetje omdoen als die mee is	1	
	Altijd snacks mee	2	
	Waterbeker in cupholder	1	
	Waterfles terugnemen na drinken	3	

Gezond eten	Overweegt gezond eten	9	20
	(Bijna) alleen maar gezond	3	
	Belang van balans	1	
	Vooral thuis gezond	2	
	Geen fruit, want wordt vies	1	
	Variatie	1	
	Onderweg praktischer, minder gezonde focus	3	

Uitdagingen	Snel vies/ knoeien	10	21
	Koude handen baby, snack vasthouden	1	
	Niet genoeg handen, alles tegelijk, ook eten aangeven	1	
	Kinderwagen schoonmaken	2	
	De buggy is te laag om aan tafel te zitten	1	
	Eten op de grond gooien	3	
	De bumper bar zit heel hoog	1	
	Beker meenemen	1	

	De wagen in de weg staat in een restaurant	1	
Afleiding en onrust	Eten geven helpt tegen afleiding	2	15
	De tijd nemen	2	
	Een rustig plekje zoeken	1	
	Geen last van	4	
	De kap over de buggy dicht doen	1	
	Afgeleid zijn is niet zo erg	2	
	Minder focus op eten en meer op omgeving	2	
	Baby eet minder onderweg, door afleiding	1	
Ouders steunen	Een deel uit handen van ouders nemen	1	17
	Iets waarin eten en beker kan worden gedaan	5	
	Bekerhouder	1	
	Redt zich zonder product / nooit nodig gehad	2	
	Een product wat een zootje/knoeien tegengaat/vermindert	2	
	Ouders uitleggen dat kinderen in de wagen kunnen eten	1	
	Ouder die niet snel een product zal gebruiken	1	
	Iets wat ook afgesloten kan worden	1	
	Iets waar spullen uit de luiertas kunnen worden opgezet	1	
	Goed uitgevoerde producten die geen issues meebrengen	1	
	Negatief vooroordeel over gebruik van trays	1	
Zelfstandigheid stimuleren	Ja	7	14
	Ja, vooral thuis	2	
	Soms	1	
	Combinatie tussen zelfstandigheid en praktisch helpen	1	
	Rapley-methode om zelfstandigheid te stimuleren	1	
	Onderweg sneller helpen wegens praktische redenen	2	
Eigenschappen nieuw product	Iets waarin een beker kan staan	5	31
	Iets waarin eten kan liggen	2	
	Iets om snacks te bewaren	1	
	Makkelijk te gebruiken	1	

	Goed/snel/makkelijk demontabel	2	
	Makkelijk schoon te maken	2	
	Een bakje (inkeping, uitsparing)	3	
	Kwaliteit	1	
	Vaatwasserbestendig	1	
	Geschikt voor de baby (niet kunnen omstoten etc)	1	
	Materiaal zonder schadelijke stoffen (PFAS)	1	
	Opstaande randen	1	
	Niet teveel poespas	1	
	Gemak	2	
	Iets wat er niet elke keer af hoeft	1	
	Knoeien verminderen	1	
	Dat het er niet afvliegt, fysieke bevestiging	1	
	Met weinig handelingen te gebruiken	1	
	Weinig plek in beslag nemen	1	
	Niet het vouwen van de wagen belemmerd	2	

Leerelementen ontwikkeling	en	Iets open en dicht doen (dekseltje)	2	16
		Ja dat het meer is dan alleen een eetproduct	1	
		Kleuren	3	
		Iets waar je iets aan vast kan maken (knuffel, voelboekje etc)	2	
		Ik vind felle kleuren vreselijk	1	
		Joolz icon	1	
		Iets waarmee ze kunnen spelen en ontdekken	1	
		Spelletjes dat ze kunnen draaien of trekken	1	
		Dat het kind drukt en bijvoorbeeld dan de beker er kan afhalen	1	
		Motoriekvaardigheden challengen	1	
		Attributen voor educatie en entertainment	1	
		Dat het kind iets doet en dan eten krijgt	1	

Appendix I Personas

The first persona is Sarah, a family-oriented mother of a young child.

Sarah



Fostering independence while cherishing family

Age: 35
Work: Logistics employee
Family: Married, one kid
Location: Arnhem
Living situation: Semi-detached house
Archetype: Independent nurturer

Comfort Proactive Family-oriented

Goals

- Prioritize child's comfort and happiness
- Support her child's independence
- Imparting healthy eating habits to her child

Personality

Extrovert Introvert

Analytic Creative

Passive Active

Individual Group-oriented

Bio

Sarah, a 38-year-old working mother, strives for a comfortable and organized life. She lives in a semi-detached house and appreciates products that are easy to use. Sarah values her child's independence while prioritizing their close bond as a family. She struggles with the challenges of feeding on the go and tries to avoid messes in the stroller.

Frustrations

- Managing on-the-go feeding mess
- Solutions for a user-friendly approach
- Balance comfort with child's independence

Motivates

Price

Comfort

Convenience

Design

Brands

HEMA MAXI-COSI Joie™

The second persona is Mike, a devoted and practical father of two young children.

Mike



Embracing practicality and fostering growth

Age: 38
Work: IT Support Officer
Family: Married, two children
Location: Rotterdam
Living situation: Terrace house
Archetype: Practical parent

Practical Adaptive Efficiency

Goals

- Simplify feeding routines on the go
- Maintain a clean and organized stroller
- Easy to use and maintain solutions

Personality

Extrovert Introvert

Analytic Creative

Passive Active

Individual Group-oriented

Bio

Mike is a dedicated father striving to create an environment where his children can explore the world. He's ensuring every baby product serves a purpose. Mike values practicality and cleanliness, seeking baby products that align with these priorities. He employs an adaptable parenting approach, making choices that prioritize his children's development and the ease of everyday life.

Frustrations

- Messy on-the-go feedings
- Frustrated with inconvenient baby products
- Desires seamless daily integration

Motivates

Price

Comfort

Convenience

Design

Brands

Jolleen bébéJou® Pampers

The final persona is Emily, a mother in her late 20s of a 14-month-old child who values convenience.

Emily



Convenience without compromise

Age: 29
Work: Marketing coordinator
Family: Boyfriend, one kid
Location: Utrecht
Living situation: Urban apartment
Archetype: Urban explorer

Convenience Style Effortless

Goals

- Prioritizes daily convenience
- Enjoy quality time during outdoor activities
- Seeks hassle-free, fun outings

Personality

Extrovert Introvert

Analytic Creative

Passive Active

Individual Group-oriented

Bio

Emily, in her late 20s, is a professional balancing work and parenting in an urban environment. She values efficiency in her daily routine. Mother to a 14-month-old daughter, she appreciates a balance between practicality and convenience. Emily enjoys exploring the city with her daughter, she finds joy in interactive parenting moments during outdoor activities.

Frustrations

- Faces challenges with low stroller feedings
- Keeping the stroller clean while feeding
- Struggles with healthy on-the-go food choices

Motivatives

Price

Comfort

Convenience

Design

Brands

LIEWOOD done by deer™

Studio Noos
AMSTERDAM

Appendix J Customer journey template

Daily commute

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	For example: Ensuring a smooth and efficient trip	For example: Sustain the child during the short journey	For example: Keeping the child occupied and satisfied	For example: restoring the stroller to its pre-commute state
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan daily commute - Supermarket - Market - Going to daycare - For example: check traffic situation	For example: pack diaper bag with...	For example: offering snacks	For example: clean stroller
Feelings (what are you feeling)	For example: Sense of responsibility	For example: Focus on convenience	For example: Satisfaction that the trip is going smooth	For example: Satisfaction in meeting the child's needs
Thoughts (what are you thinking)	For example: Considering the usual timing and activities of the commute	For example: Prioritizing snacks that are portable	For example: Observing the child's behavior	For example: Reflecting on the overall experience

Recreational outing

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	For example: Ensuring an enjoyable experience for the child	For example: Sustain the child during the leisure activity	For example: Keeping the child entertained and satisfied	For example: Restoring order after the leisure activity
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Recreational outing - Visit park - Playground - Zoo - For example: check weather conditions	For example: pack diaper bag with..., select snacks	For example: offering snacks	For example: clean stroller
Feelings (what are you feeling)	For example: Excitement for the activity	For example: Balancing practicality and entertainment	For example: Enjoyment of quality time	For example: Fatigue from activities
Thoughts (what are you thinking)	For example: Considering the duration of the outing	For example: Considering activities that would enhance the experience	For example: Monitoring the child's enjoyment and comfort	For example: Considering any improvements

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	For example: Ensuring child's comfort throughout the journey	For example: Providing the child with nourishing snacks to keep him satisfied	For example: Keeping the child entertained and satisfied	For example: Restoring order after the trip
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan travel - Long distance - Use of different means of transportation (train, plane, car) - For example: check travel arrangements	For example: pack diaper bag with...	For example: offering snacks	For example: clean stroller
Feelings (what are you feeling)	For example: Stressed for the trip	For example: Stress to keep the child content	For example: Satisfaction if the child remains content	For example: Relief
Thoughts (what are you thinking)	For example: Considering potential hunger and boredom of the child	For example: Considering the logistics of feeding during the travel	For example: Monitoring the child's comfort and hunger levels	For example: Reflecting on the overall experience

Appendix K Customer journey results

Customer journey 1

Daily commute

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	Ensuring a stressfree and pleasant trip	Get the stroller and bags ready. If accessories needed put them on the stroller (raincover, cupholder etc)	Keeping the child comfortable and satisfied	Getting the stroller ready for the next ride
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan daily commute - Supermarket - Going to daycare - Going to grandma - Checking wheather	Packing bag: diapers, extra clothing, snacks, water, sunscreen, water wipes and specifier.	- offering snacks, water. - Changing the seat backrest angle if needed.	- Take everything out the basket and seat and clean if needed. - Fold the stroller and put aside.
Feelings (what are you feeling)	responsibility	- Stressed not to forget anything - Focused to think if I have everything needed for the child and also all my own stuff	- Satisfaction that the trip is going smooth. - Enjoyment if all goes smooth - Frustrated if I have forgotten anything	- Satisfied to completed the trip in a nice way - Happy to see the child smile.
Thoughts (what are you thinking)	What to take for the walk	Organizing bag in a convenient way. Making the more needed stuff easier accessible.	Observing the child	After the commute the next task is on the way so that is on my mind.

Recreational outing

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	Ensuring an enjoyable experience for the child and stressfree experience for parents	Sustain the child during the leisure activity	For example: Keeping the child entertained and satisfied	For example: Restoring order after the leisure activity
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Recreational outing - Visit park - Playground - beach - check weather conditions	Packing bag: diapers, extra clothing, food, snacks, water, sunscreen, water wipes, specifier and toys.	- offering snacks and water - Cleaning child's hands and face - Adjusting seat when child wants to sleep	- Take everything out the basket and seat and clean if needed. - Fold the stroller and put aside.
Feelings (what are you feeling)	Excitement for the activity	- Balancing practicality and entertainment - Responsibility to have everything needed	Enjoyment of quality time	Satisfied and tired
Thoughts (what are you thinking)	- Considering the duration of the outing - If the child will sleep and eat during the activity and	What food and snacks to pack.	- Monitoring the child's enjoyment and comfort - Checking time regarding eating and sleeping time	Reflection of what went well and what to do different next time

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	Ensuring child's and parents comfort throughout the journey	Bring everything needed to make sure the trip goes smooth	Keeping the child entertained and satisfied	Restoring order after the trip
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan travel - Long distance - Use of different means of transportation (train, plane, car) - check travel arrangements - Check wheater	- Packing bag: diapers, extra clothing, food, snacks, water, milk, sunscreen, water wipes, specifier and toys. - Packing suitcase: clothes, medicins, shampoo and etc.	offering food, snacks, water and milk.	Unpack and clean stroller
Feelings (what are you feeling)	Excited and Stressed for the trip	Responsibility to pack everything needed.	happy if the child remains content	Satisfied, Relieved and tired
Thoughts (what are you thinking)	Considering potential hunger and boredom of the child	Considering the logistics of feeding, sleeping and transporting during the travel	Monitoring the child's comfort and hunger and sleep levels	Reflecting on the overall experience

Customer journey 2

Daily commute

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	A necessary trip, hopefully organize it around something that's fun for kid n me (combine with playground etc)	- Prepare to be flexible during my trip. - No stress	- THAT: Keeping the child occupied and satisfied. - Also be ready if child gets hungry unexpectedly	Arriving home and have a smooth transition from outside to inside
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Going by tram or walking there? - How is the weather (forecast)? - When is his (the kids) nap time? I want him to sleep at home in his bed, so need to be back on time. - Can i maybe meet someone at the playground next to the supermarket? - No interaction with snacktray yet	- First: get bag ready (diaper, bottle, favorite toy) - Second: get stroller ready: is the snack tray attached to the aer? Do I need it? : Yes: Clean the tray from last trip (probably forgot it last time as we were in a rush as always). Prepare snack (cut apple, carrot, cucumber). Bottle with water for child. No: detach the snack tray and store it somewhere. I won't bring what I don't need or what can become cumbersome.	- I don't offer snacks here, kid has the snacks in front of him, he can take it whenever he wants. That's at least the idea ;) - Go shopping, store goods in basket. Kid wants everything that he sees in store. - Meet with a friend at playground; Kid wants to run and climb in and out of buggy. I personally want to assist him as little as possible, he is 2 and can do the climbing part by himself. - Sandy fingers all over. Dirty clothing. That's ok. Part of it. but he wants food. arggh	- Get him out of the buggy. - Take off his clothing/don't want dirt in the house. - Unload buggy (store groceries) - Fold stroller to store in the hallway (completely forget to take off snack compartments and clean them)
Feelings (what are you feeling)	...	Focus on flexibility	Happy to have combined grocery with meeting a friend and playtime. Being out with a child once per day is important but sometimes a struggle to combine it with daily chores.	Good to be home again. Home with children can be nice. Its calm, relaxed.
Thoughts (what are you thinking)	For example: Considering the usual timing and activities of the commute	For example: Prioritizing snacks that are portable	For example: Observing the child's behavior	For example: Reflecting on the overall experience

Recreational outing

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	Go out with all of us	- Prepare to be flexible during my trip. - No stress	Have fun!	Arriving home and have a smooth transition from outside to inside
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	Way ahead making plans with friends to meet at a park outside of town	- First: get bag ready (diaper, bottle, favorite toy) - Second: get stroller ready: is the snack tray attached to the aer? Do I need it? : Yes: Clean the tray from last trip (probably forgot it last time as we were in a rush as always). Prepare snack (cut apple, carrot, cucumber). Bottle with water for child. No: detach the snack tray and store it somewhere. I won't bring what I don't need or what can become cumbersome. Store stroller with snack tray in car trunk. Will the snacks be safe during this phase? Stay fresh? The lids open and I have food all over the back of the car ☹	- I don't offer snacks here, kid has the snacks in front of him, he can take it whenever he wants. That's at least the idea ;) - Meet with a friend at playground; Kid wants to run and climb in and out of buggy. I personally want to assist him as little as possible, he is 2 and can do the climbing part by himself. - Sandy fingers all over. Dirty clothing. That's ok. Part of it. but he wants food. arggh - Share food with other kids	- Never clean the stroller. Its the last thing that's on my mind after an outing. Kids are hungry, tired or we are in a rush to do something else (cook, prepare for bed time etc...) - leave
Feelings (what are you feeling)	Looking forward to be in nature with kids	For example: <i>Balancing practicality and entertainment</i>	Happy to be out. A bit concerned about kids nap time.	Good to be home again. Home with children can be nice. Its calm, relaxed.
Thoughts (what are you thinking)	Weather??? :/	For example: Considering activities that would enhance the experience		For example: Considering any improvements

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	For example: Ensuring child's comfort throughout the journey	For example: Providing the child with nourishing snacks to keep him satisfied	For example: Keeping the child entertained and satisfied	For example: Restoring order after the trip
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan travel - Long distance - Use of different means of transportation (train, plane, car) - For example: check travel arrangements	For example: pack diaper bag with...., select snacks	For example: offering snacks	For example: clean stroller
Feelings (what are you feeling)	For example: Stressed for the trip	For example: Stress to keep the child content	For example: Satisfaction if the child remains content	For example: Relief
Thoughts (what are you thinking)	For example: Considering potential hunger and boredom of the child	For example: Considering the logistics of feeding during the travel	For example: Monitoring the child's comfort and hunger levels	For example: Reflecting on the overall experience

Customer journey 3

Daily commute

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	Aim to have fun with kid, get him to have some fresh air and walk around so he gets a little tired	Ensure we have all we need to spend a few hours outside	Make sure kid and I have fun	Make sure kid is cleaned up and ready to play inside or go to bed
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	Check weather: do I need to bring the raincover or not?	- Make sure some toys are in the underseat basket (emmertje, schepje, etc) in case he gets bored - Prepare a sandwich or some fruit snacks for kid to eat at the petting zoo - Prepare the diaper bag: bring changing mat, wet wipes and sufficient diapers, a spare set of clothes, the fruit/sandwich snack, a moist cloth in a plastic cup, water bottle for kid and a book for him to play with - Do a last-minute diaper check before we leave - Put on his jacket, boots or alternatively his onesie windcoat if I plan on letting him play in the mud etc	- Walk with the stroller to the petting zoo. - Once inside, leave the stroller behind and let him wander off on his own while I keep an eye on him from a distance - Let him discover the zoo on his own - After a while, sit him down at a table, get myself a coffee and then start giving him his fruit and/or sandwich - Diaper bag with all stuff is lying in the underseat basket in case I need anything	- Leave the stroller at the bottom of the stairs - Take kid out: take of his jacket and his shoes - Dust-off the shoes outside if needed - Take kid upstairs - Wash his hands
Feelings (what are you feeling)	Excited: looking forward to going out	In control: I've got all we need for various circumstances	Enjoying the sun and the quality time with kid. Fun to see how he interacts with everything and everyone around us	Satisfaction: another outing accomplished ☺
Thoughts (what are you thinking)	Thinking what else we need to do today: possible to combine things with our visit to the petting zoo?	For example: Considering activities that would enhance the experience	Happiness	Now it's time for me-time

Recreational outing

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	Get our groceries in on time before kid needs to get his next meal and nap	Make sure kid is comfortable and ready to go for the trip	Do the groceries as efficient as possible, while keeping kid happy	Ensure all groceries end up at the right place (fridge, cupboard etc), and return all clothes, stroller etc in their original place
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Make sure my shopping list is ready - Think how many bags I need to bring (dependent on the amount of groceries we need) - Check weather: do I need to bring the raincover or not?	- Check kid's diaper: change if necessary - Get kid's shoes, jacket, scarf, gloves and mits on - Ensure the footmuff is properly installed on the stroller - Check whether the raincover, the XL shopping bag and additional cotton bags are still in the underseat basket of the stroller - Put the consignment bottles in the underseat basket (for returning at the super market) - Nb: I don't bring a diaper bag as we're only going on a 1 hour trip maximum	- Making fun with kid on our way to the supermarket: make funny faces, talk/brabble, tickle him to make him laugh, etc - In the supermarket: put the basket in between the chassis, right in front of kid. Sometimes hand him groceries so he can put it in the basket - If he starts crying/shouting, I already give him a piece of bread from the bakery, so he will remain quiet - At the checkout, I first fill the XL shopping bag, as that bag is most convenient as it's easy to carry into our house. Next I fill the other cotton bags which I then put in the underseat basket	- Take off the XL shopping bag and carry it upstairs (together with the other bags) - Leave the stroller at the bottom of the stairs in the corner
Feelings (what are you feeling)	A bit tense: need to make sure all is ready on time	In control: I've got all the stuff I need	Relaxed and a bit anxious to keep kid calm (I hate screaming/crying babies...)	Satisfaction: I managed to get all groceries in, clean up the consignment bottles, have fun with kid along the way and managed to be back home with him in time for his meal and his nap
Thoughts (what are you thinking)	Am I missing/forgetting anything?	Excited to go out and have fun with kid	"Have to keep kid busy so he doesn't get bored and start complaining"	Life's good ☺

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	Get to my parents by car	Get in the car on time	Keep kid happy (he doesn't like travel and cries a lot in the car)	Get kid out of the car seat and let him free
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Consider what I need to bring to my parents for kid: diaper bag, spare set of clothes, drinking bottle, snacks, dinner, some toys for during the trip, buggy - Check GoogleMaps for best route	- Pack the diaper bag - Pack toys, snacks, bottle - Bring the buggy (not the stroller: too heavy) - Put kid in the car seat - Bring his shoes, jacket etc	- Have multiple toys, bottles and snacks at hand to give to kid once he starts complaining - Feeding him pieces of bread one-by-one usually keeps him quiet for a long time - Focus on the road	- Undasp the car seat buckle. - Get his shoes on - Put him on the ground and let him run towards my parents
Feelings (what are you feeling)	Excited to go out. Anxious not to forget anything	Ready to go!	Nervous that kid may start crying	Relief: mission accomplished
Thoughts (what are you thinking)	Don't need to bring <u>everything</u> as my parents always have back-up stuff as well	Am I not forgetting anything?	It's quite a long ride and therefore a challenge for just visiting my parents for a coffee...	I'd like a coffee now!

Customer journey 4

Daily commute

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	Get somewhere without hassle	Get out quickly	Get to the location without hassle	Get on with my life
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan daily commute - Supermarket - Market - Going to daycare - Going to school to pick up the sister - Check the weather	As little preparation as possible	- Open and close the canopy - Recline the seat - Close the harness	Hang the Aer back onto the wall
Feelings (what are you feeling)	That is such a general question that I could be feeling anything	- Annoyment because my daughters is always doing other things than putting on her shoes or jacket - Deparate for some fresh air sometimes - In a hurry because my other daughter suddenly decided she needs to go the the bathroom and we are late	- Rushed. Need to walk fast - Relieved because we made it out. Sunshin has an instant effect of relaxation.	
Thoughts (what are you thinking)	Thinking about timing			

Recreational outing

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	.	Make sure I don't forget anything and that we have plenty of food and drinks for on the go	Enjoy the outing	Usually get the girls into bed quickly because we usually arrive home around their bedtime and I think regularity in sleep is important
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	Check if the location is suitable for buggy use or if I should bring my baby carrier instead.	- Make sure I have spare diapers, cleaning wipes, fresh set of pants with me - Usually getting my daughter into the stroller is easy but when she has a tantrum I have to fight with the buckles. Luckily that doesnt happen too often. - Prepare vegetables and put them into a sealable container. We usually pick things that will not make the stroller too dirty such as carrots or something she can easily eat by herself like a banana - Sometimes we prepare the food the day before and store it in the fridge to make sure we have a little less preparation left before we go	- I never used a snack tray because I never really saw the need for one. - Offer the vegetables to my daughter - Open and close the canopy - Recline the seat - Close the harness	- Hang the buggy back on the wall - Possibly hang the raincover somewhere else for drying
Feelings (what are you feeling)	For example: Excitement for the activity	Same as daily commute, but need to think about everything more thoroughly because we will be away for a longer time.		
Thoughts (what are you thinking)	For example: Considering the duration of the outing			

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	Find a holiday location that is fun for my wife and I and the kids. Animals in the place where we stay is a big plus	- Make sure the buggy does not get damaged on the trip. - Travel to the airport	- Not sure which travel this is. To the airport or the actual holiday? - Make sure everyone is relaxed, well rested, fed etc	Enjoy the holiday
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Plan travel - Long distance - Use of different means of transportation (train, plane, car) - For example: check travel arrangements	- Do the usual holiday packing (it's a lot when you have to choose clothes for 2 girls for one week including spares for when they have accidents. - Grab the transport bag raincovers etc		For example: clean stroller
Feelings (what are you feeling)	For example: Stressed for the trip	Even more preparing. My wife makes too do lists that are so long that sometimes I don't feel like going on the holiday anymore ☹️		
Thoughts (what are you thinking)	For example: Considering potential hunger and boredom of the child			

Customer journey 5

Daily commute

	Plan Commute	Prepare for Commute	During the Commute	After the Commute
Goals (what do you want to achieve)	Smooth transition from home to daycare	Make sure everything is gathered for the day.	Make sure the child is comfortable.	Parking the Car or Bike
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	Plan for Car or Bike + Child Carry bag commute	- Breakfast for child - Pack diaper bag: mother milk, clothes and other necessities like cream etc. - Put shoes and jacket on. - Bike + Child Carry bag Put mitten on (when cold outside.	- Car: no check necessary - Bike commute: mittens attached for warm hands	- Car Seat: no extra handling. - Bike + Child Carry bag: put away
Feelings (what are you feeling)	Sense of planning	Sense of checking	- Focus on driving when by car - Checking intermittently when on the bike.	Job well done
Thoughts (what are you thinking)	Plan	Plan what to bring, Check on items	Check comfort	Review the Car of Bike commute and comfort.

Recreational outing

	Plan Outing	Prepare Outing	During Outing	After the Outing
Goals (what do you want to achieve)	Plan hike	Pack bag	Keep the child entertained and happy	Replacing and cleaning
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Check weather - Check route by car - Check route by foot - Check timing - Check drinks and food for baby - Plan pitstops and possible eating/drinking accommodations (Bar/restaurant)	- Pack bag: - Bring correct amount of water, food, diaper and clothes and sunscreen. - Child Carry Bag and	- Drinking for child - Food for child - Check diaper state - Replace diaper	- Clean the Child Carry bag. - Put away dirty clothes and clean items when necessary.
Feelings (what are you feeling)	Busy planning	Busy with packing	Enjoy the trip as much as possible	Clean and relax
Thoughts (what are you thinking)	Plan plan plan	Considering items that would enhance the experience	- Check the child's enjoyment and comfort - Check planning compared to actual activity.	What to bring change next time

Travel

	Plan Travel	Prepare Travel	During Travel	After the Travel
Goals (what do you want to achieve)	Comfortable flight + car travel to holiday destination	For example: Providing the child with nourishing snacks to keep him satisfied	Keeping the child relaxed and satisfied	For example: Restoring order after the trip
Actions & Touchpoints (what do you do & what part of the product do you interact with (stroller/snack tray))	- Location to go: - Weather - Activities - Food - Plan travel - Check timing for flights - Check commute/transfer - Check locations and activities to do: swimming, hiking, etc.	- Book flights, car, accommodation - Pack essential items for flight. - Consider normal and emergency planning, lost bags, lost stroller etc.	- Eating, drinking, playing games. - Looking outside the airplane window	For example: clean stroller
Feelings (what are you feeling)	Excited for holiday	Busy with planning and booking	Accommodating and be flexible	Sleep!
Thoughts (what are you thinking)	Plan for contingencies; delays etc.	Plan what to bring in rug sack and what as carry-on luggage	Planning and timing meals and sleep during travel	How to get in the normal rhythm smoothly

Appendix L Safety standards

Safety norms EU

This section discusses European standards and their specific clauses relevant to the yet-to-be-designed product.

EN1888-1

EN1888-1 is a European standard for articles for infants and toddlers, the standard specifies safety requirements and test methods for pushchairs and prams. The final product will be an accessory of a pushchair. The following clauses within this standard are important within this project. Within the clauses, the term protected volume is used. This means the volume accessible to the child (occupant) when sitting or lying in the pushchair or pram.

8.2.1 Holes and openings

1. No access for a 7 mm diameter finger probe in rigid materials
 - a. Requirement: No completely bounded openings in rigid materials shall be accessible to a 7mm probe within the protected volume.
 - b. Exceptions:
 - i. Unless the depth of penetration is less than 10mm.
 - ii. Unless the shape assessment probe, a probe with a radius 2.5mm and a 5 or 12mm width, enters.
 - iii. The protection system is exempt from this requirement.
 - c. Test method: Verify whether the 7 mm finger probe with maximum 30N force penetrates 10 mm or more in opening regardless of orientation. If this occurs, the shape assessment probe shall also enter 10mm or more with an applied force of maximum 5N.
2. No holes larger than 7mm in mesh
 - a. Requirement: Holes in mesh should not exceed 7 mm.
 - b. Test method: Use a conical probe, a probe that starts with a radius of 2.8mm and ends with a diameter of 7mm, to check if holes are penetrable to a diameter of 7 mm under a force of up to 30N.

8.3.2 Shearing hazards

1. No scissoring points into which the 12mm diameter probe cannot penetrate.
 - a. Requirement: After correct set up, there shall be no hazardous scissoring points within the protected volume that close to less than 12 mm or into which the 12 mm probe cannot penetrate.
 - b. Test method: Check parts for hazardous scissoring movements and limit the gap to the smallest distance possible without affecting flexibility. Test with a force of 30N whether the 12 mm probe can penetrate between moving parts.

8.3.3 Crushing hazards

1. No hazardous compression point that can close to less than 12 mm.
 - a. Requirement: After correct set up, there shall be no hazardous compression point within the protected volume that can close to less than 12 mm.
 - b. Exception: Unless there is always less than 5 mm clearance.

8.7 Hazardous edges and protrusions

1. Free from burrs and sharp edges
 - a. Requirement: Exposed edges, surfaces and protrusions within the protected volume shall be rounded or chamfered and free from burrs and sharp edges. All other surfaces shall also be free of burrs and sharp edges.

8.9 Stability

1. The vehicle shall not tip over
 - a. Requirement: The vehicle shall not tip over when the following test procedure is performed. In addition, a baby carriage body, seat unit or car seat restraint must not become detached in the process
 - b. Test procedure:
 - i. Positioning the vehicle: The vehicle shall be placed on a test surface with a 12-degree slope without using the parking device. The product shall be carefully placed against a 25 mm stop without applying force. If the vehicle passes over this stop use a 50mm stop . Perform the tests in the order: first forward, then backward and then perpendicular to the slope. The perpendicular position is used to test lateral stability.
 - ii. Stability of pushchairs: Adjust the backrest to its upright position. Position a 15kg test mass, a cylinder measuring 200mm in diameter and 300mm in height, against the backrest. Raise the mass at least 50mm above the seat while ensuring continuous contact with the backrest. Lower the mass gently until it rests on the seat under its own weight, ensuring it's centered on the backrest.

8.10.3 Irregular surface test

1. No breakage, deformation and collapses after testing on irregular surface
 - a. Requirement: When testing according the test method:
 - i. No part of the product breaks or deforms that can impair the safety of the vehicle.
 - ii. The vehicle shall not collapse.
 - iii. The seat unit connections to the chassis stays secure and undamaged throughout and after testing.
 - iv. The devices used to connect the seat unit to the chassis shall not become disconnected, loosened or damaged during or after testing.
 - v. After testing the vehicle still meets the requirements of hazards of moving parts (8.3) and stability (8.9).
 - b. Exception: Signs of wear shall not be considered as failure.
 - c. Test method: Position the vehicle on the irregular surface test equipment, ensuring the handle can attach to the independent articulating arms. Secure a 15kg test mass, a

cylinder measuring 200mm in diameter and 300mm in height, centrally against the backrest. Adjust the backrest to its most upright position. Limit the test mass movement to 50mm maximum. Conduct 72 000 passes over the configuration at a speed of 5km/h.

EN1888-2

EN1888-2 is a European standard that applies in conjunction with EN1888-1. This standard specifies additional safety requirements and test methods for strollers designed for children weighing more than 15kg and up to 22kg. The following clauses within this standard are important within this project.

6.3 Stability

1. The vehicle shall not tip over
 - a. Repeat the test procedure (EN1888-1, 8.9), using a 22kg test mass, a cylinder measuring 220mm in diameter and 320mm in height, instead of the 15kg test mass.

6.4.2 Irregular surface test

1. No breakage, deformation and collapses after testing on irregular surface
 - b. Perform the test (EN1888-1, 8.10.3) using a 22kg test mass, a cylinder measuring 220mm in diameter and 320mm in height, for 24 000 additional cycles.

EN14372

This European standard contains safety requirements and test methods for cutlery and eating utensils used by a child up to 39 months of age to eat by himself or with help from another person. The following clauses within this standard are important within this project.

6.2.2 Sharp points

1. No accessible sharp points
 - a. Requirement: Accessible points shall not be sharp
 - b. Test method: Test according to EN 71-1 (8.12).
 - i. A point tester is used on an accessible sharp point to check if it penetrates a specific distance into the tester.

6.2.3 Sharp edges

1. No accessible sharp edges
 - a. Requirement: Accessible edges shall not be sharp
 - b. Test method: Test according to EN 71-1 (8.11).
 - i. A self-adhesive tape is attached to a mandrel and rotated 360 degrees along the tested edge. The tape is then inspected for any cuts in its length.

6.2.4 Small parts

1. No parts entirely fit within the small parts cylinder

- a. Requirement: No component of the tested sample shall entirely fit within a small parts cylinder with a 31.7mm diameter opening and increasing depth from 25.4mm to 57.1mm, without compression, regardless of orientation.

6.2.5 Holes

- 1. No access to a 5,5mm diameter rod.
 - a. Requirement: No hole accessible for a 5.5mm diameter rod insertion in materials with a Shore A hardness of more than 60 IRHDs.
 - b. Exceptions:
 - i. Unless the hole also fits a 12mm diameter rod.
 - ii. Penetration is under 10mm.

EN71-1

EN71-1 is a European standard that specifies safety requirements and test methods for toys used by children under 14 years of age. The clauses below are relevant to this project.

4.9 Protruding parts

- 1. Required protection for tubes and rigid projections
 - a. Requirement: Tubes and rigid projections posing a puncture hazard to children shall be protected. This protection remains during testing and shall not be removed.

4.11 Mouth-actuated toys and other toys intended to put in the mouth

- 1. No parts entirely fit within the small parts cylinder
 - a. Requirement: Toys meant for mouthing, along with removable mouthpieces and other removable parts, shall not entirely fit within the small parts cylinder with a 31.7mm diameter opening and increasing depth from 25.4mm to 57.1mm.
 - b. Test method: Put the component into the small parts cylinder without compression and in any orientation. Check if the toy or component fits entirely within the cylinder.

European directive general product safety

The European General Product Safety Directive imposes general safety requirements to ensure high levels of consumer health and safety. This directive contains requirements not covered by specific sectoral legislation within the EU. It contains general requirements for product safety, including obligations for manufacturers to introduce safe products onto the market. There are no specific clauses of additional relevance to this project.

Safety norms US

This section discusses US standards and their specific clauses relevant to the yet-to-be-designed product.

ASTM F833

This standard establishes safety requirements and test methods for carriages and strollers. The final product will be a stroller accessory. Highlighted below are the clauses that are important within this project.

5.14 - 7.19 Tray/grab bar protective covering requirement

1. No foam material unless it is covered
 - a. Requirement: Trays that are accessible and in front of the occupant shall not contain foam material.
 - b. Exception: The covering prevents the foam material from being exposed
 - c. Test method:
 - i. When using a removable covering:
 1. Attach a force gauge to the covering using a clamp. The test is successful if the covering material cannot be grasped with thumb and forefinger to be clamped by 19 mm washer jaws.
 2. Apply a gradual force on the covering of 67N over a period of 5 seconds and maintain this for another 10 seconds. Check if the foam has become uncovered.

6.3- 7.4 Stability

1. The vehicle shall not tip over
 - a. Requirement: The product shall remain on the test surface and not tilt when tested.
 - b. Test method:
 - i. Stability with occupant in the product: The product is placed in use position with the wheels in a 12 degree inclined plane. Place the backrest upright, but test in both use positions, upright and reclined. Place a CAMI dummy in the seat and secure the restraint system. Then place a stopper on the plane against the wheels. Last, place the stroller on the plane in all directions in which instability is greatest.
 - ii. Front stability: Place the stroller in a the recommended position of use with the wheels on a horizontal surface. Using a disc, apply a force of 178N vertically downward to a component in front of the front edge of the seat without the disc sliding off. Gradually apply the force within 5 seconds and maintain it for 10 seconds at the location where it would tilt fastest. If the disc slides from this spot onto the footrest it is considered a pass for this particular spot.

6.8 - 7.12 Passive containment/foot opening

1. Full passage of head probe or no full passage of torso probe
 - a. Requirement: This requirement is important for strollers with a tray or grab bar that create a (partially) restricted opening for the occupant. This opening shall allow full passage of the head probe or shall not allow full passage of the torso probe.
 - b. Test method:
 - i. Tray or grab bar locking positions: attach the tray or grab bar and secure the wheels in the normal position to prevent forward movement. Place the main probe next to the most suitable opening. Gradually turn the stroller 90 degrees in 5 seconds with the front wheels as the pivot point, repeat in 10 seconds. The probe shall remain in contact with the seat during the test. If the probe passes

completely through the opening, the stroller meets the criteria. If necessary, perform the torso probe test. Insert the torso probe and gradually apply a force of 111N within 5 seconds, repeat within 10 seconds. If the torso probe does not fit, the test is successful.

- ii. Testing tray/ grab bar locking positions: secure the tray or bar in an unlocked position. For 10 seconds, apply a force of 2.3 kg to the tray in the direction of possible change. If the tray/grab bar remains in the unlocked position, leave it in the stop position. Lock the wheels to prevent forward movement. Place the main probe next to the opening and gradually turn the cart 90 degrees with the front wheels as the pivot point within 5 seconds, repeat within 10 seconds. If the main probe passes through the opening, the stroller meets the criteria. If necessary, perform the torso probe test. Insert the torso probe and gradually apply a force of 111N within 5 seconds, repeat within 10 seconds. If the torso probe does not fit, the test is successful.

7.15 Frame folding, scissoring, shearing and pinching

1. No injury from scissoring, shearing or pinching
 - a. Requirement: The edges of rigid parts should not allow a 5.33mm probe to pass if a 9.53mm probe does not pass.
 - b. Test method:
 - i. Fold stroller and convertible carriage/stroller: Place stroller in upright position. Mark hinges and parts that potentially scissor, pinch or shear during folding of the unit and are within the width of the stroller. Each folding action should be evaluated separately. Tray or grab bar movements that do not result from unfolding the stroller are excluded. Measure the distance between the centers of the front and rear wheels in use position. Begin folding the unit until the wheel axles are 2/3 of the distance previously measured. From this point, check marked areas for scissoring, shearing and pinching. As the stroller moves from this position to the upright position.

Safety norms Australia

This section discusses Australian standards and their specific clauses relevant for this project.

AS 2088-2023

9.8 Stability

1. The vehicle shall not tip over
 - a. Requirement: The vehicle shall not tip over when the following test procedure is performed.
 - b. Test procedure: Put the backrest in its fully upright position. Place the vehicle on a horizontal surface. Storage containers above the seating area shall be loaded. Apply a downward force of 50N in the middle of the handle. Observe whether the vehicle tips over.

2. The vehicle shall not tip over in reclined position
 - a. Requirement: The vehicle, with a backrest that reclines to an angle greater than 150 degrees, shall not tip over when the following test procedure is performed.
 - b. Test procedure: Place the vehicle on a horizontal surface. Adjust the backrest to its fully reclined position. Storage containers above the seating area shall be loaded. A 9kg test dummy shall be placed centered in a lying position. Observe whether the vehicle tips over.

9.12 Security of latching devices for accessories

1. No structural defect on latching devices
 - a. Requirement: The latches must remain locked and not structurally defective and the accessory must not become detached from the vehicle
 - i. Exception: if the accessory becomes detached, neither the vehicle nor the accessory shall tip over, according to previous stability testing.
 - b. Load the vehicle. Attach 5kg to the center of the vehicle handle. Place the vehicle on a test ramp with stops. Run the vehicle down the ramp and collide with the stop. Check for any disengagement or structural defects on a latch.

9.15 Other accessories (appendix B,C,D)

1. No structure failure during durability in a stationary condition
 - a. Requirement: There is no structural failure when the following test procedure is performed.
 - b. Test method: Place the vehicle on a horizontal surface, with the parking brakes applied. Place a static mass on all seating and lying surfaces and in the storage container. Let this mass sit for 8 hours. After this, remove the static mass. Examine the vehicle for structural defects.
2. No structural failure at durability in kerb mounting
 - a. Requirement: There is no structural failure when the following test procedure is performed.
 - b. Test method: Place the vehicle on a flat surface in the upright position. Load the vehicle and lock the wheels. Apply force to the lever, moving up and down so that the rear wheels and front wheels are lifted 120mm off the floor and put back in a controlled manner. Do this for 3 000 cycles at a frequency of 15 cycles per minute. Fold the vehicle out and in 10 times. Check the vehicle for structural failure.

Appendix M Program of Requirements

Program of Requirements

Performance

Nr.	Type R/W	Description	Source	Fulfilled Y/N
1.1	R	The product shall be applicable to the Aer+.	Product analysis	
1.2	W	The product should be applicable to several strollers of Joolz.		
1.3	W	The product should use visual presentation techniques to improve children's acceptance of fruits and vegetables.	Nutritious meal for 1-4 year-olds	
1.4	R	The product shall promote fine motor skills.	Fine motor skills	
1.5	R	The product shall promote independence.	Independence	
1.6	R	The product shall be able to store at least food with a size of 80mm x 90mm x 25mm.	Product analysis	
1.7	R	The product shall be able to hold a cup.	User analysis	
1.8	W	The product should be easy to clean.	User analysis	
1.9	R	The product shall fold in with the Aer+.	User analysis	
1.10	W	The product should minimize the mess in the stroller while eating.	User analysis	
1.11	W	The product should be usable with minimal extra steps.	User analysis	
1.12	R	Child can climb in and out with 1 operation by the parent.		
1.13	R	The food shall not fall off while driving.		
1.14	R	The product shall remain upright when the stroller is declined.		

Design

Nr.	Type R/W	Description	Source	Fulfilled Y/N
2.1	R	The design matches the Joolz design style.	Joolz design style	
2.2	R	The product shall fit the current design of the Aer+.		

Ergonomics

Nr.	Type R/W	Description	Source	Fulfilled Y/N
3.1	W	The product should be at elbow length of children ages 1 to 4 years in the seated position, measured from the seat, for optimal use.	Ergonomic research	
3.2	W	The child should sit upright when using the product.	Ergonomic research	
3.3	W	The product should also function as a bumper bar to actively engage with the environment.	Ergonomic research	

Engineering

Nr.	Type R/W	Description	Source	Fulfilled Y/N
4.1	W	The product should have minimal impact on the environment and society throughout its life cycle.	Material analysis	
4.2	R	The product shall be weather resistant.		

4.3	W	The production cost should be as low as possible.		
4.4	W	The product should be as light as possible.		
4.5	R	Users shall be able to attach the product within 1 minute.	User analysis	
4.6	R	Users shall be able to detach the product within 1 minute.	User analysis	
4.7	R	The product should cost a maximum of 13 euros.		

Legislation

Nr.	Type R/W	Description	Source	Fulfilled Y/N
5.1	R	The product shall be in compliance with European standards; EN1888-1.	Legislation	
5.2	R	The product shall be in compliance with European standards; EN1888-2.	Legislation	
5.3	R	The product shall be in compliance with European standards; EN14372.	Legislation	
5.4	R	The product shall be in compliance with European standards; EN71-1.	Legislation	
5.5	R	The product shall be in compliance with European standards; EN71-3	Legislation	
5.6	R	The product shall be in compliance with European standards; European directive general product safety.	Legislation	
5.7	R	The product shall be in compliance with American standards; ASTM F833.	Legislation	
5.8	R	The product shall be in compliance with Australian standards; AS 2088-2023.	Legislation	
5.9	R	The product shall be in compliance with European regulations for Food contact materials; REACH.	Legislation	
5.10	R	The product shall be in compliance with European regulations for Food contact materials; Regulation (EC) No 1935/2004.	Legislation	
5.11	R	The product shall be in compliance with American regulations for Food contact materials; 21 CFR chapter I subchapter B (Chemical requirements).	Legislation	
5.12	R	The product shall be in compliance with Australian regulations for Food contact materials; AS 2070 – 1999.	Legislation	
5.13	R	The product shall be in compliance with Recycled Food contact materials according to European regulations; Commission Regulation (EU) 2022/1616 of 15 September 2022 on recycled plastic materials and articles intended to come into contact with food.	Legislation	

Test methods

Performance

Nr.	Type R/W	Description	Test method
1.1	R	The product shall be applicable to the Aer+.	Testing with a prototype.
1.2	W	The product should be applicable to several strollers of Joolz.	Testing with a prototype.
1.3	W	The product should use visual presentation techniques to improve children's acceptance of fruits and vegetables.	Passed when visual presentation techniques such as pictorial nudges (images of fruits and vegetables) and separate compartments are used.
1.4	R	The product shall promote fine motor skills.	Passed when the product offers an activity requiring the small muscles in the hand (activity requiring fine motor skills).
1.5	R	The product shall promote independence.	Passed when the product offers choices, familiarizes with independent actions and/or encourages self-responsibility.
1.6	R	The product shall be able to store at least food with a size of 80mm x 100mm x 25mm.	Passed when the product can store at least food with a size of 80mm x 100mm x 25mm.
1.7	R	The product shall be able to hold a cup.	Passed when the product can hold a cup.
1.8	W	The product should be easy to clean.	Testing with a prototype.
1.9	R	The product shall fold in with the Aer+.	Testing with a prototype.
1.10	W	The product should minimize the mess in the stroller while eating.	Testing with a prototype and test person.
1.11	W	The product should be usable with minimal extra steps.	Testing with a prototype.
1.12	R	Child can climb in and out with 1 operation by the parent.	Testing with a prototype and test person.
1.13	R	The food shall not fall off while driving.	Testing with a prototype.
1.14	R	The product shall remain upright when the stroller is declined.	Testing with a prototype.

Design

Nr.	Type R/W	Description	Test method
2.1	R	The design matches the Joolz design style.	Feedback session with the Joolz design team.
2.2	R	The product should fit the current design of the Aer+.	Feedback session with the Joolz design team.

Ergonomics

Nr.	Type R/W	Description	Test method
3.1	W	The product should be at elbow length of children ages 1 to 4 years in the seated position, measured from the seat, for optimal use.	Testing with a prototype and test person whether the height of the product is between 125mm and 187mm measured from the seat surface.
3.2	W	The child should sit upright when using the product.	Testing with a prototype and test person whether seat-to-back angle is in between 90-120 degrees (Dimensions.com, n.d.).
3.3	W	The product should also function as a bumper bar to actively engage with the environment.	Passed when the product functions as a bumper bar.

Engineering

Nr.	Type R/W	Description	Test method
4.1	W	The product should have minimal impact on the environment and society throughout its life cycle.	Using CES Edupack to research the impact of materials and production techniques on environment and society throughout its life cycle.
4.2	R	The product shall be weather resistant.	Research with CES Edupack whether the materials are weather resistant.
4.3	W	The production cost should be as low as possible.	Check using CES Edupack.
4.4	W	The product should be as light as possible.	Check using SolidWorks and CES Edupack.
4.5	R	Users shall be able to attach the product within 1 minute.	Testing with a prototype.
4.6	R	Users shall be able to detach the product within 1 minute.	Testing with a prototype.
4.7	R	The product should cost a maximum of 13 euros.	Passed when the cost does not exceed 13 euros.

Legislation

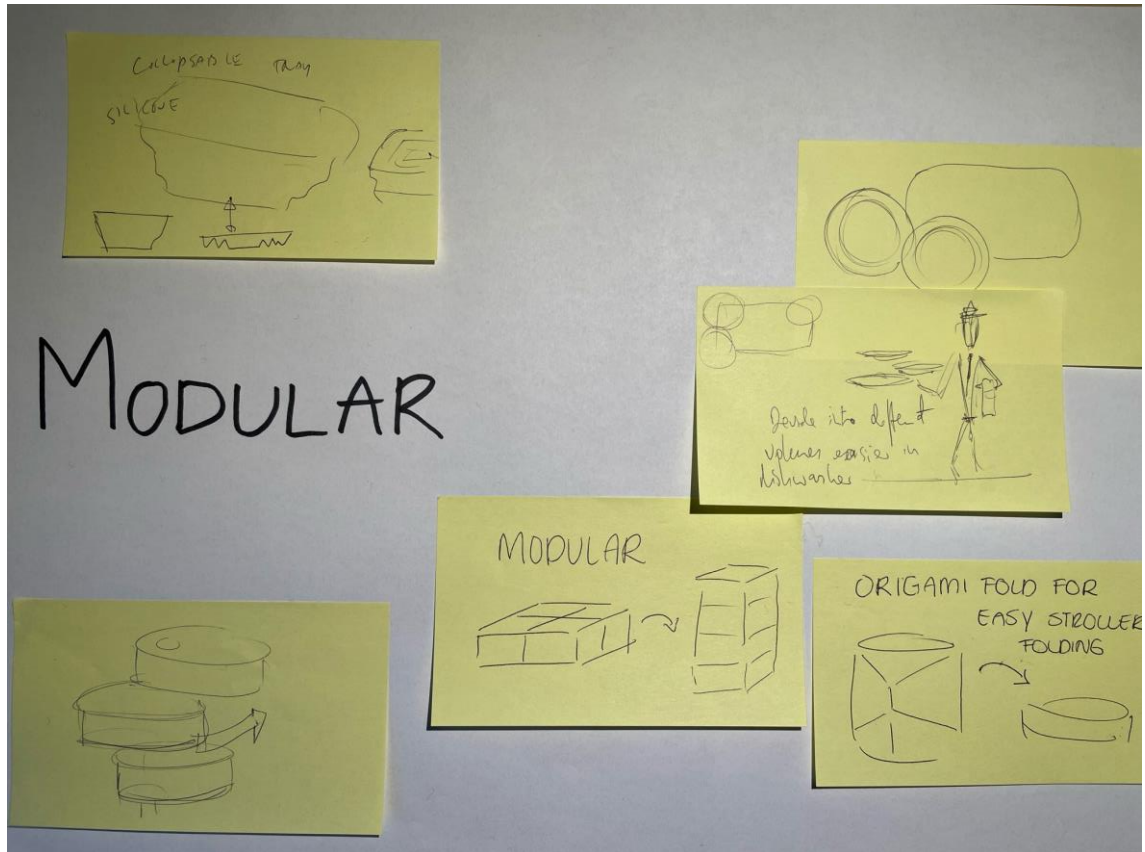
Nr.	Type R/W	Description	Test method
5.1	R	The product shall be in compliance with European standards; EN1888-1.	Testing according to the mechanical safety requirements of EN1888-1.
5.2	R	The product shall be in compliance with European standards; EN1888-2.	Testing according to the mechanical safety requirements of EN1888-2.
5.3	R	The product shall be in compliance with European standards; EN14372.	Testing according to the mechanical safety requirements of EN14372. Share standard with supplier so they can consider chemical requirements.
5.4	R	The product shall be in compliance with European standards; EN71-1.	Testing according to the mechanical safety requirements of EN71-1.
5.5	R	The product shall be in compliance with European standards; EN71-3.	Share standard with supplier so they can consider chemical requirements.
5.6	R	The product shall be in compliance with European standards; European directive general product safety.	Testing according to the mechanical safety requirements of European directive general product safety. Share standard with supplier so they can consider chemical requirements.
5.7	R	The product shall be in compliance with American standards; ASTM F833.	Testing according to the mechanical safety requirements of ASTM F833.
5.8	R	The product shall be in compliance with Australian standards; AS 2088-2023.	Testing according to the mechanical safety requirements of AS 2088-2023. Share standard with supplier so they can consider chemical requirements.
5.9	R	The product shall be in compliance with European regulations for Food contact materials; REACH.	Share standard with supplier so they can consider chemical requirements.
5.10	R	The product shall be in compliance with European regulations for Food contact materials; Regulation (EC) No 1935/2004.	Share standard with supplier so they can consider chemical requirements.
5.11	R	The product shall be in compliance with American regulations for Food contact materials; 21 CFR chapter I subchapter B (Chemical requirements).	Share standard with supplier so they can consider chemical requirements.

5.12	R	The product shall be in compliance with Australian regulations for Food contact materials; AS 2070 – 1999.	Share standard with supplier so they can consider chemical requirements.
5.13	R	The product shall be in compliance with Recycled Food contact materials according to European regulations; Commission Regulation (EU) 2022/1616 of 15 September 2022 on recycled plastic materials and articles intended to come into contact with food.	Share standard with supplier so they can consider chemical requirements.

Appendix N Brainstorm 1

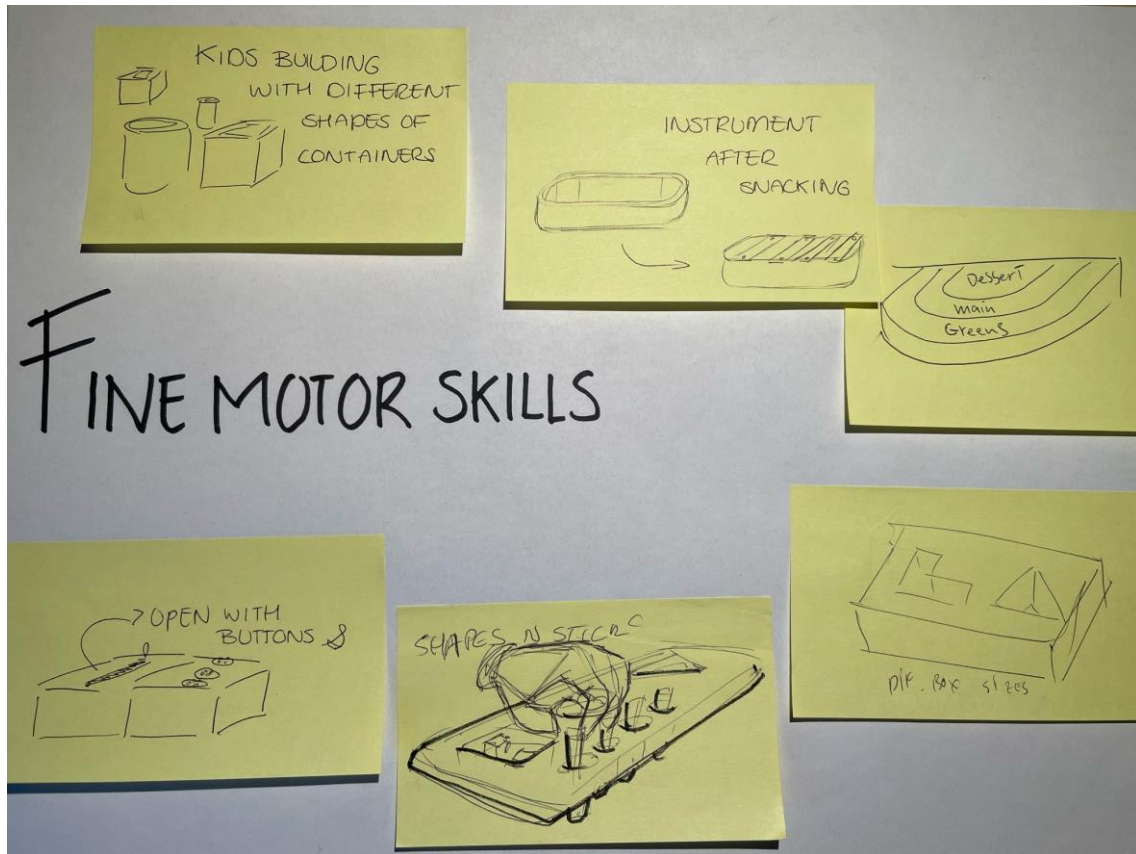
Modular

Within this direction are ideas on how the product can be customized. The product can be used in different ways, which suits different needs of users. For example, the product can carry different types of food in different ways.



Fine motor skills

The image below shows ideas that address the promotion of fine motor skills. By attaching an activity to the product that requires the use of small muscles in the hand, fine motor skills are promoted.



Keep food fresh

The image on the next page discusses ways to keep food fresh. Healthy products such as fruit pieces can spoil quickly. Keeping so-called fresh foods fresh should be considered in order to carry a variety of foods.



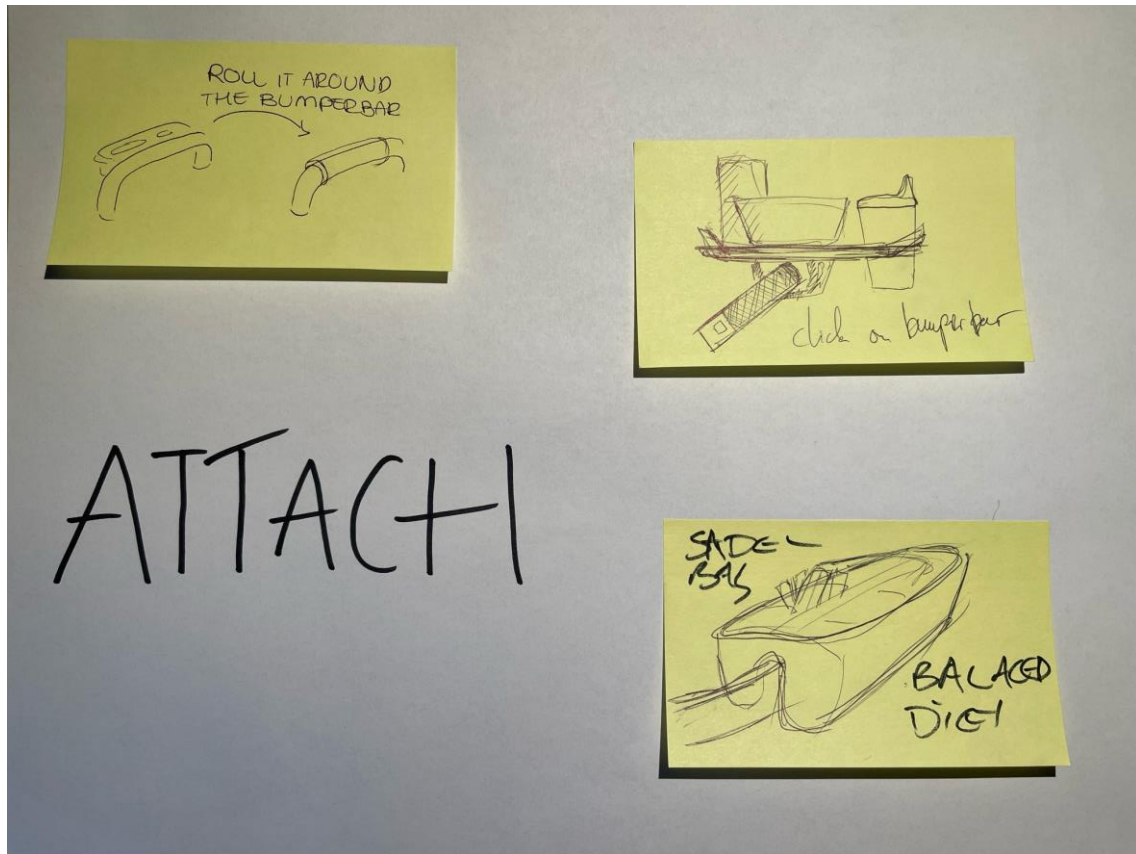
Play

In addition to fine motor skills, this direction looks at other ways to connect play elements or learning elements to the product. These are diverse out of the box idea sketches of new functions the product could have.



Attach

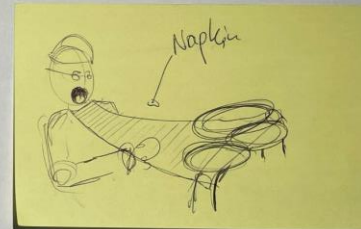
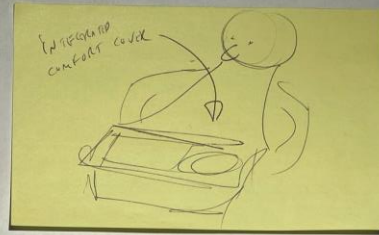
This direction addresses ways in which the product can be connected to the stroller. Currently, the snack tray is clicked onto the stroller at the location of the bumper bar. Changing the position or attachment can make this a more ergonomic spot for the product.



No mess

The last direction addresses the problem that the stroller quickly becomes a mess when the child eats a snack in the stroller. All interviewees considered this a major challenge while feeding their child on the go.

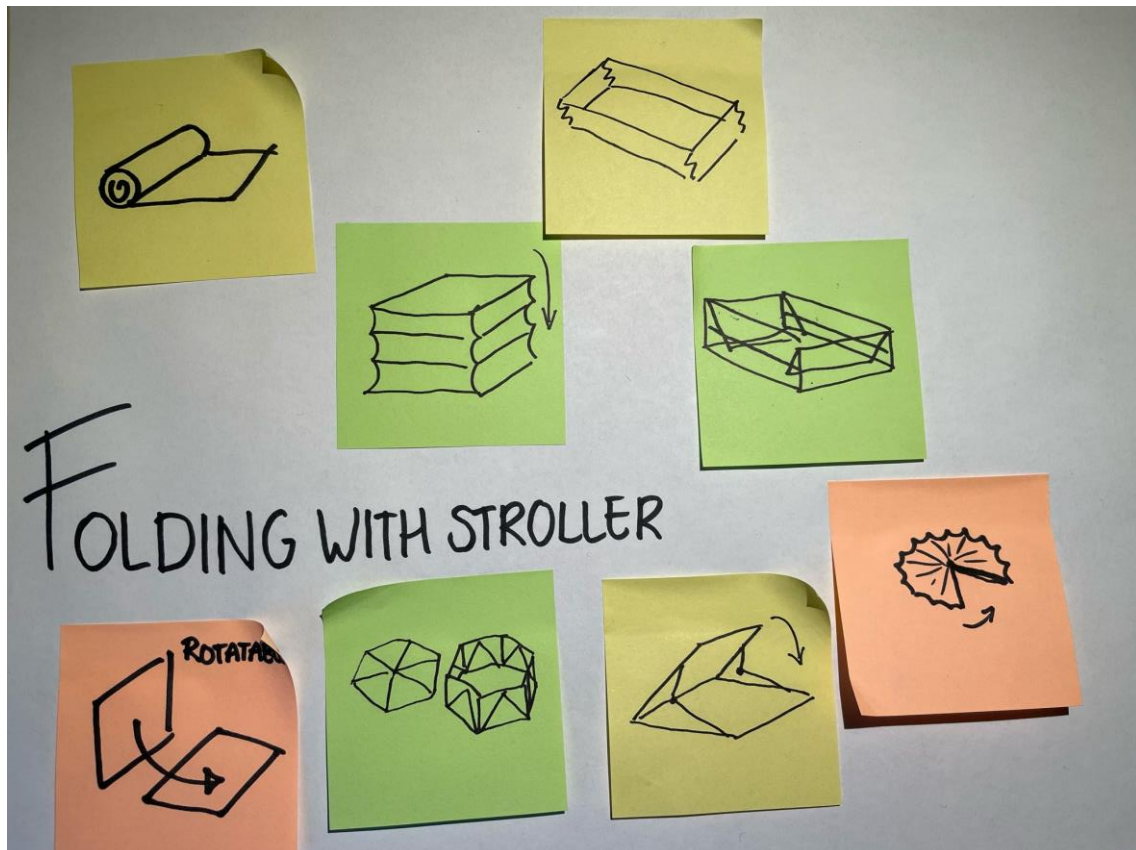
NO MESS



Appendix O Brainstorm 2

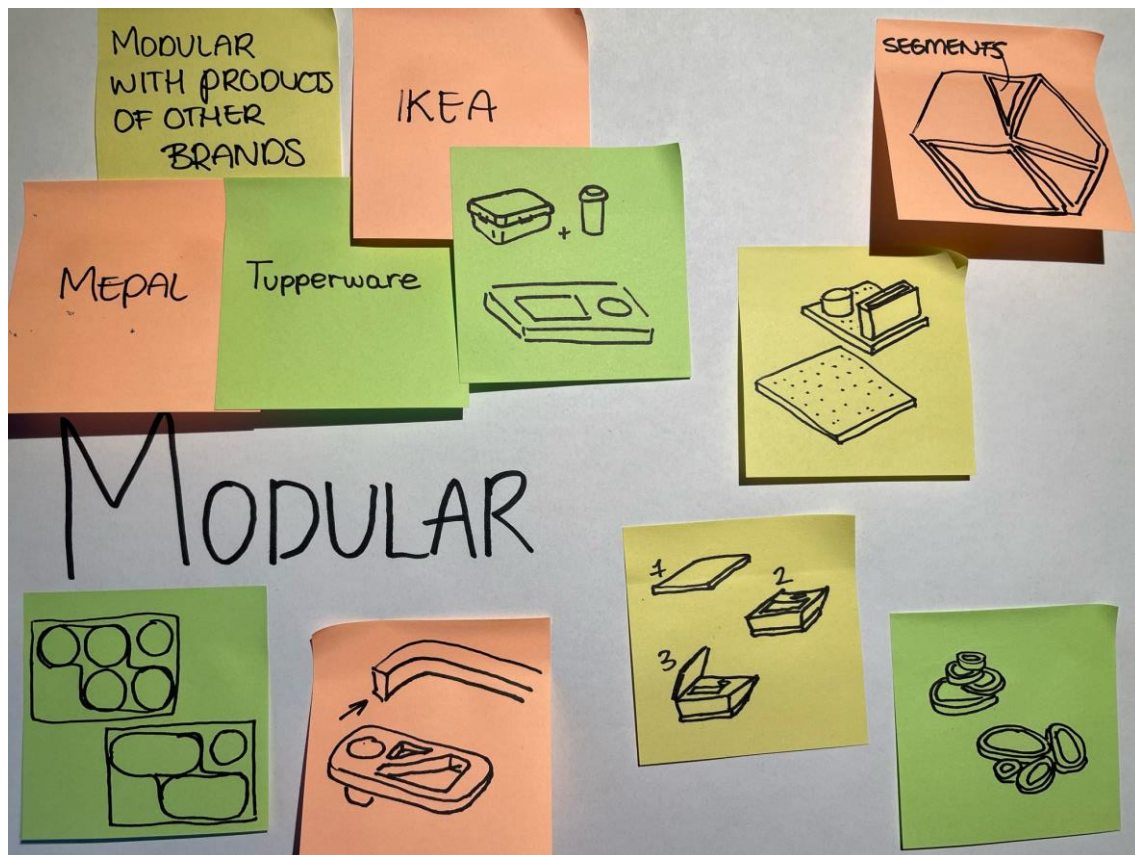
Folding with stroller

The image below shows idea sketches of ways the product can fold with the stroller. Currently, the snack tray cannot fold with the stroller so it must be taken off after use and before folding. This direction addresses parents' desire for an easy to use and practical product.



Modular

Within this direction, ideas are conceived for using the product in different ways so that parents can bring different types of food and different needs of parents can be met. The direction also looks at using food containers from other brands.



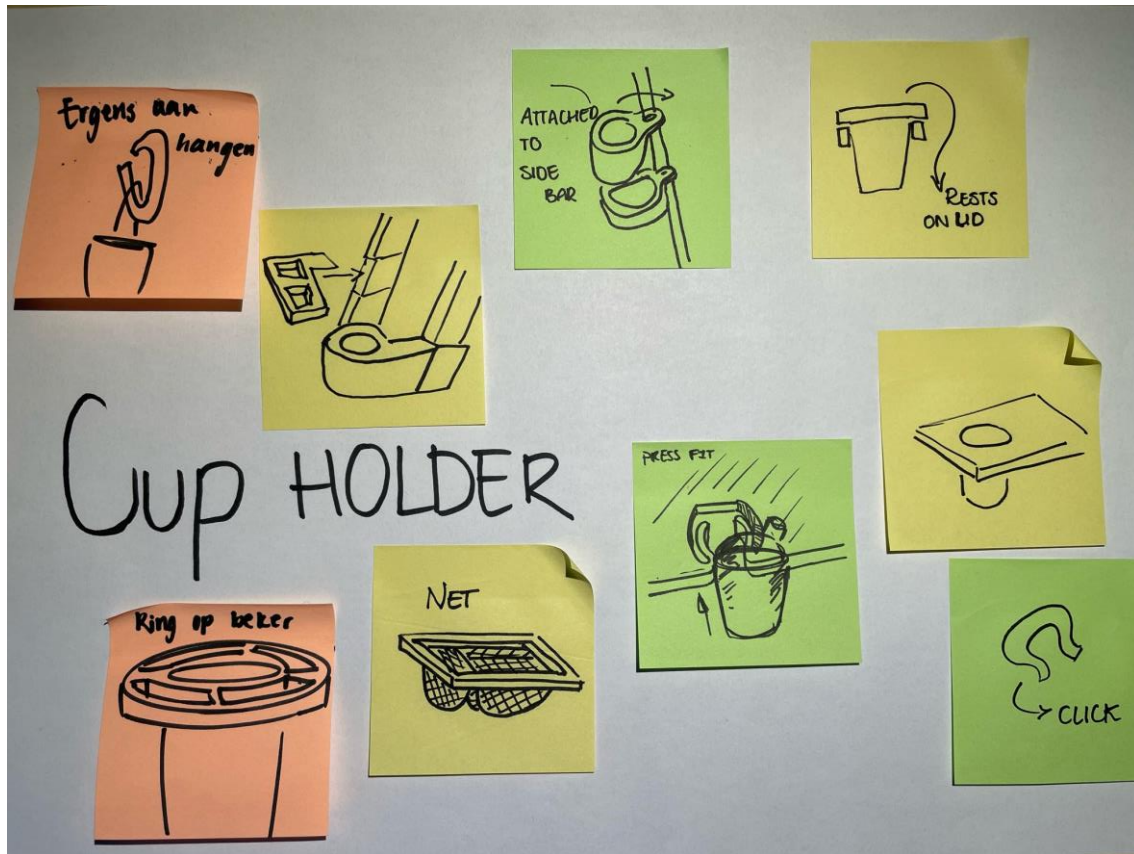
Mess

The image on the next page addresses the problem of children quickly getting the stroller dirty while eating in the stroller. This is a problem that was acknowledged by all parents in the interviews.



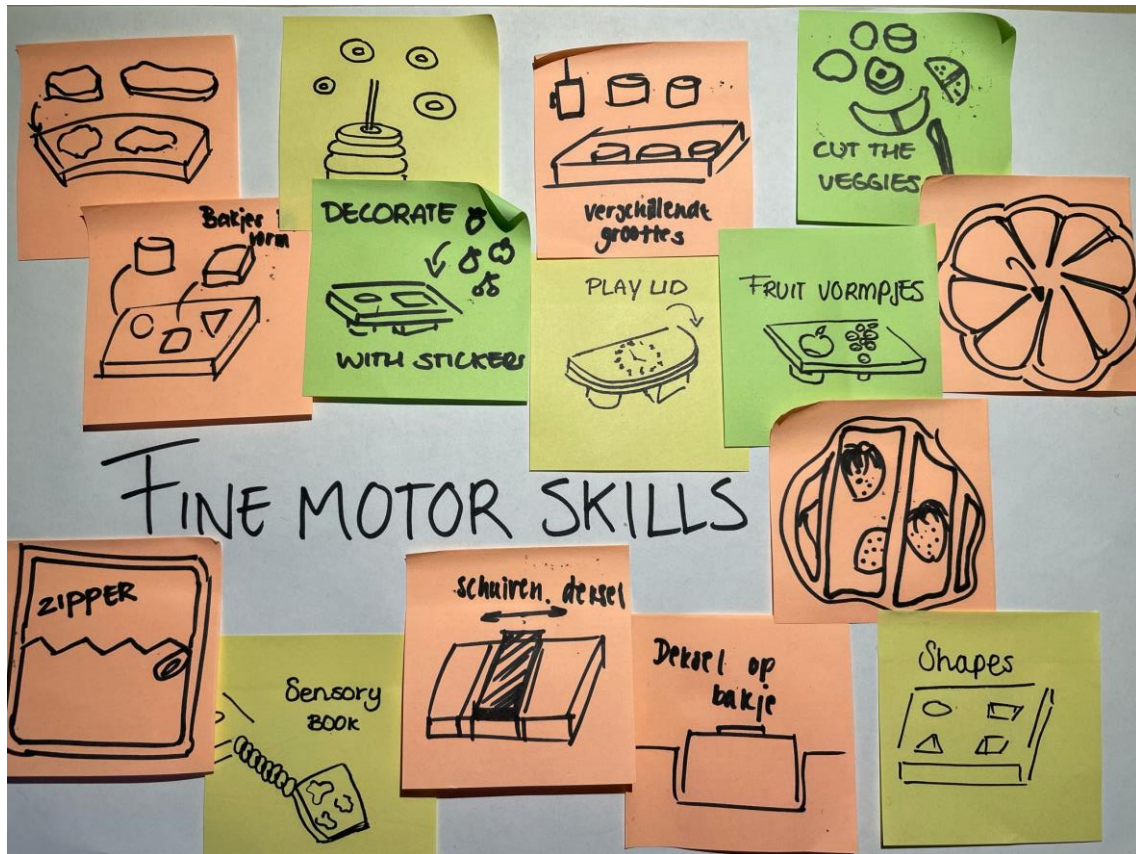
Cup holder

Within this category, ways to accommodate different cups on the product and how to attach a cup to the product are considered. By creating a universal cup holder, parents can continue to use their own non-spill cups and straw cups in the stroller.



Fine motor skills

The image below discusses the stimulation of fine motor skills. By adding an activity to the product that uses the small muscles in the hand, fine motor skills are encouraged. Play is also combined with the product within this category.



Spill food

The last category addresses the problem of children throwing away food and thus throwing it out of the stroller. This is a problem that was experienced by several parents interviewed.



Appendix P Design questions

Modular

- How can the product store different types of food?
- How can the product store different types of children's drink bottles?
- How can the product be compatible with existing food containers?
- How can the product be repurposed on the stroller beyond its function as a food tray?
- How can the product function independently alongside the stroller?

No mess

- How can the product prevent/reduce mess in a stroller?
- How can the product prevent/reduce throwing food?
- How can the product handle the mess/ be easy to clean?

Fine motor skills

- How can the product encourage a child to use small muscles in the hand?
- How can the product provide an activity that requires the small muscles in the hand?

Independence

- How can the product promote self-selection?
- How can the product promote problem solving?
- How can the product promote independent activities?

Folding with stroller

- How can the product fold with the stroller?

Keep food fresh

- How can the product keep food fresh?

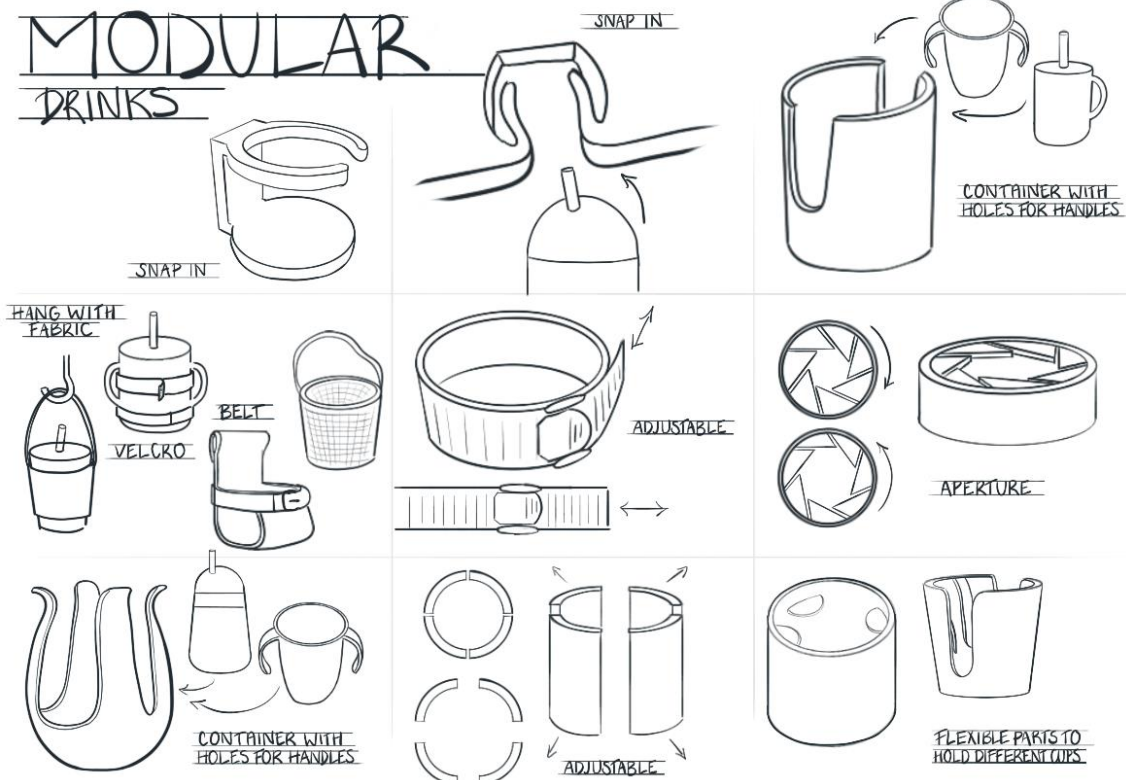
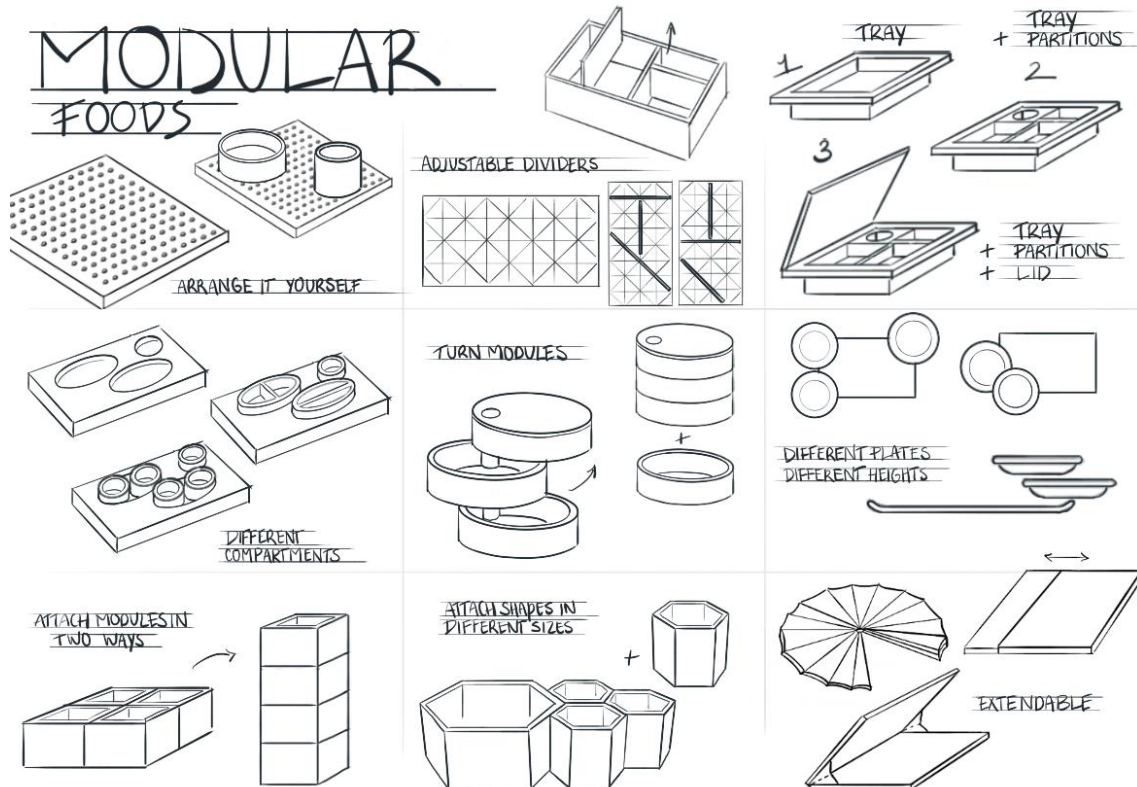
Attachment

- How can the product be connected to the stroller?
- How can the product be connected to multiple strollers?

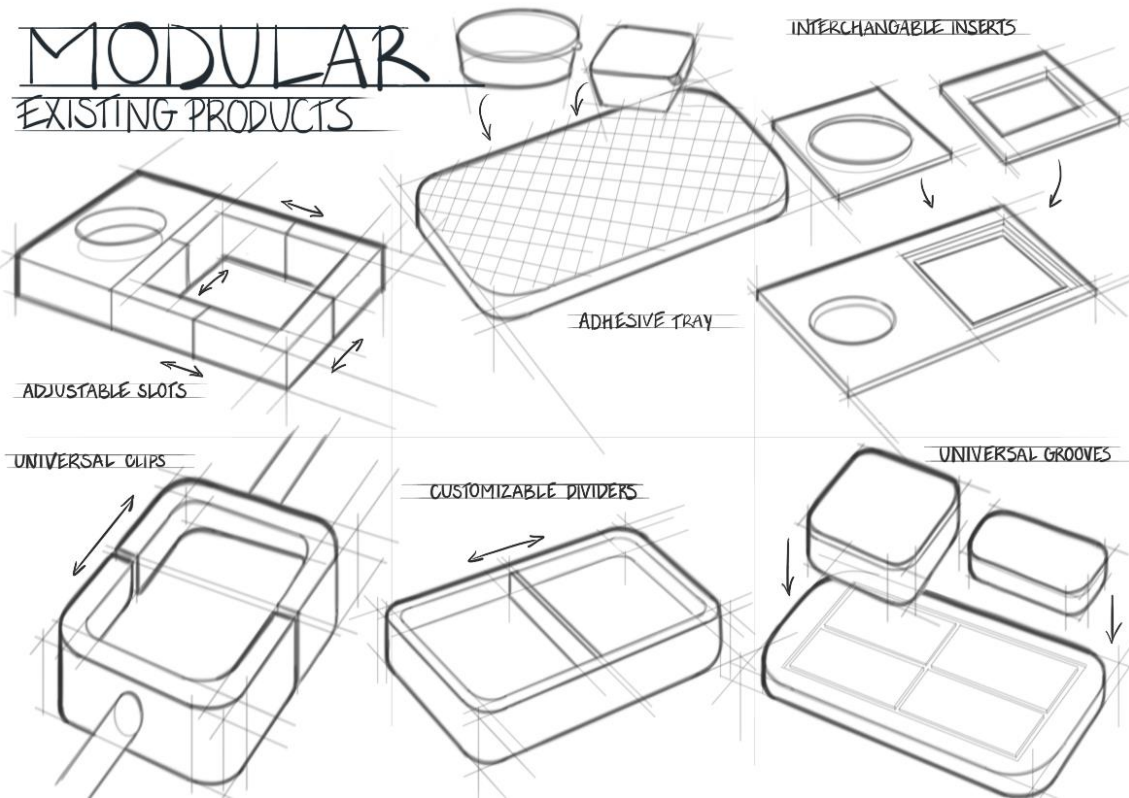
Features

- What features can be integrated into the product?
- What other function can the product have?

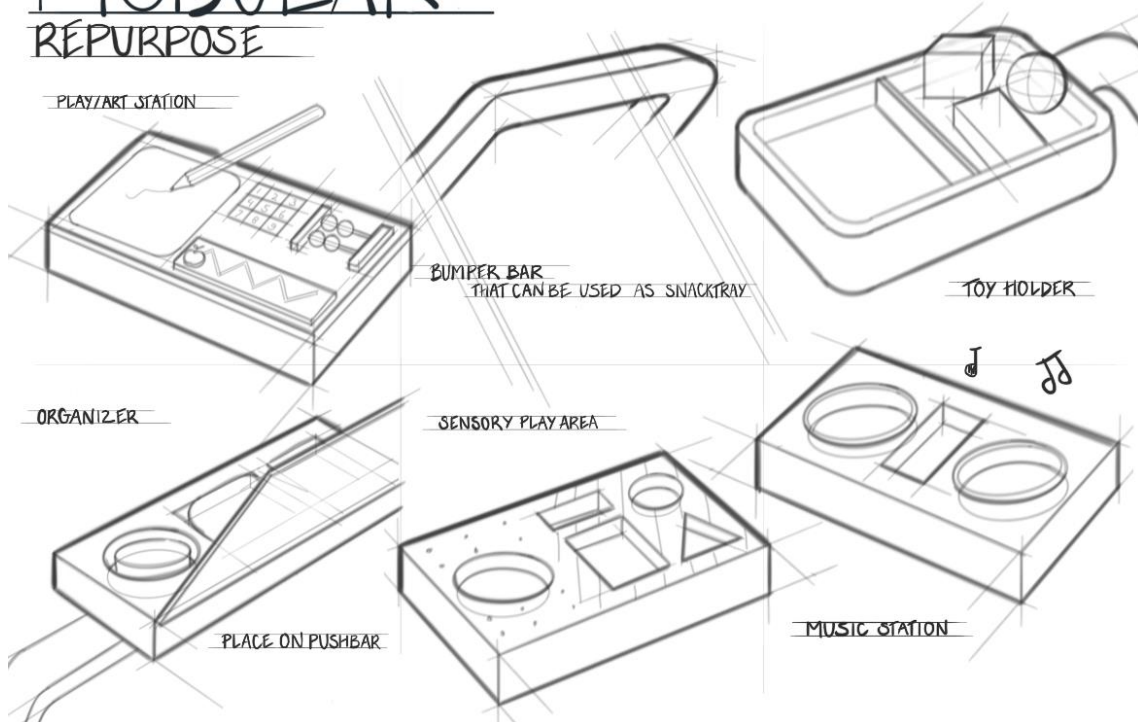
Appendix Q Ideation sketches



MODULAR EXISTING PRODUCTS

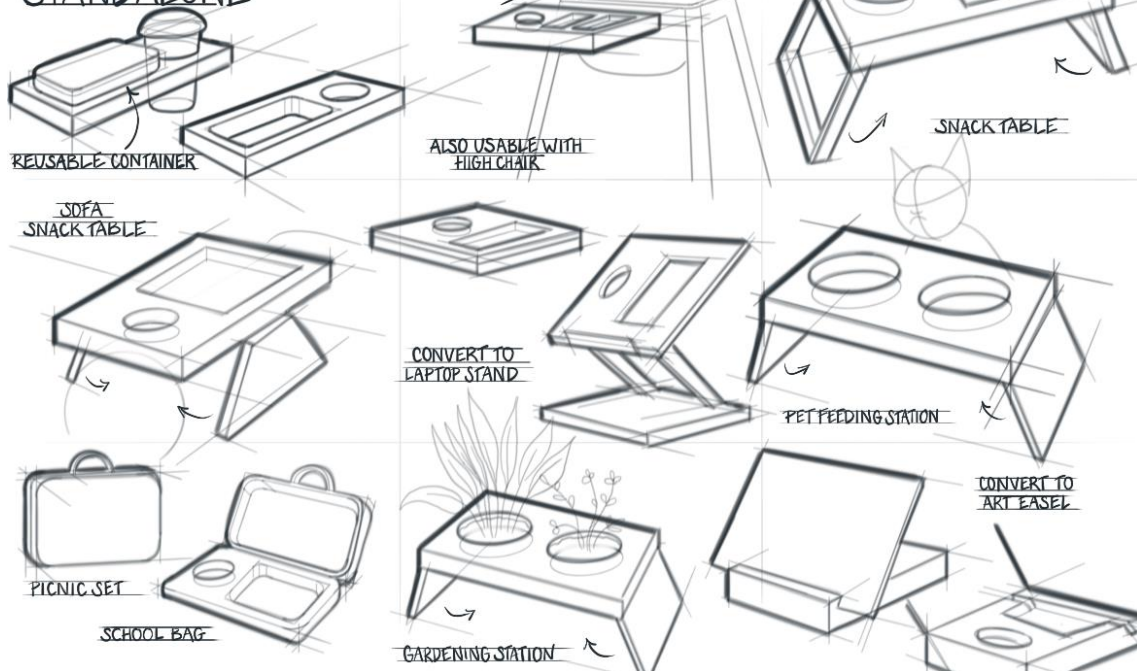


MODULAR REPURPOSE

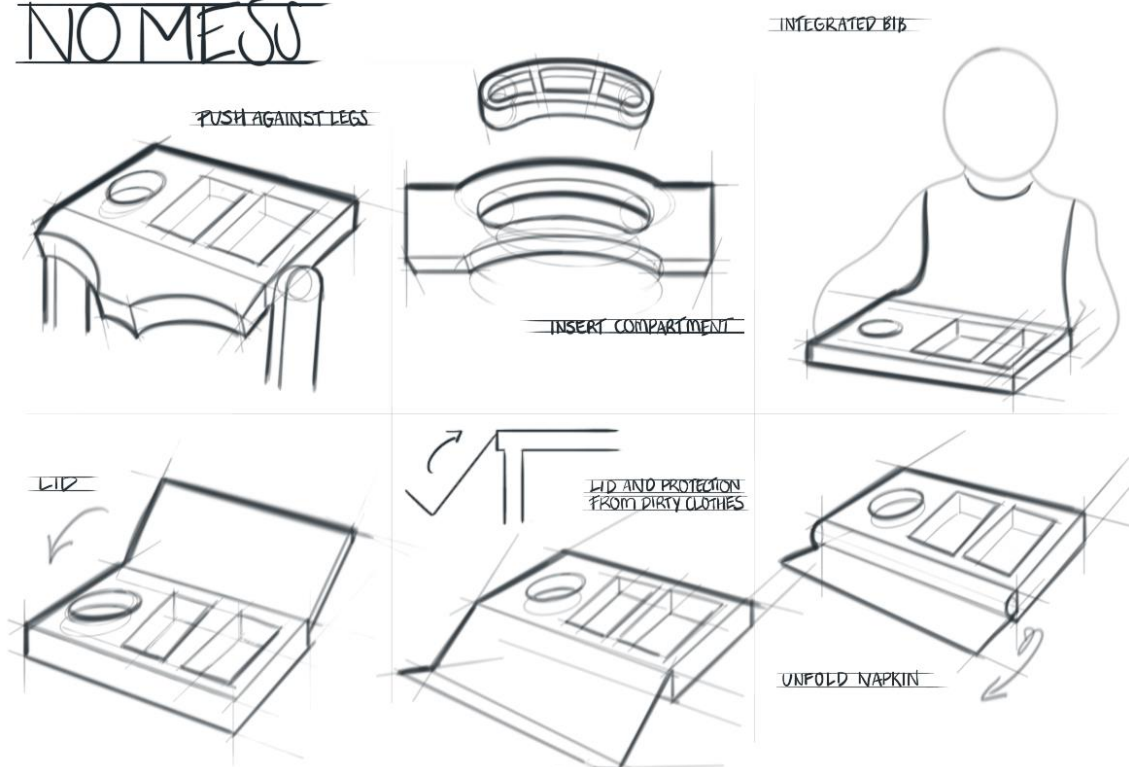


MODULAR

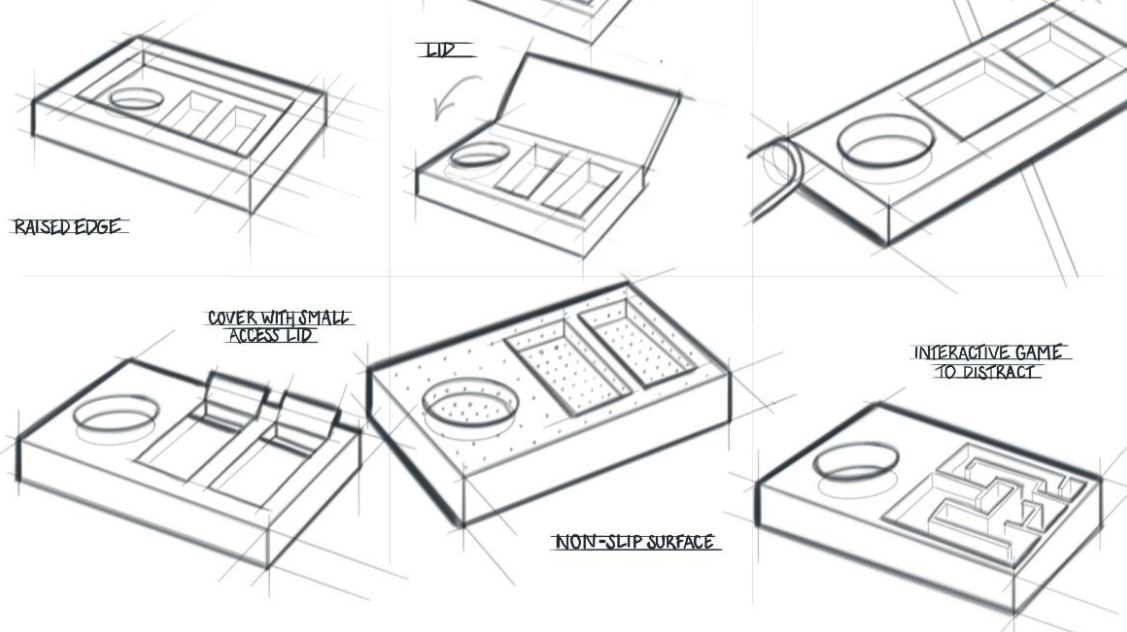
STANDALONE



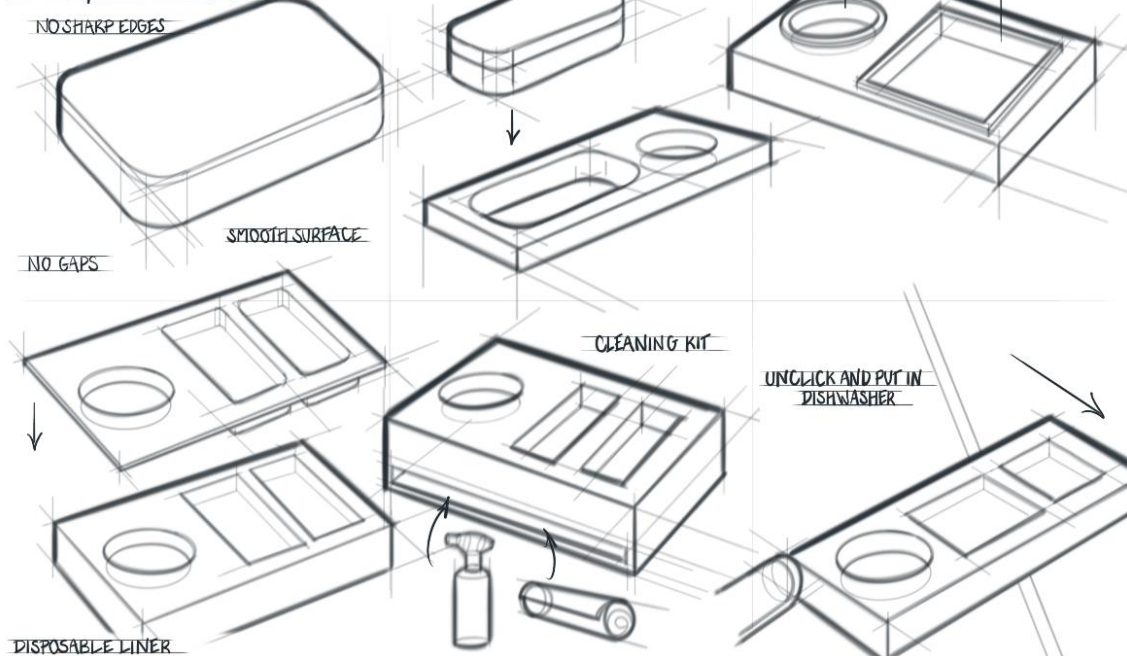
NO MESS



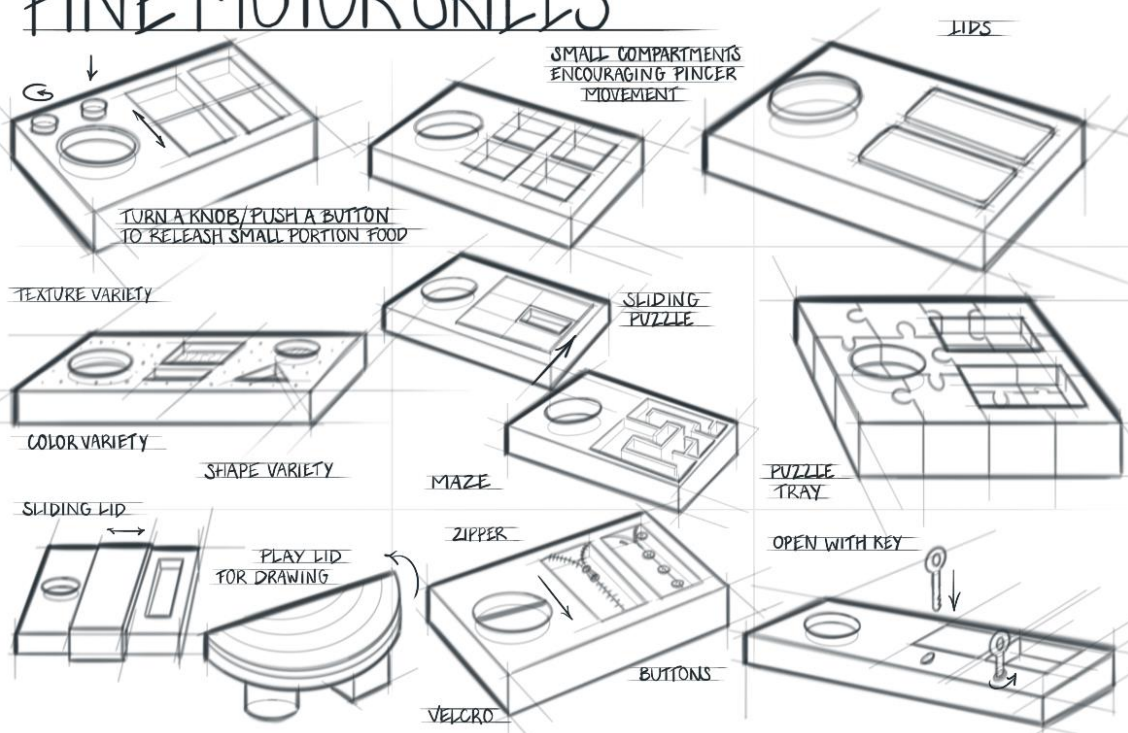
NO MESS THROWING FOOD



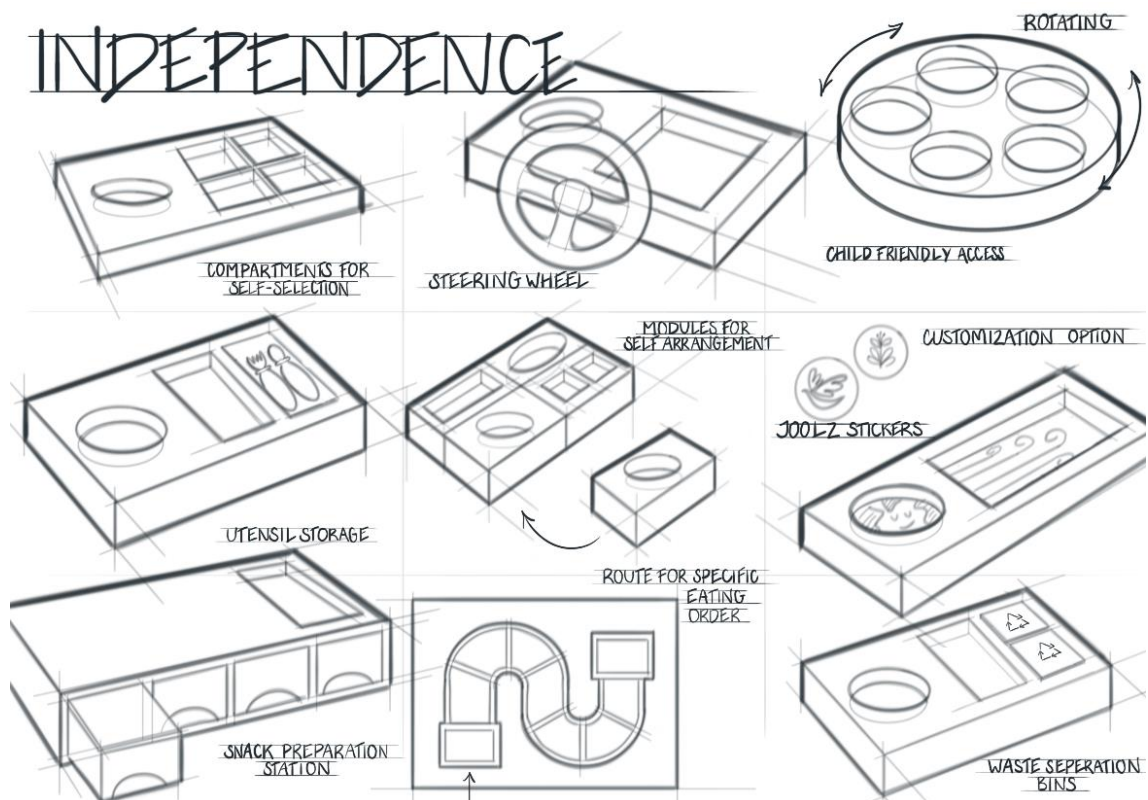
NO MESS EASY TO CLEAN



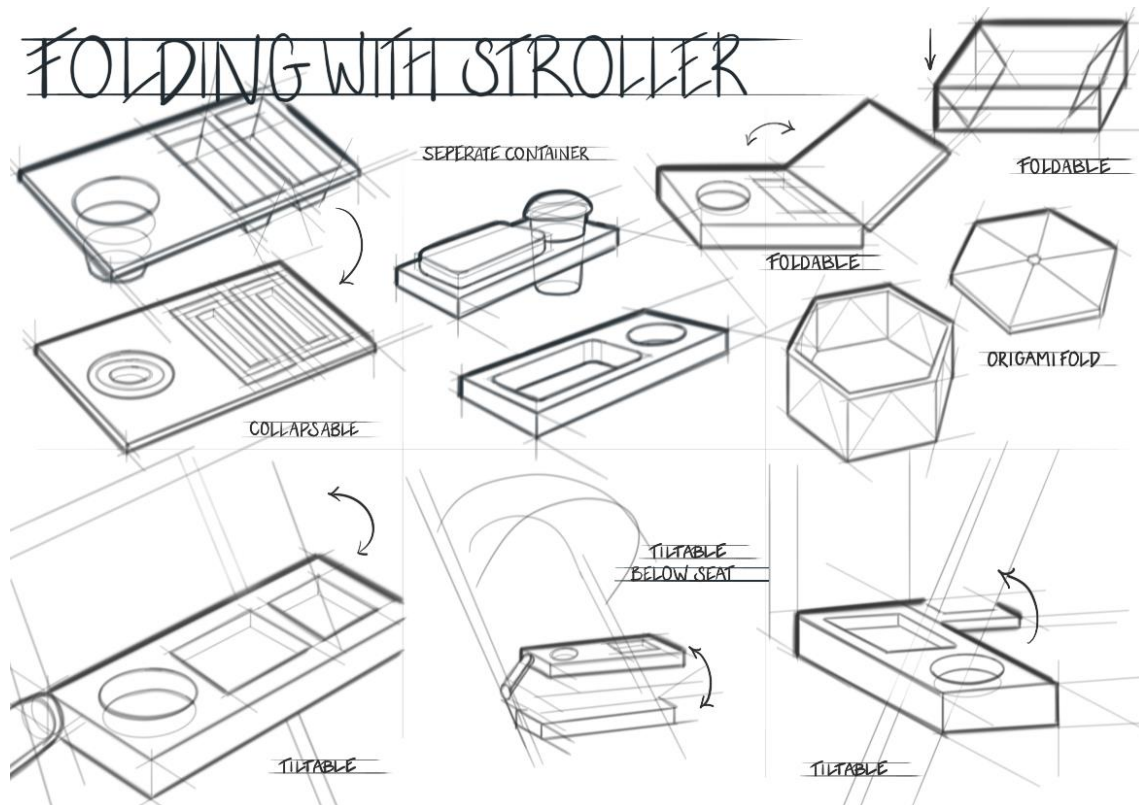
FINE MOTOR SKILLS



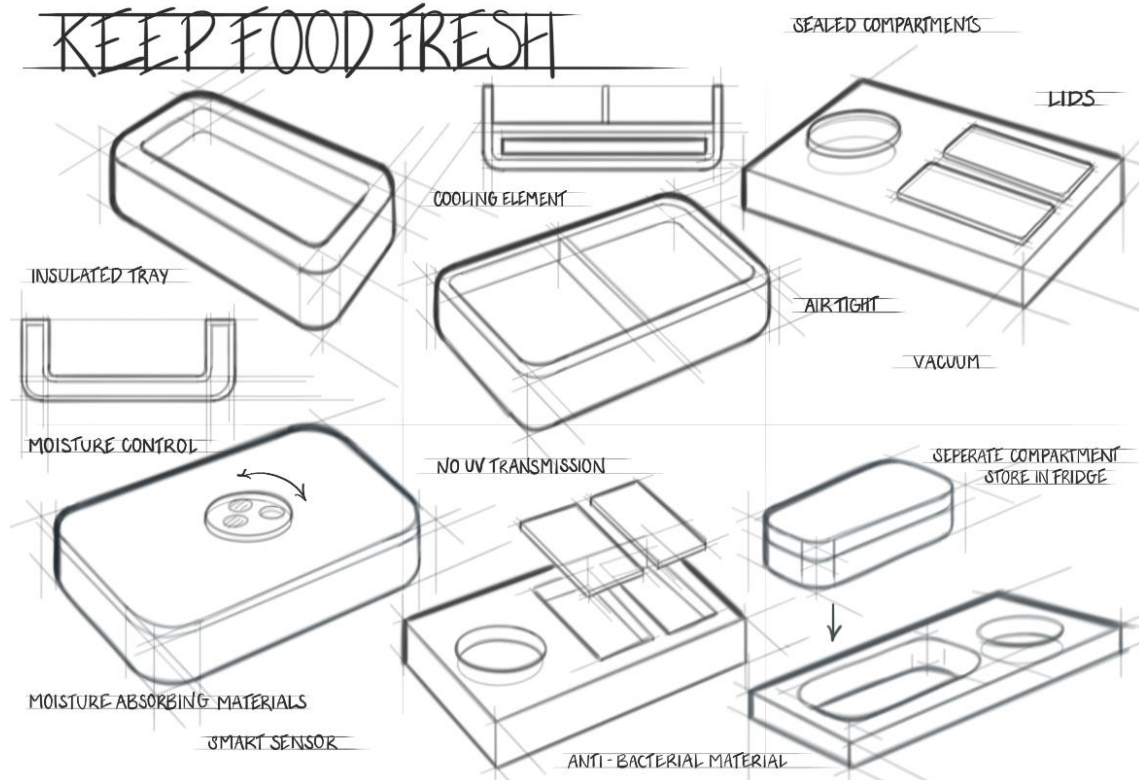
INDEPENDENCE



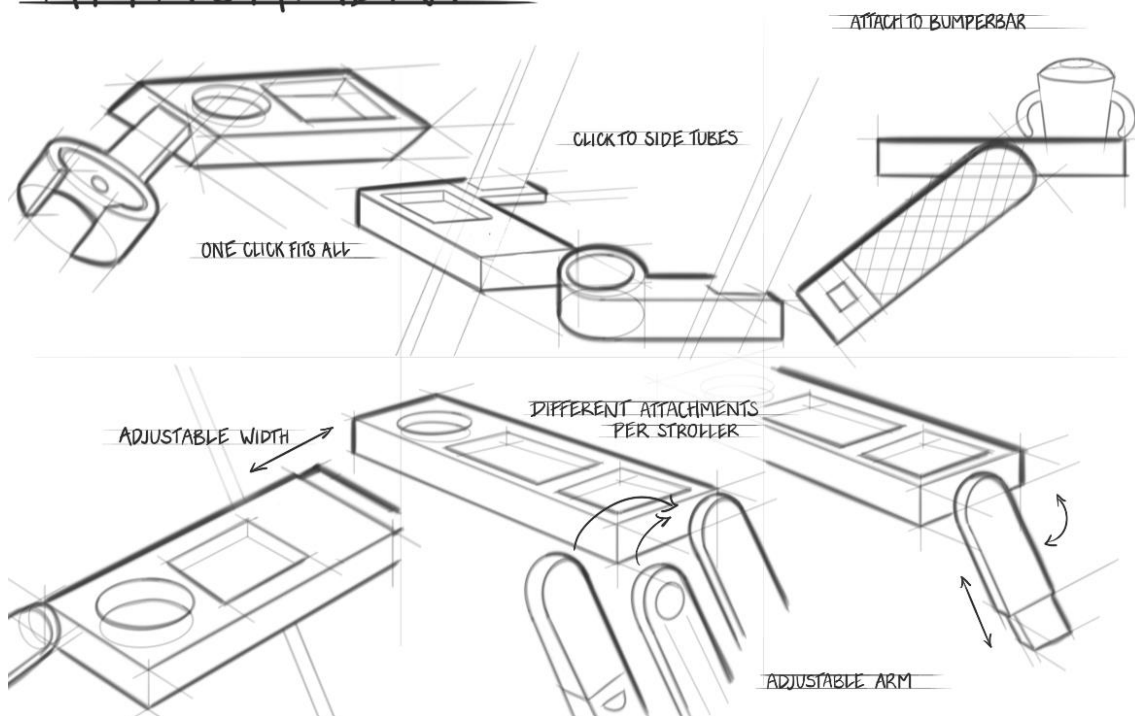
FOLDING WITH STROLLER



KEEP FOOD FRESH



ATTACHMENT



FEATURES

