

Children's Eating Culture



Research on children's eating behaviors, using appropriate design methods to improve their eating experience

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Abstract

The purpose of the project was to research children's eating culture, find the reason why some children don't like to eat, and address this issue in design field to improve children's eating experience. Also provide a less stressful environment for their parents, in order to create a better parent-child-relationship. The research included academic study in children's eating patterns, food preferences, diet quality, and interview, observation with children and parents in different families. The end result was a cooking kit to encourage children to get involved in cooking (preparation), in this way children will get to know food better in a playful way, so that they are more willing to try different food and feel more joy eating. The central design is a tool system called FoodiPlus that has different inspiring shapes for children to put on the food pieces and create characters, patterns, sceneries or decorations. There are also a chopping board, a knife, and a plate together with the FoodiPlus which becomes a cooking kit especially for children, this cooking kit allows children to have their identity in the kitchen, and the way of using it makes cooking with children less messy and safer from the parents' point of view.

Key Words

Children, Child Culture, Eating Behavior, Cooking, Playful

Table of Contents

Introduction	3
Background	3
Objectives and Aims	3
Project Plan	3
Literature Study	4
Study Questions	4
Conclusion Results	4
Design process	5
Design Definition	5
Brainstorming	6
Target group and scenario study	7
Idea generation	10
Concept Development	11
Form Development	12
Material choosing	15
Final result	17
Test Workshop with Children	18
Reflections	21
Reflection A. Design issue	21
Reflection B. Relevance	25
Reflection C. Sustainability	28
Reflection D. Design Process	30
References	32
Attachments	33
Attachment A. Project Plan	33
Attachment B. Info graphic	35
Attachment C. Brainstorming	36
Attachment D. Final Presentation	37

Introduction

Background

Healthy growth is what every parent want for their children. One of the most concerning aspects parents worry about regarding their children is their diet quality. Parents are worrying *“Is my child achieving the nutritional standards? How to make my kid focus on eating? How to let children eat more vegetables and fruits? ...”* But how about the child’s feeling? *“I hate vegetables! Why can’t I have chocolate as my lunch?! My mom makes me to finish my plate but I can’t... I put apple sauce on broccoli, it’s the only way I can eat them.”* Feeding problems can interfere with children’s health and affect the entire family. When every meal becomes an ordeal, there is a problem.

Objectives and Aims

As a designer I want to help out and improve this situation. I think healthy eating not only means that the body grows stronger and more capable, it also includes psychological wellbeing. I want to go deeper researching into children's eating culture, find the reason why so many children don't like to eat, and address this issue in design field to improve children’s eating experience in both healthy and happy ways, also provide a less stressful environment for their parents, in order to create a good parent-child-relationship.

Project Plan

See Attachment A.

Literature Study

Study Questions

- Why some children don't eat, or don't enjoy eating?
- What is children's eating culture? (Key Question)
- How do children's eating cultures develop?
- Which aspects influence children's eating behavior?
- How to let children enjoy eating?
- What is fun eating?
- How can I make children's eating environment more enjoyable with the help of design?

Conclusion Results

There has been a lot of research and study in academic fields about children's eating patterns, food preferences, diet quality etc. But they are not very easy for people outside the field to understand, in addition, one of my findings was that parents' practices have made a big influence on children's eating behavior, so I made an infographic (*see Attachment B.*) to demonstrate the complicated issue more clear, for myself, and for others to understand. I have also highlighted the parts that related more to my project issues than in the academic field.

The main aspects that influence children's eating culture are Innate Predispositions, Parental Practices, Physical and Sensory Attributes, Social Context, Advertising and Commercials. Each aspect has different varying degrees in different ages of children, the brackets indicate the main period of impact.

Correspondingly, there are different ways to influence children's eating habits, to let them enjoy eating, and grow healthier. These ways are,

- Let children try different variety of foods in early ages.
- Introduce new food in the way children accept. For example gradually, and give children the right to choice if they want to eat.
- Give children a nice eating experience.
- Be a positive role model.
- Educate children about nutrition and healthy eating knowledge.
- Make food in interesting shapes or kit out that children would like.
- Let children participate in cooking.

The conclusions also lead out the target age group of my project, which is about 3~5 years old children. Because at this age, children are formulating their eating habits and food preferences. They are capable of eating themselves, and starting to understand nutrition and healthy eating.

Design process

Design Definition

After the research, I have formulated the design definition of my project to make my goals more clear. The definitions also play a guiding and constraint role in the rest process.



Figure 1. Design Definition

Brainstorming

The brainstorming was started from the question “How to improve children’s eating experiences?” and developed in 5 design opportunities, joyful eating environment, good way to introduce new food, make food more accessible for children, participate in making food, and playful food/eating, which are generated from the research conclusion. I narrowed down the design direction and chose a main issue to develop further, which is let children involve in cooking.

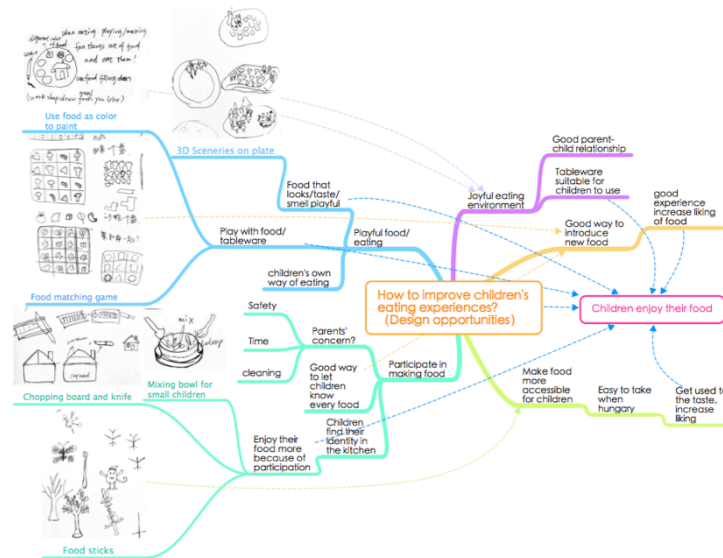


Figure 2: Brainstorming (See Attachments C.)

Because, Cooking with children provide a natural way to discuss nutrition, and a fun way to learn about food. Cooking engages all of the senses – seeing, hearing, smelling, touching, and tasting! It makes children more interested in food, and has playful experiences about making food, so to be more willing to accept new foods.

Cooking creates a sense of ownership. Being a part of cooking makes kitchen children’s own place, gives children

confidence, and they can feel a real sense of achievement when they eat the food they helped making.

Cooking together builds good parents-child relationship. Instead of children running around and parents cooking alone in the kitchen, involving children in some part of cooking will not only help out the parents, but also gives opportunity for the family to spend quality time together.

Children will learn not only about cooking, but also safety, vocabularies, and math concept.

Target Group and Scenario Study

Three families in different cultural background were interviewed with questions related to their children's eating behavior, and cooking with children (Questions related to children's own opinion were asked from their parents in Swedish or other mother language, and then translated in English for me to understand). Children were asked in their own wish if they want to participate in cooking. Observation was made when children were helping out in kitchen, and how they behave when eating on the table.

Interview conclusions,

1. Do your children enjoy mealtime? Under which circumstances might it change?

- Every family has children who don't enjoy mealtime, and children that enjoy mealtime. When family members sit together and eat together, when the atmosphere was positive, children tend to enjoy more.

- Children like eating when they are allowed to play with their food, or eat food with good appearance or decorative foodstuff. For example Sushi and pancakes.

- Children like smaller versions of food, like small tomatoes and small mushrooms, or food that is cut in smaller (than normal) pieces, and they like to use smaller tableware to eat.

2. Do your children like to help you in the kitchen?

- Children start to get very interested in helping out in the kitchen when they were around 5 years old, and mostly when baking and making things that need decorations.

- Girls tend to be more willing to help than boys; boys think cooking is “girlish”; girls are more quiet and stay closer to the kitchen, but boys always run around, playing toys, so when parents ask for help they get girls easier than boys to the kitchen.

- If the children have a small kitchenware that is easy to use, they will volunteer to help.

3. What do you think of the idea to involve children in cooking? Does it help them to like eating more?

- Some parents think it is a good way and it makes their children eat more and enjoy more. But some parents are worried about the safety issues, mostly about knives and hot water, so they won't let their children cook until they are old enough, like 7~9 years old. Parents also mentioned that it gets very messy when children are in the kitchen, if there is more than one children, it gets more out of control.

4. What things do you allow your child to do in the kitchen?

- Washing, peeling, stirring, measuring, set the table are the usual things children do when they help with cooking, these are safest and least concerning things according to parents.
- Children think some things are boring to do, and some are interesting, it differs between different children, but all of them think cutting is the most interesting and challenging thing they want to do.

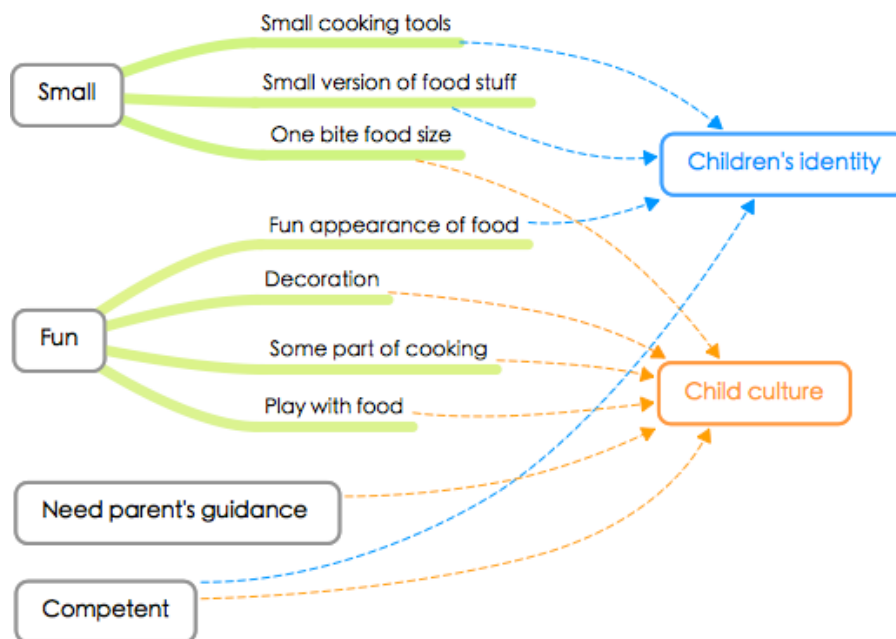


Figure 3. Target group and scenario study

Observation conclusions,

- Children are vulnerable and need parents' guidance in the kitchen. Kitchen is not designed for children, they don't know where to stand, where to get everything, and don't know how to cook.

- But children also have competence, they like to try different tools and cooking methods, they think they can handle difficult tasks, like cutting practices.

- Children find their identity in kitchen by using small cooking utensils, and add playfulness into cooking.

Idea generation

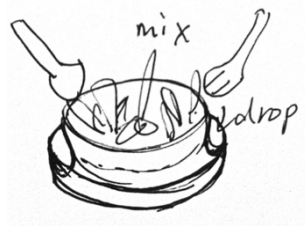


Figure 4. Mixing bowl with holder

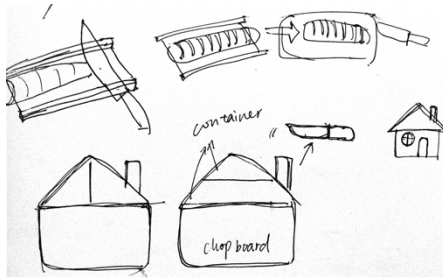


Figure 5. Cutting kit with safe guidance and interesting appearance

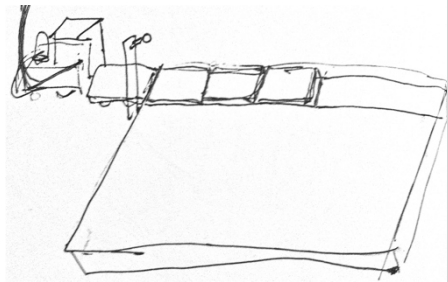


Figure 6. Cutting board with playful food containers

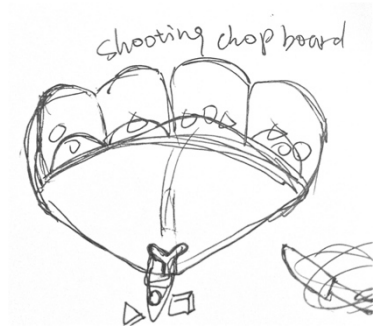


Figure 5. Cut and shoot cutting kit



Figure 6. Animal shapes slicer



Figure 7. Building tools for put on food pieces

After a few ideas, to select one idea to develop further, I followed my design definition, which is a product that let children learn, explore and taste different food, in a fun, tidy, simple way. The last idea, building tools for children to put on food pieces was selected. It provides children with a fun way to explore different shapes and color of food, by putting different combinations of food pieces on different frame shapes, children can use their imagination to make interesting stuff that they would like to eat.

Concept Development



Figure 8. Concept Development 1

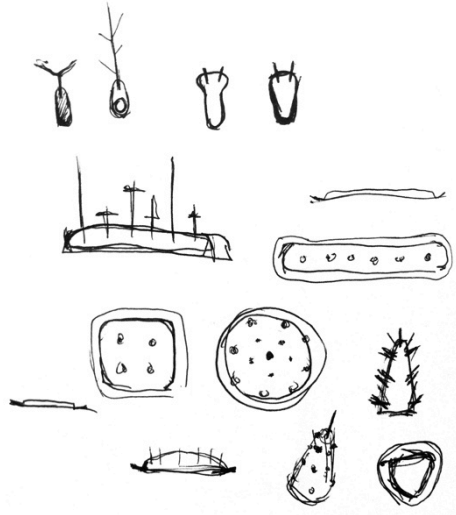


Figure 9. Concept Development 2

In most consumption situations, food is first detected at a distance by the sense of sight. As a result, vision plays a critical role in food acceptance. (H.L. Meiselman, H.J.H. MacFie, 1996) This food building tool system has applied "construction play" to the preparation

process of cooking. It includes many different shapes and holders. User can choose one shape to create things, or several shapes combined together. The food becomes connection of the shapes, so that gives more possibility of creation using different food. It is very easy to make patterns or figures, also to build three-dimensional sculptures, and if you want, you can invent an interesting way of eating the food, by poking a bunch of food together and dip it in sauce.

Form Development

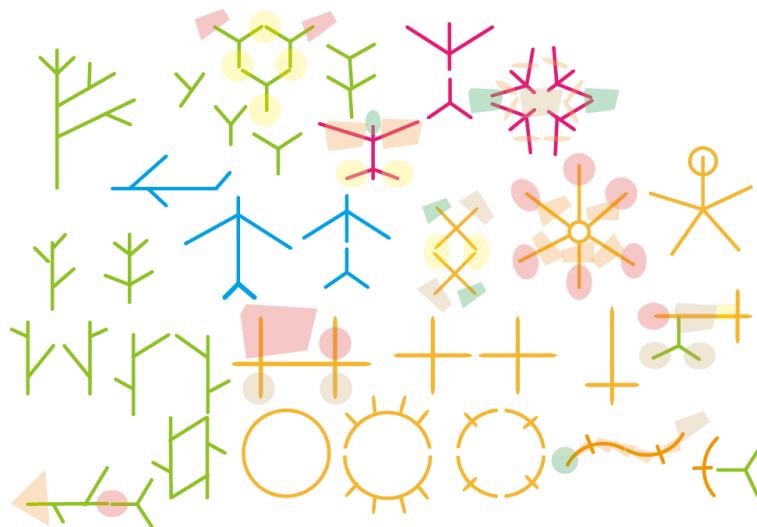


Figure 10. Form Development 1

In order to give more possibility on creations, the shapes need to be simple and open, so it does not limit imagination; also there should be semantic support on using different kinds of food (exploring food), so the shape's role is more a bone or frame than a decisive presence, the shape, color and texture of food should play the main character. I found inspiration from children's drawings and art creations, integrating the common characteristics, and taking out the main structures. In addition, considering the young age of children, it should not be too abstract for them to understand, meaning that a certain form is needed. Also when thinking of the safety issue, the size of the shapes needs to be big enough, and have at least one branch to prevent swallowing. In the end 7 shapes were selected.



Figure 11. Form Development 2

The holders developed into a cooking kit idea. Cooking kit allows children to have their identity in the kitchen. It has a chopping board, a knife, and a plate. The holders are not needed anymore because one can just put on a piece of carrot or cucumber (hard) as a stand. Children get everything they need in one package, instead of asking their parents to get it for them. The chopping board contains all the other things. The knife should be sharp enough, but still safe for children to use. The plate is to put food on so it won't get messy on the table or on the floor.

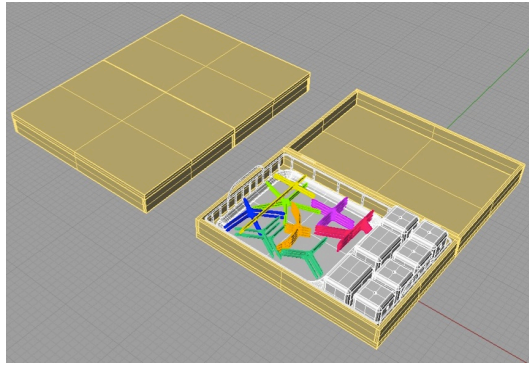


Figure 12. Form Development 3

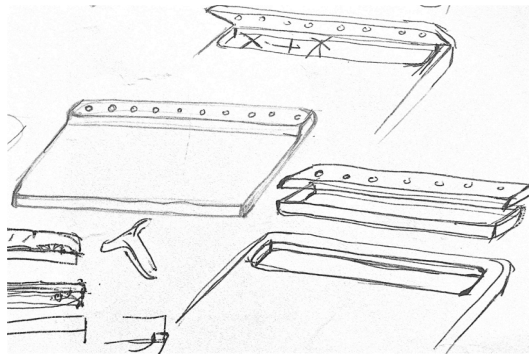


Figure 13. Form Development 4

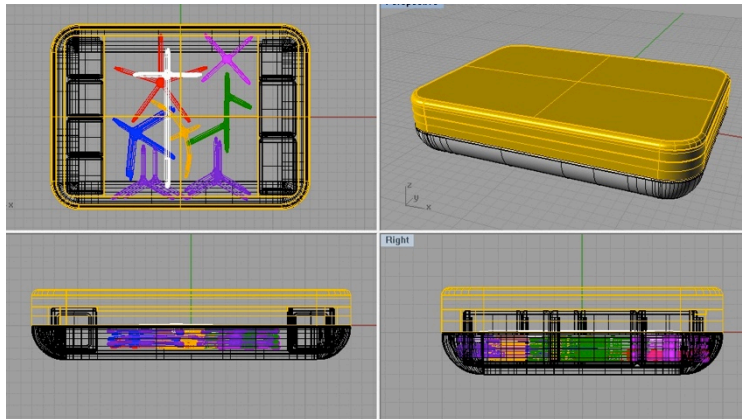


Figure 14. Form Development 5

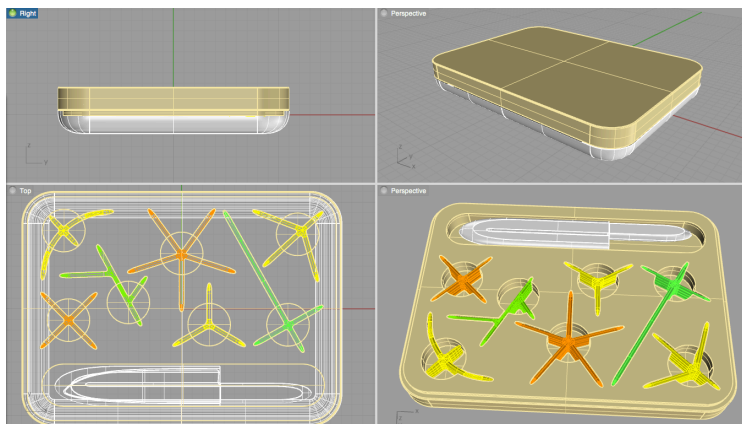


Figure 15. Form Development 6

The final result is to place each of the four food building shapes and knife inside the chopping board like a puzzle, the lid is the plate. This way will teach the children to tidy up in a fun way, it is also easier to distinguish every shape and prevent from losing the shapes.

Material Choosing

Material testing of food building tools

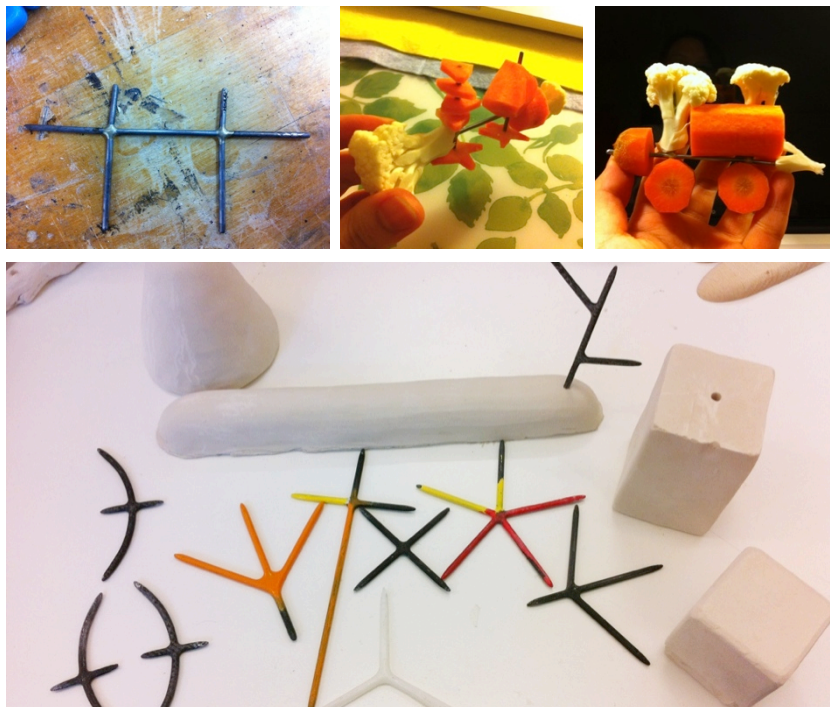


Figure 16. Material testing

The food building tools should be hard enough to make it easier to plug on food pieces, but also need to be certain elasticity so that it won't be easy to break by children or cause danger. In a better condition, I want the material to withstand the heat of cooking, so the food creation can be cooked in the oven, or in a pot. This will expand the use and give more possibilities of creativity.

I made a test piece by welding a stainless steel bar. It worked fine with plug on food pieces, but the appearance was not what I wanted the product to be. After researching

new materials on the market, I found the Reinforced Polyamide Plastic, that is very popular these days among cooking ware producers. It has the characteristics I needed, and the industrial techniques to use it are advanced, which allows the shapes to be very accurate and have nice colors. There is also one type of silicon (Elastosil M 4370) offered by the big raw material company ABIC, that has even better material quality.

Material choosing result

Product	Material	Characteristic
Cutting board	Wood (Beech)	- Natural material - Kind to knives - Self-healing - Nice appearance
Plate	Ceramic	- Perfect for serving food - Nice appearance
Food building tools	Reinforced polyamide plastic	- High strength and flexibility - Food approval - Dishwasher-safe - Heat resistance to 220°C
	Silicon Elastosil M 4370,	- High strength and flexibility - Food approval - Dishwasher-safe - Heat resistance to 300°C
Knife	Melamine	- High hardness, scratch- and shatter-resistance, non-absorbent - Dishwasher-safe

Final Result

FoodiPlus — A tool system to play with food and for joyful eating

FoodiCraft — A creative cooking kit designed for children



Figure 17. Prototype 1

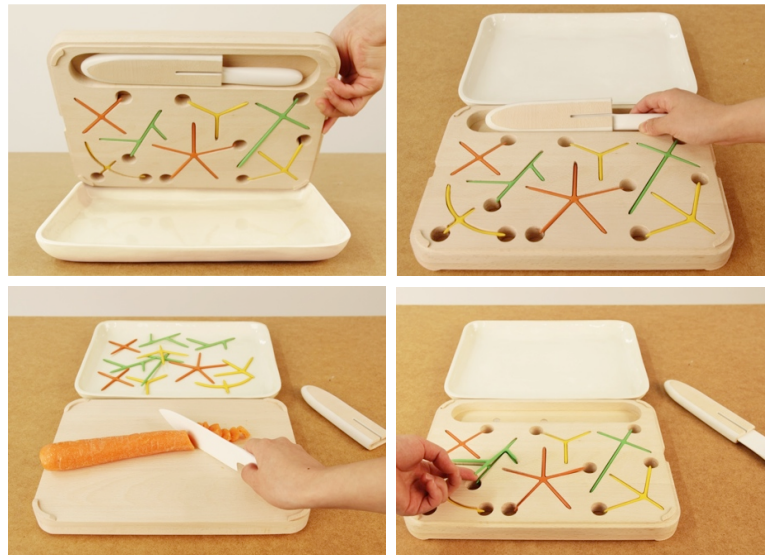


Figure 18. Prototype 2



Figure 19. Prototype 3

Test Workshop with Children

In order to verify my design, I arranged a workshop with children in Kapellgängen preschool. Two groups of children participated; each group had two girls and two boys, age between 3 and 6. The first group was randomly selected children, the second group only children that hate eating or are very picky.



Figure 20. Fun cooking workshop 1

We prepared different food for the kids, and put FoodiPlus on the table, the teacher helped me to ask the children "What do you think you can do with these things?", The children immediately answered "Use it as a pin to eat food!", I cut a few slices of carrot, then put it on a FoodiPlus, they quickly got the idea, started cutting and playing.

Some children immediately began to eat the food after they had made a creation, some did a bunch of different things, then ate them one by one and saved their most favorite one until last. The teacher told me that some children did not like vegetables, but now they started to eat them.

“It is a very good way for children to get interested in food, helps them to know different types of food, and it also creates a nice environment which is also good for the picky eaters, because children are influenced by each other. If some are having a good time, then the ones who don’t like to eat will begin to enjoy.” Said one of the teachers.

Creations made by children,



Figure 21. Fun cooking workshop 2

The Results,

In the first group which were randomly selected four children, there was a very good atmosphere. All of them enjoyed making and playing with their food, also eating their art work. They wanted to have FoodiPlus at their

home, and asked me where they could buy it; this is very encouraging for me to hear.

The second group, were four very picky eaters, they showed different interest in FoodiPlus. One girl that often cooks with her mother said that this way makes the cooking more fun. One boy that has never been involved in cooking said that now he thinks cooking is fun and he wants to help cooking from now on. "This is so interesting," he said, but he still did not want to eat some of the vegetables that he does not like, he was just very interested in using vegetables and fruits with different shapes and colors. The other two children are very bad eaters; they only eat one or two types of food. I asked them what they think of playing with food using FoodiPlus. They said making things they like is interesting, but they still hate all the food. Of course changing eating behavior takes time.

Overall the test results were very good, the children thought it was a fun way of cooking, and playing with food is very interesting, most of them were willing to try new types of food or the food that they did not like before. For those who still hate eating, the teachers and I both think that they need to use the FoodiPlus a few more times, and then gradually there will be changes.

I also found a few things that needed improvement. The sharpness of the knife was not enough, and the size of the handle is too big for children's small hands, but the shape, weight and material characteristics are suitable for children to use.

Reflections

Reflection A. Design Issue

The issue of design for two different cultures

The purpose of design is to improve people's lives. There are a lot of user-centered designs, but maybe not many for two different cultures. The main issue of my exam project is to find out how design can build the bridge between different cultures. The relationship between adults (parents) and children. They are two different cultural groups, however, related to each other. Sometimes only designing things for child culture is enough, but in many cases the parent-child relationship is complex, children are seen as vulnerable and in need of adult's guidance, but they also have their own opinion and expression. Moreover, adults are the one's who select and approve what can be presented for children, so when designing things for children, it should meet both adult's and children's culture.

The issue I explored this time is about eating. Parents always want their child to grow up healthy. They hope their children eat enough food and with enough nutrition. They don't want their child to be a picky eater, or eat too much junk food which is bad for their body development. But children do not think the same way. They are not able to understand the importance of nutrition; they only eat things that they like. For example sweets, chips, pizza and other types of food which parents always limit them from eating. But if parents are using the wrong way to make their children eat healthy food, or restrict them from eating certain food, it might not work the way they want. In fact, it mainly results in an unpleasant eating experience to children. They will hate the eating hours and

hate the food that causes this unhappy memory. This might result in them consuming a lot more of the "bad food" when they get away from parent's supervision. How to improve this undesirable situation?

The use of design as a better tool to solve the problem

There are many ways to achieve this, such as educate parents about parenting, deliver the right message through media, teach children about healthy eating and nutrition. But is it more effective to solve this problem by design? I think the answer is yes. Because designer can integrate complex situations through different forms and visualizations, in this way, it is easier for people to understand the issue, and deliver the message with the interaction between object and people, in order to change people's behavior or cognitive. For example, if you just tell parents that children need to learn about nutrition in order to get the idea of healthy eating in a more interesting way, then there will be a boring lesson in front of their child.

If there is a product that can let children express their imagination on food in a playful way, during the creation. Different colors, shapes, textures, even smell and taste of food will be needed. Isn't this a better idea? This is what I want to promote for children in this exam project. Involving children in the cooking provides a fun way to learn about food. Spend time with their parents; the experience of eating becomes better, that will have a good influence on their preference of food. Gradually children will enjoy eating and develop a healthy diet, so there won't be any worries from parents, nor conflicts between children and parents. Further more, the design is not only about children. I also considered parent's needs by putting a chopping board, a plate, and a safe knife together as a

cooking kit for children. With this kit, children will not need to ask their parents to get everything from the high shelf for them, and they know where to put food pieces after chopping. There will be no messy table or floor anymore, in addition, children can learn about the concept of storage consolidation.

Why choose product design?

The final result is in the field of product design. To reach the same goal of my aim, there are definitely other ways, like graphic field, it could be books or stories to let children enjoy eating, or pedagogical exhibitions for both parents and children. But I chose product, because I am a product designer. I am good at communicating and delivering messages through physical objects to people. This also meets the requirements of the issue involving children in cooking, since there are a lot of tools in the kitchen which are designed for adults but not good for children to use. Another reason is that cooking is hands on activity. If I use other design applications, it will not be better than to let the user try out themselves. But maybe if thinking from a conceptual angle, people don't need to cook with tools, they just push a button and delicious food will come out, or even they won't need to eat to stay healthy in the future.

The issue of providing opportunities and possibilities

The FoodiCraft cooking kit is not only a tool box for children. It is a symbol showing the place and identity of children in the kitchen. The interior of the kitchen and all the cooking utensils are designed for adults, so that children can not integrate into that environment. If there is something with appropriate size specially designed for them, it will make children interested in getting into the kitchen and participating in the cooking. It is also a sign to

remind adults that they should spend some time with their children for example cooking together. Perhaps an ordinary knife, ordinary cutting board, plates and toothpicks can have the same “function”, but there should be a start up idea of doing this action, and the cooking kit also controls the playing from getting messy.

My design philosophy

Looking back at all my former projects, I always have passion for making things that are useful, fun, giving opportunity for creation, supporting imagination, and providing various angles of playing. I wanted to keep those in this exam project. When designing for children, I have a few guidelines to follow: think from children’s perspective, physically and mentally; observe child's behavior is the most effective and direct way to understand children's culture, and there will always be unexpected discoveries that are good to use in design; the design ideas should keep pace with the instinctive needs of children, children are not like adults and can not express their requirements easily, so there lies the responsibility for designers to discover the potential demand from children, or the real message under children’s own language; taking into account the relationship between children and adults. I think FoodiCraft has achieved all the requirements above. In addition, I think children’s audacious creativity is rare and commendable, which should not be strangled. There are a lot of bad examples when it comes to design for children; there is always bright colors and chubby lines. I think the design should leave space for children’s imagination, so the design language of FoodiPlus is to provide support. Children can easily create everything they want and will not be restricted by the product it self.

What will happen if I change my choices?

If I choose not to work with involving children in cooking, there is still a lot of ways to apply design, as I did in the brainstorming. Four other ways can be developed, joyful eating environment, good way to introduce new food, make food more accessible for children, and playful food / eating. There is no right or wrong on each choice, the reason why I chose to let children participate in cooking was explained previously.

If I chose only to have the FoodiPlus as the whole design and not adding the cooking kit, then children might use the FoodiPlus for other things. For instance candy. There is nothing wrong with using the product in a different way, but the aim for this project is to let children know food better and then enjoy eating more, so the product should at some level restrict the using scenario, by connecting to cooking wares. As it can be other cooking related things than chopping board and knife.

Reflection B. Relevance

Relevance of my design proposal

The end result FoodiCraft kit has reached my goal of providing children with joyful eating experience, by giving them a creative tool (the FoodiPluses) to play, experience, and learn about different food; at the same time make children's participation in kitchen more organized and safer by the design of cutting kit. In this way I also took care of the parents' concern, this I had mentioned in my proposal, my design is not only about children having fun, but also about helping out parents. The two ways work together, firstly children will get more possibilities to get involved in cooking/preparation, and then start to learn about food in a good way. After that, they will step by step try different food stuffs, get used to it, finally like it, and enjoy eating. Otherwise parents won't allow them to go in

the kitchen, or find it problematic, because of the safety issue, requires extra cleaning and is time consuming.

Overall, I think I have achieved most of the goals that I originally set out. My design product cannot solve the problem completely, it is a way to let people notice the problematic eating situation between parents and children, and let both of them try a fun way to experience food. But at least the teachers from the preschool where I tested my design said that my idea is the correct and effective way to let children enjoy eating. They are also using the same kind of principle and it is working well on the children in their school. A lot of children started to like eating better than before.

Relevance to the stakeholders

As I mentioned in the background, there are a lot of parents and children suffering in the situation of eating in different ways. A lot of children don't like mealtime, mostly because their parents don't like when they are not eating enough, are picky or just eat too much junk food. My design aims to improve this situation by involving children in cooking in a fun way, so that children will be more willing to participate, and during cooking, the way of play with food provides them with a happy experience, also intrigues children to learn and explore different food, in order to gradually accept new food, so their parents won't be worried about their health anymore.

For the families that don't have this problem, this cooking kit is also a nice thing to have, it will make children's eating experience more enjoyable.

About the target age group

I did not determine a clear target age group, because I want the results of this design to be the best solution from the conformation of my research. Children's psychological and behavioral development differs at different ages, many academic studies found that children's eating habits form at an earlier age, even from pregnancy period. Children about one year old begin to try different foods, which is driven by their instinct behaviors to determine which are edible and which are not. When children are around 5-year-old, their diet habit have developed substantially, it means they already have their own liking and disliking. If the parents force their children to eat something they do not like, it will cause unpleasant situations. So I initially decided that the target age group should be toddlers, but after the mid presentation, the teachers pointed out that in order to adapt to a wider range of market demand, as well as taking into account factors such as the high safety standards of child care products, I should broaden my target ages. After that I did some research about products designed for children to cook, see what target group they were focusing on. Also some websites of parenting information exchanges between the parents. I found out at what age children start to like to participate in cooking, and when children can use certain kitchenwares. Finally I decided that the target age should be about 5 years old, but my design should also be interesting to use by older age of children, or even attract adults. This expansion of target group makes the product more sellable in the market, and also makes the life of the product longer.

The final product has met my expectations on target group. The color, size, material, design details and form language is attractive to young children, but not childish, so older children will also think it is desirable, and even some adults think it is interesting. The materials, I used the special kind of silicone which has very good strength and

toughness, it is not easily broken by young children, so they won't hurt themselves under normal usage; the function, open ended way of using is what everyone will be interested in. After my final presentation, my opponent commented on the knife in the cooking kit, that its design language was too "adultish", he suggested that I should use a more playful shape and adding more sculpting possibilities to it. I do not agree with him on the first comment, because the knife is a symbol in the kitchen, the professional shape will make children feel it is a serious matter when they are using it, rather than playing, so it not only gives children the feeling of ownership, but also makes them more aware of safety issues. I agree with the second suggestion, the knife would be more in line with the FoodiPlus system if it had functions to cut food in a fun way, this will give more value to the whole idea of having a cooking kit.

From the buyers or producer's point of view

I had a lot of thinking about choice of material. I did some research and tests on different materials to select the right one for my design. Giving good function to the product, makes the user experience better, and also increases convenience and ensures low cost in mass production. So there must be someone interested in producing my design.

Reflection C. Sustainability

Societal & ethical

First of all, my project makes parents realize the importance of the way they educate their children on eating issues. These issues are neglected by a lot of people, even though in the academic field it has caught attention (a lot of researcher have written articles discussing this issue). Because in real life, very few are studying the child

culture or eating behavior, and not everyone reads the academic papers. I am trying to change this situation by design. Making a product that people will be willing to buy and use in everyday life. In this way it will be easier to make people see the issues of children's eating behavior. It is not as simple as that children do not enjoy eating because they are not behaving well. Children have their own way of thinking and their own culture that differs from adults. This includes eating behavior, and it is very much influenced by their parent's upbringing practices. I hope my design will help parents realize their incorrect practices on children about eating, and give children a nice experience.

However, in some special cases, for example one of the family that I had visited mentioned that in their family culture, food is divine and should be respected, playing with food is forbidden. In this case, my design is not a good way to address the issue.

Technical & ecological

I chose wood for the chopping board, because it is a natural material, it can be used for a long time and is renewable. It is kind to knives, and will not dull them quickly. A good maple or beech cutting board has self-healing function, and thus won't scar as easily as a plastic board. It is very easy for mass production if using a CVC milling machine.

The material of the plate is ceramic, it is a durable material, can be used many times over many years. If the rest of the cooking set is not been used, the plate can be used as usual. Also it is very easy to produce by hand or in mass production.

The material in the knife is melamine. It is very hard and tough, scratch- and shatter-resistant, and non-absorbent, it is a very durable material, but this material will, at high temperatures, release toxic gases and can cause harm to the human body, but as a knife, there is no heating demand, so this is not a risk factor.

The material for FoodiPlus is reinforced polimade plastic, or Silicon Elastosil M 4370, it needs production testing to decide which one is better, but they are similar kind of materials that have high strength and flexibility, food approval, dishwasher-safe, and heat resistance to more than 220°C. They both are very durable materials and can be used for a very long time. They do no harm to the human body.

Reflection D. Design Process

I didn't want to specify the design field in the beginning, I wanted to start with a research on an issue or a problem that I am interested in, that is of a value to the world, and find inspiration during my research, or decide the solution based on the result of my research. It turned out to be a long process. I started with an unsolvable question "What is the best for children?" which was also the question I had in my mind when I was applying for this master program, Child Culture Design. Every parent wants their child to grow up in a good environment. They offer what they think is the best for their children, but sometimes it does not turn out to be good and makes their children unhappy. So I wonder if it is because the different cultures between adults and children? I started with finding the conflicts between parents and their child. Things that parents think are good for children but children don't agree with. And then I found my design issue; how to improve children's eating environment by the help of design? The key

question is “What is children’s eating culture? ”. After a solid research on this area, I decided to focus on involving children in cooking (or preparing), which concluded in my research as being a good way to let children enjoy their food and eating time, and the end result will be a product that provides children with fun making, and fun eating food experience.

The design methods I have used are mainly user centered. I think it is the right way to use. I researched on the user (children)’s food choice, eating behavior, and how to influence them in the academic journal field. Then I went to a few families to question parents and children, and a scenario research by observing children’s behavior when they were helping out in the kitchen; finally I went to a preschool to test the prototype with some children and their teacher. All the practices I have used are very helpful to my design process, I found inspirations during my research, and problems to solve, also I felt supported by parents and teachers, and this gave me confidence in the idea that I was working on.

I should have specified and formulated my design issue earlier than I did, and finish research earlier, so that I would have more time to focus on the design application. The way of finding what I really should do was too long, so the rest of the process was a little bit tense. As a designer not a researcher, I should not spend too much time on researching, especially the academic reading, it took too much time to understand everything, and there are a lot of unrelated findings which I didn’t use.

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Attachments

Attachments A. Final version of project plan

What is children's eating culture?

Research on children's eating behaviors, use appropriate design method to improve their eating experience

Background

One of the most concerned aspects parents worried about their children is their diet quality. Does the child had enough food? Does he/she achieved the healthy nutritional standards? How to make them focus on eating and eat faster? How to let them eat more vegetables and fruits instead of junk food? But how about the children's feeling? They are restricted from things they like, pressured to eat "good" but not tasty foods, mealtime become unhappy experiences.

Aim & purpose

After learning in Child Culture Design in a year and a half, I am very interested in the development of early childhood behavior patterns, I would like to carry out in-depth investigations on children's food culture through this graduation project, hope to understand child's eating behavior, food preferences and choices. Base on the conclusion of my research study, I want to find a good way in design field to improve children's eating experience, and also hope to reduce the stress and worry of parents.

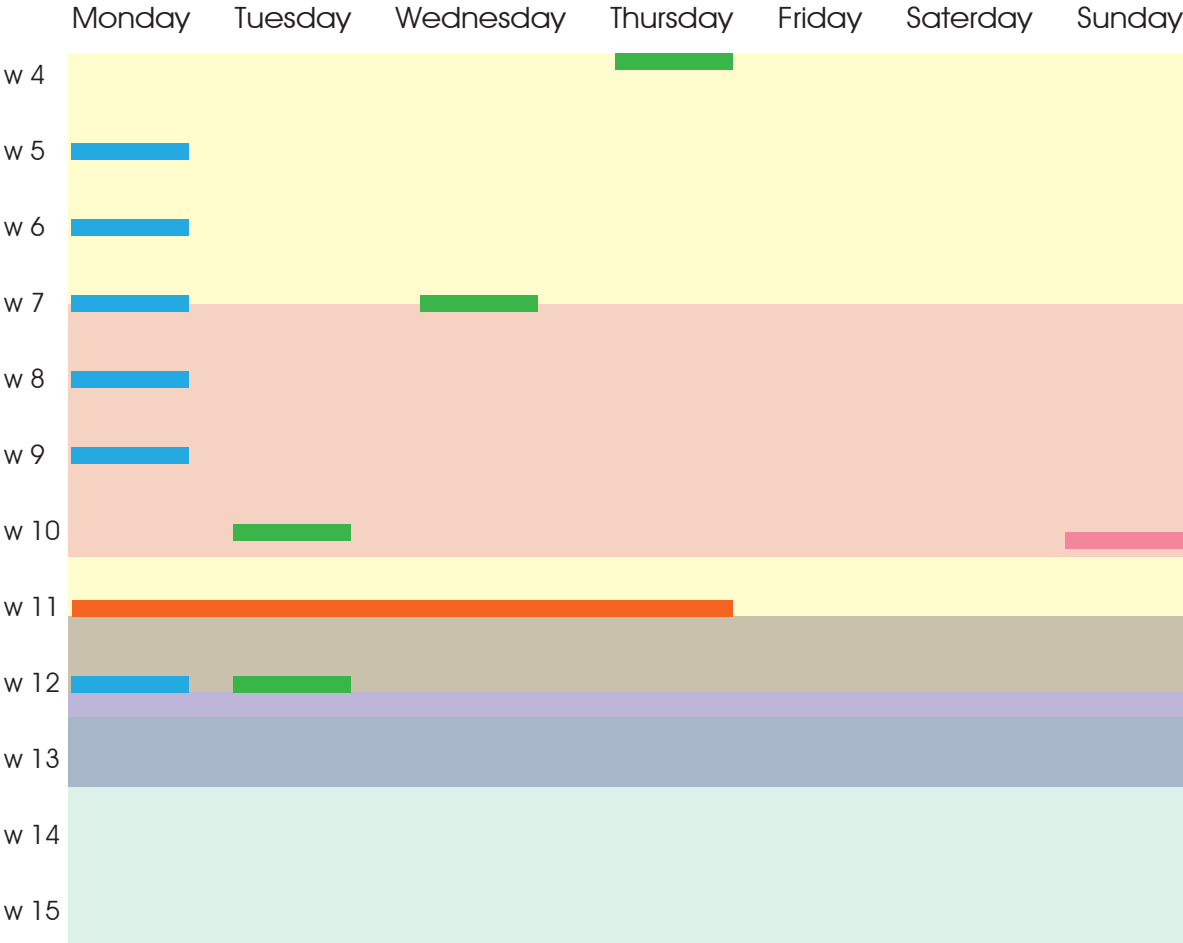
Research Questions

- What is children's eating culture? (Key Question)
- What aspects influences children's eating behavior?
- What is healthy eating? Is healthy only mean eating more vegetable and fruits?
- Why children don't like healthy foods? Why do they love sweets and high-fat food?
- What is fun eating? How does it influence children's eating behavior?
- How can I make children's eating environment more enjoyable by the help of design?

Target Group & End Result

The target group and end result will decide after the research.

Time Plan



w 16



w 18



w 20



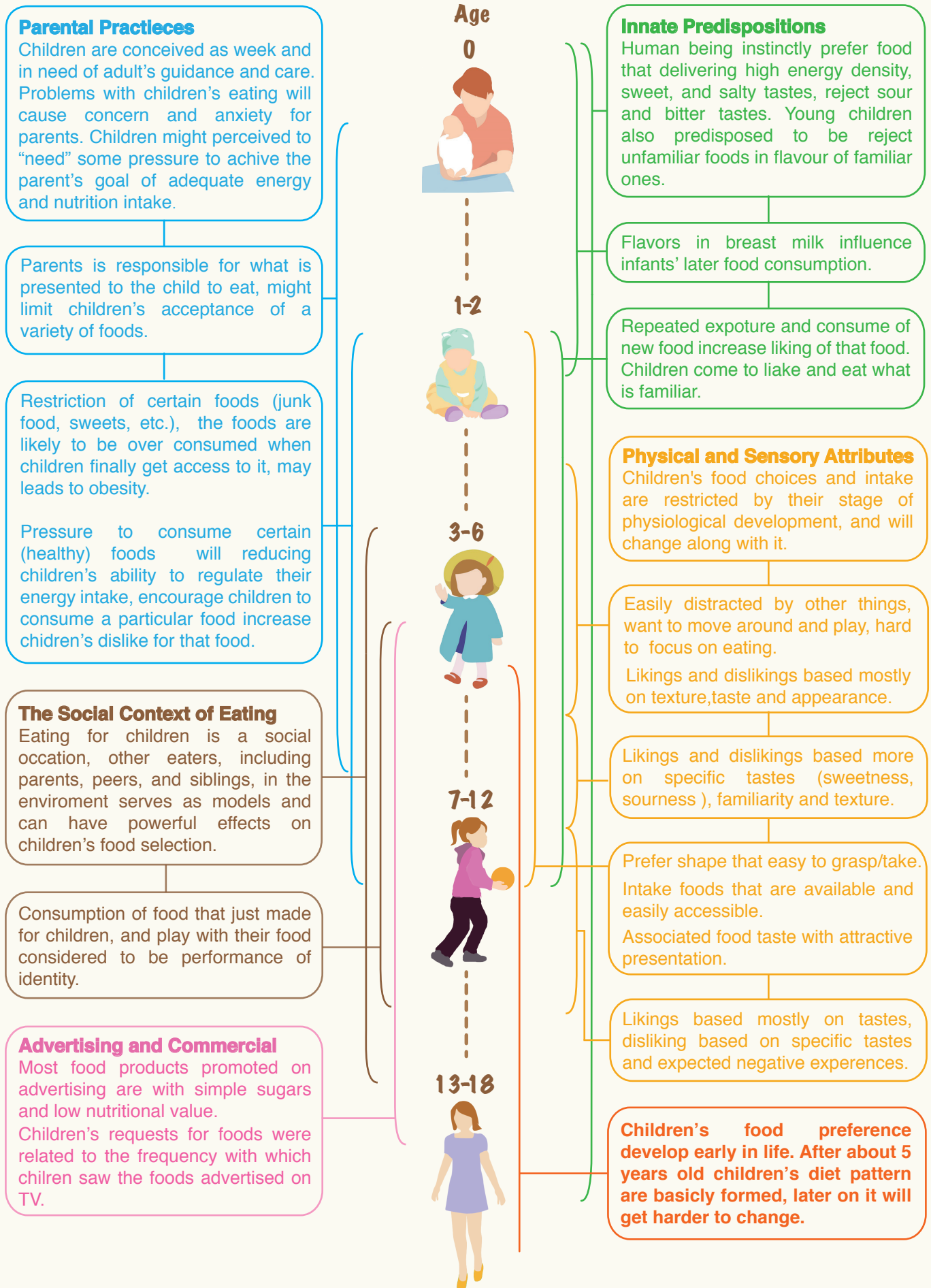
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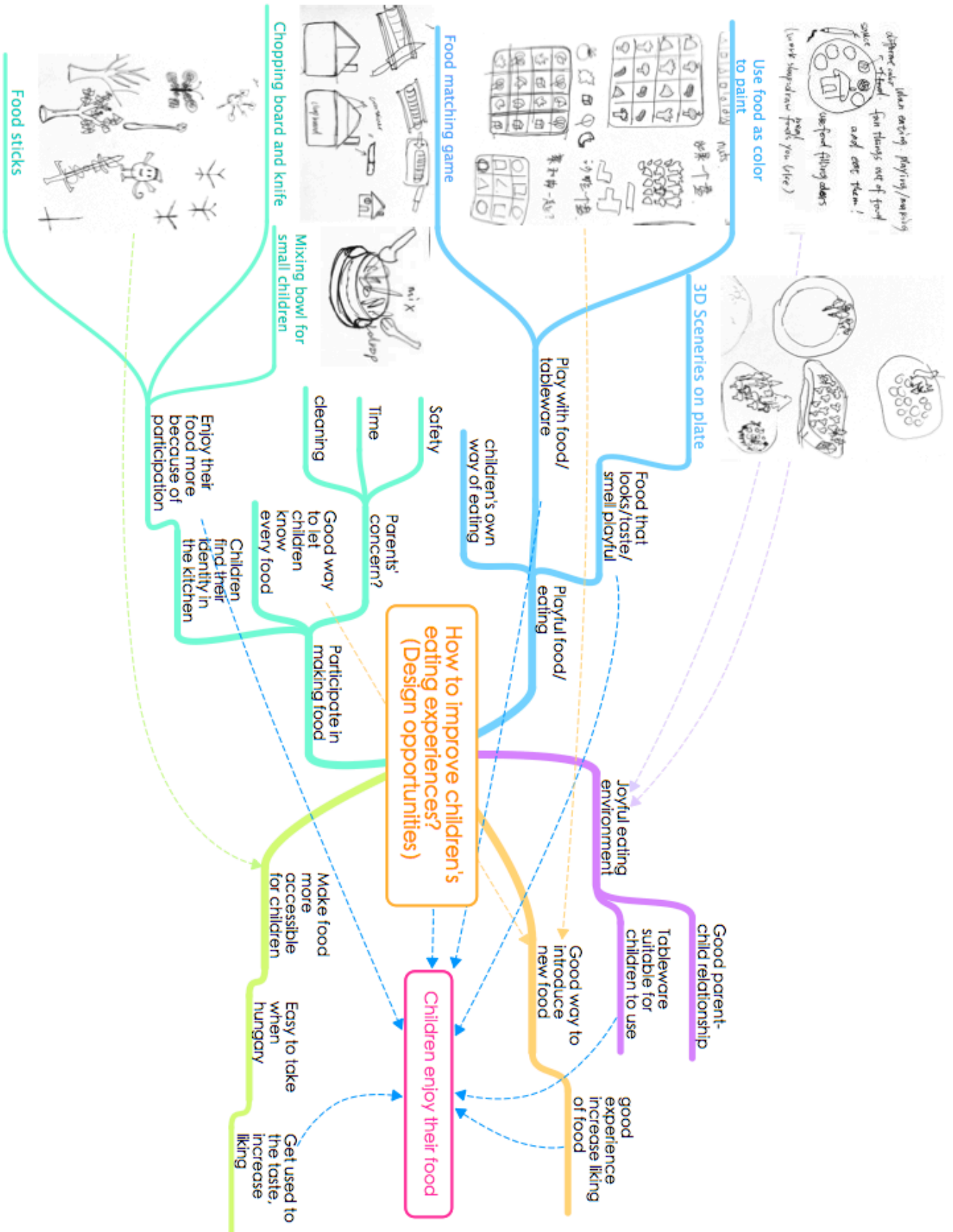
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- Tutorings
- Research
- Seminars
- Sketch ideas
- Decide final idea
- Develop details
- Presentation and hand in
- Make prototype

Children's Eating Culture



Attachments C. Brainstorming



Exam Project

Children's Eating Culture

Research on children's eating behaviors, use design method to improve their eating experience

Cheng Si
Child Culture Design
HDK

Background

Healthy growth is what every parent want for their children.
Eating is a very big part of healthy growth, feeding problems can interfere with children's health and affect the entire family.
When every meal becomes an ordeal, there is a problem.

Worried parents:

“

*Is my child achieved the nutritional standards?
How to make my kid focus on eating?
How to let children eat more vegetables and fruits?
How to prevent child obesity?*

”

Unhappy children:

“

*I hate vegetables!
Why can't I have chocolate as my lunch?!
My mom force me to eat "healthy" foods whether I like it or not.
I put apple sauce on broccoli, it's the only way I can eat them.
Every time when I couldn't finish my plate, everyone gets unhappy...*

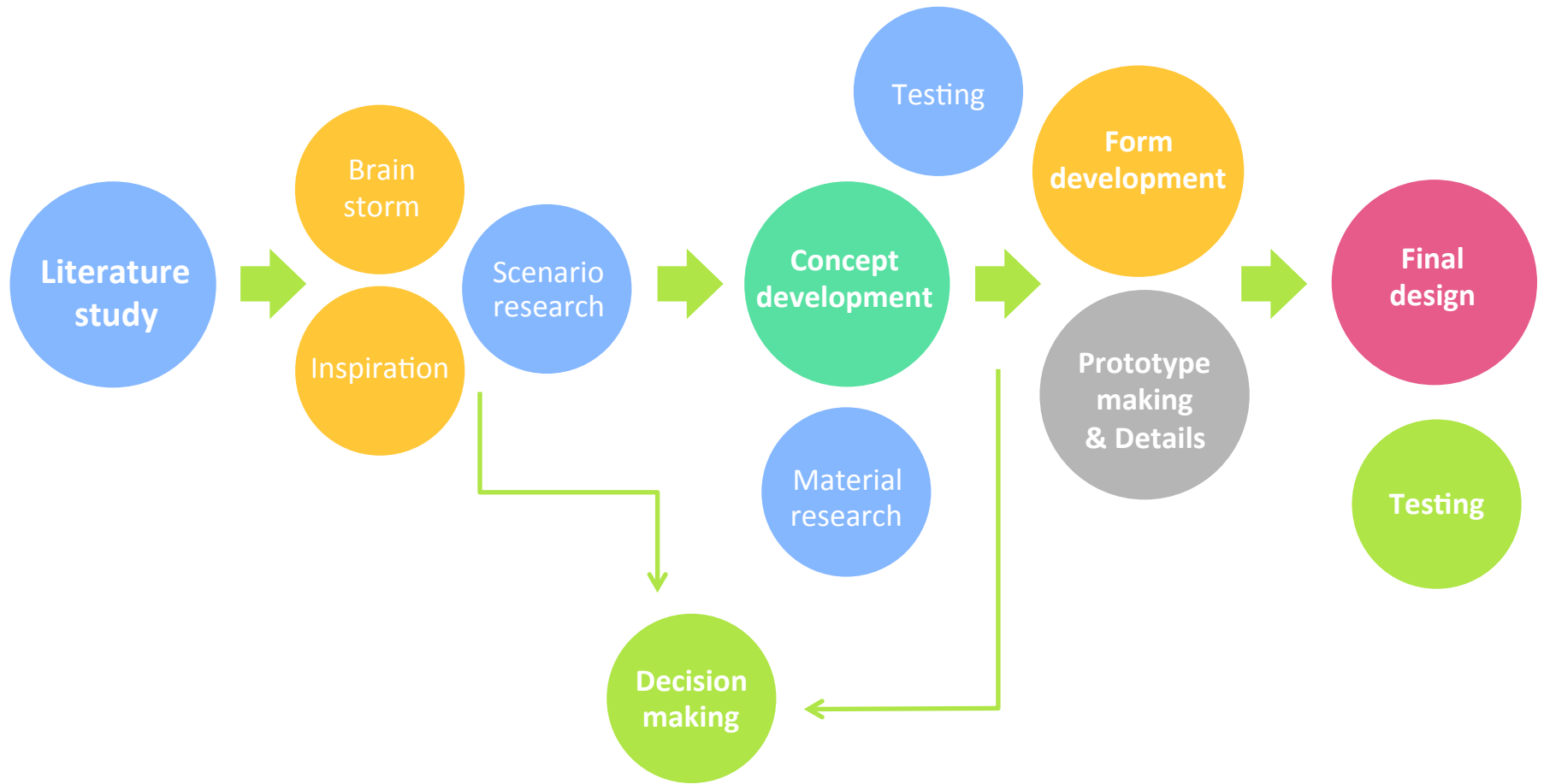
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Objectives and Aims

As a designer I want to help out and improve this situation. I think healthy eating not only means the body grow stronger and more capable, it also contain psychological well-being. I want to go deeper research on children's eating culture, find the reason why so many children don't like to eat, and hope that through my research and design, to improve children's eating experience in both healthy and happy ways, also make their worried parents relaxing, promote a well parent-child relationship.

Design Process



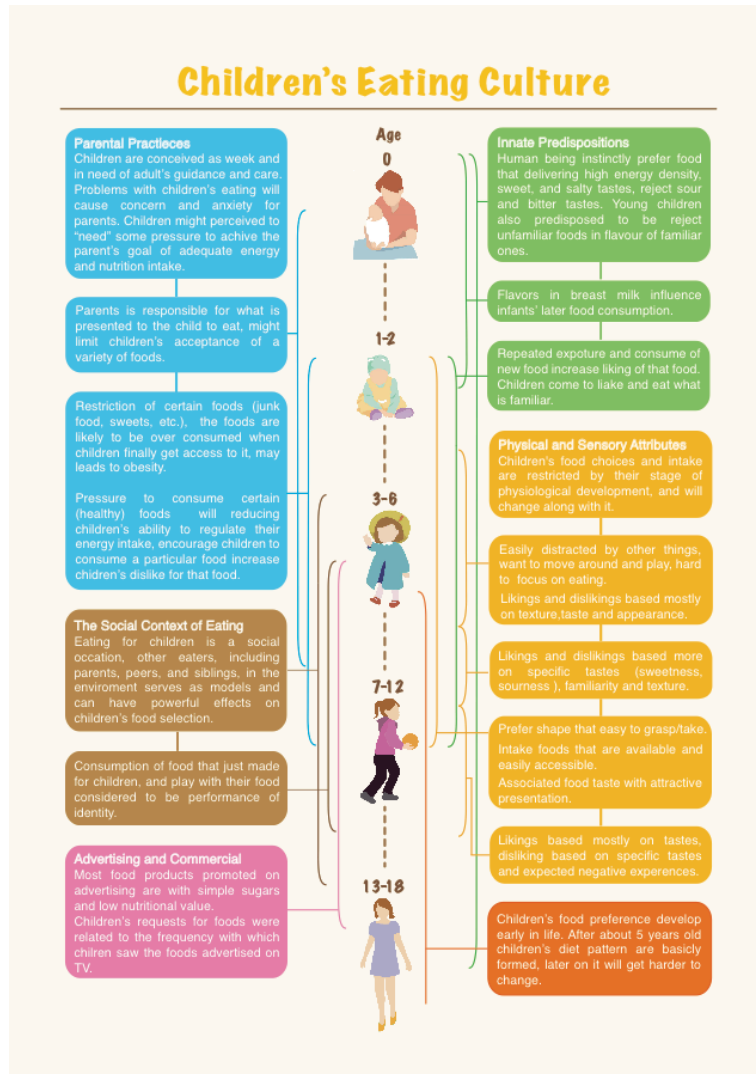
Literature study questions

- What is children's eating culture?
 - How does children's eating culture develop?
 - What aspects influence children's eating behavior?
 - Why children don't like certain foods?
 - How to let children enjoy eating?



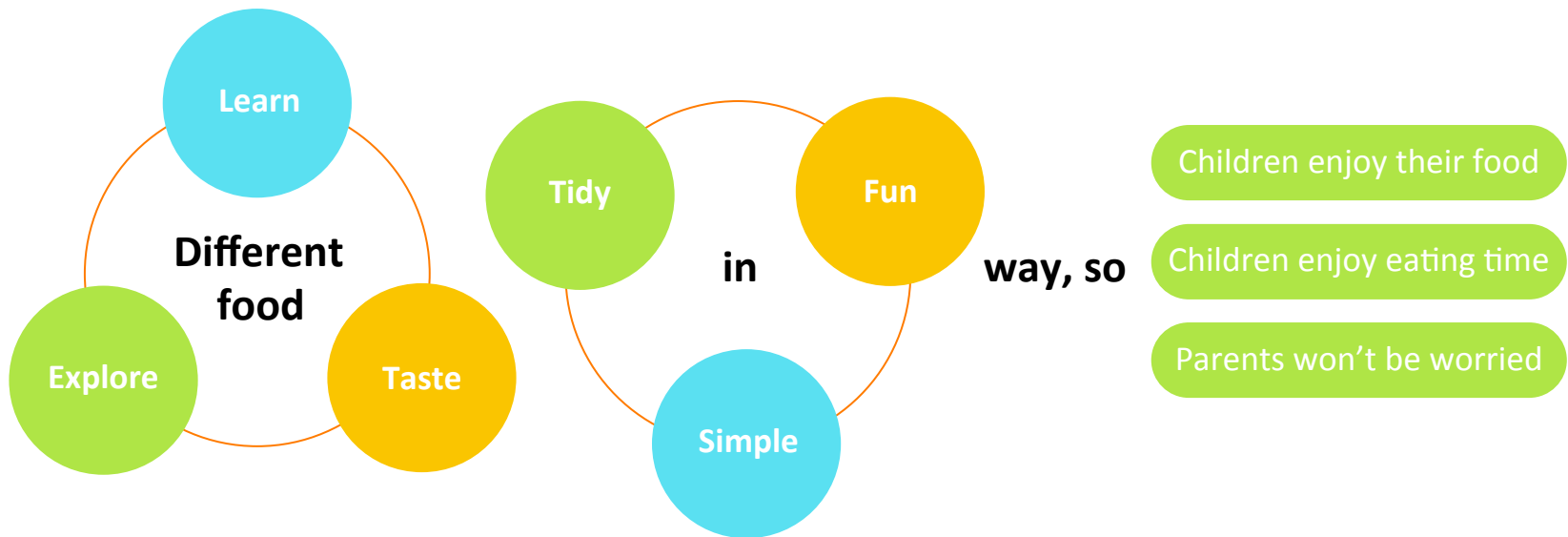
- How can I make children's eating environment more enjoyable by the help of design?

Results of literature study



- Let children try different variety of foods in early ages.(<5)
- Introduce new food in the way children accept (gradually).
- Give children a nice eating experience.
- Be a positive role model.
- Educate children about nutrition and healthy eating knowledge.
- Make foods in interesting shapes or set out that children would like.
- Let children participate in cooking.

Design definition



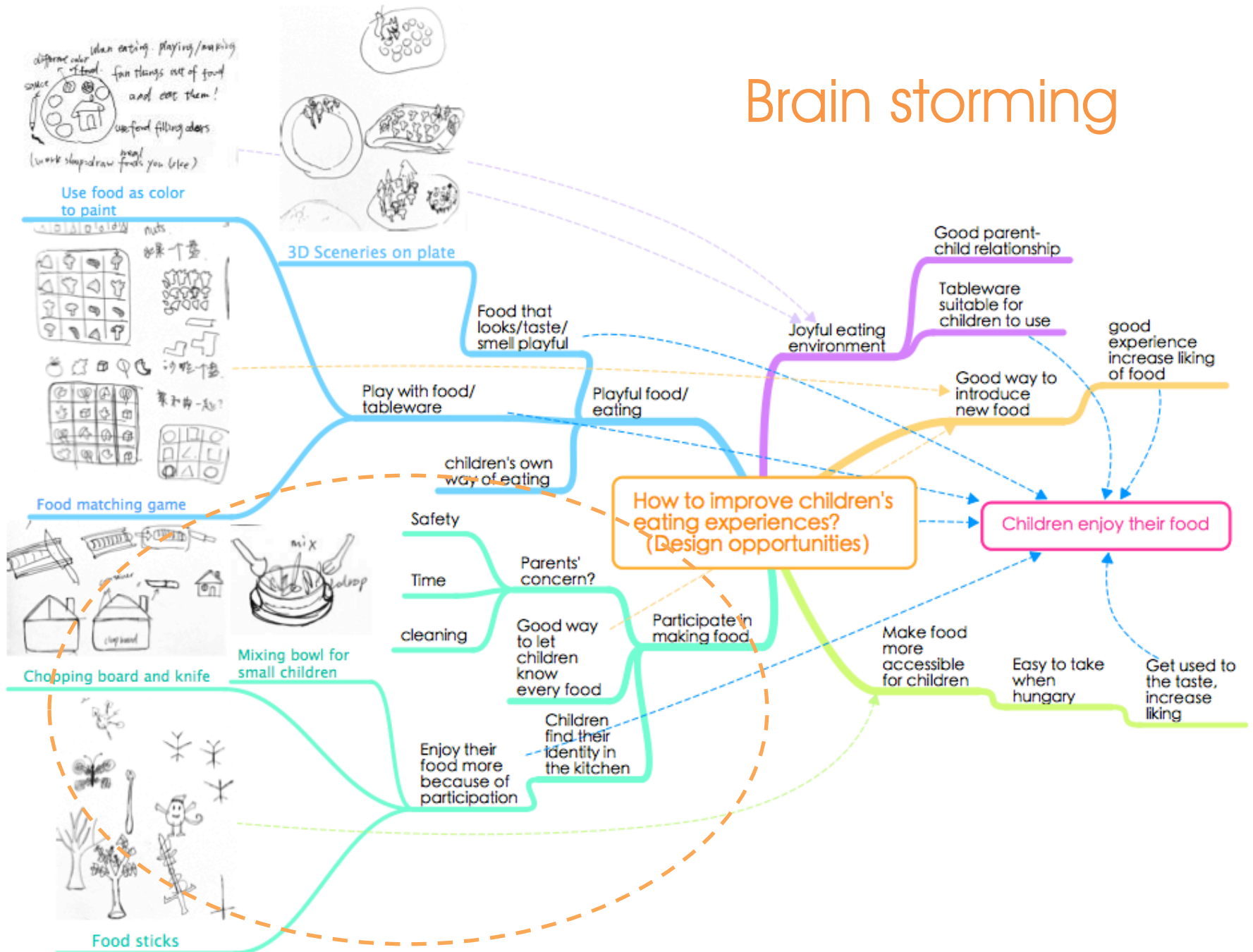
Inspirations



(BITE-SIZE)



Brain storming



Let children cook!

- **Natural way to discuss nutrition. And fun way to learn about food.**

Cooking engage all of the senses – seeing, hearing, smelling, touching, and tasting! It makes children more interested in food, and have playful experiences about making food, so to be more willing to accept new foods.

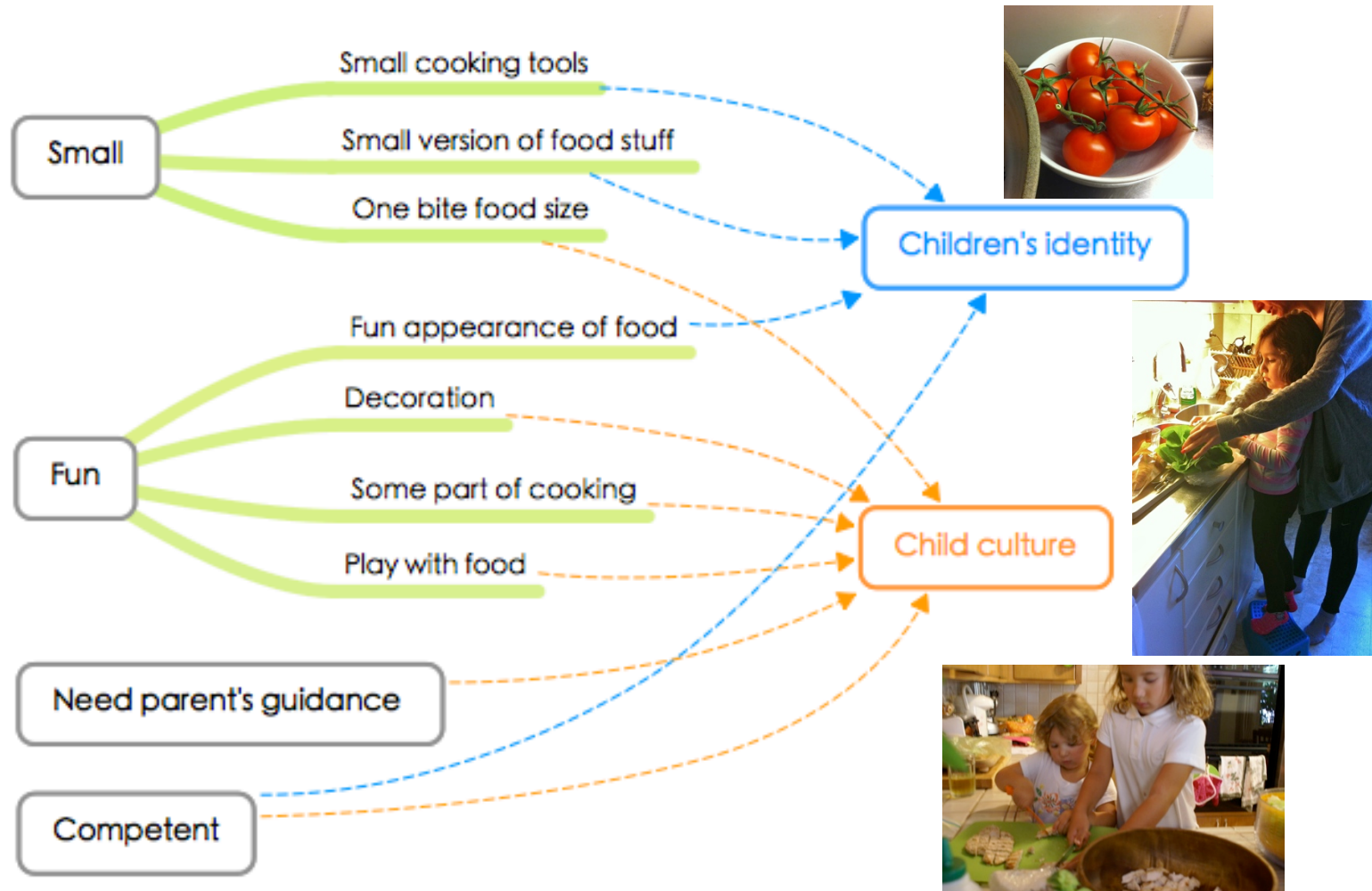
- **Cooking creates a sense of ownership.**

Being apart of cooking makes kitchen children's own place, gives children confidence, and they can feel a real sense of achievement when they eat the food they helped making.

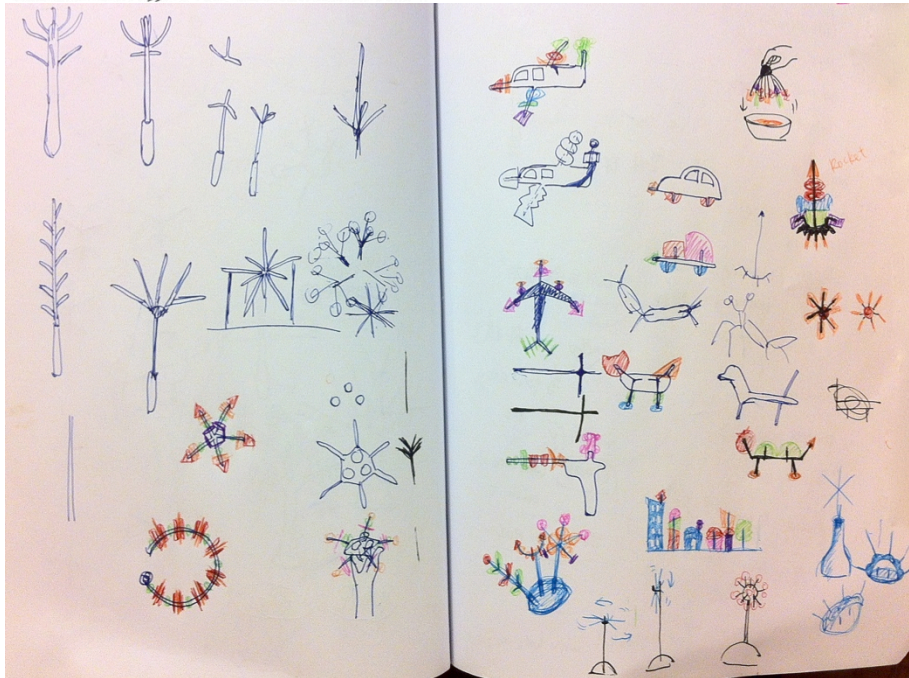
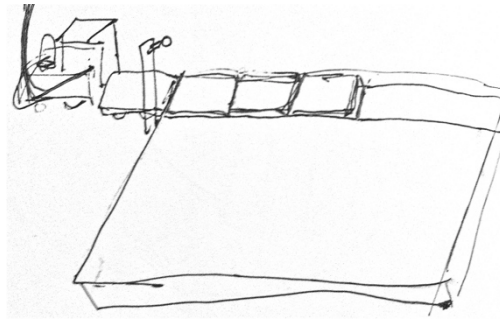
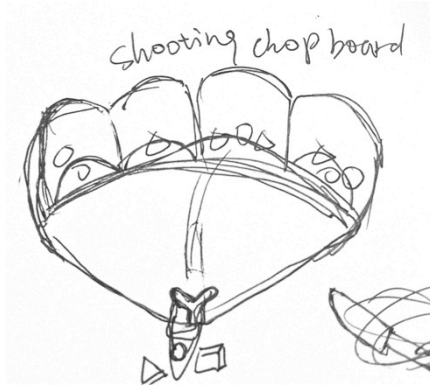
- **Cooking together builds good parents-child relationship**

- **Children will learn not only about cooking, but also safety, a lot of motor skills, vocabularies, and math concepts.**

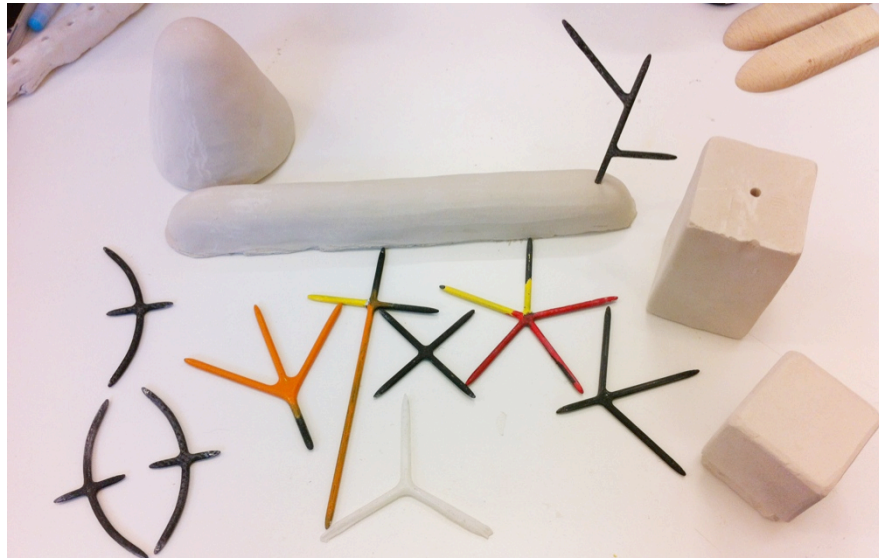
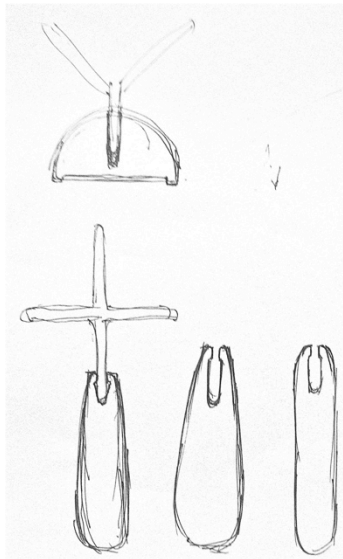
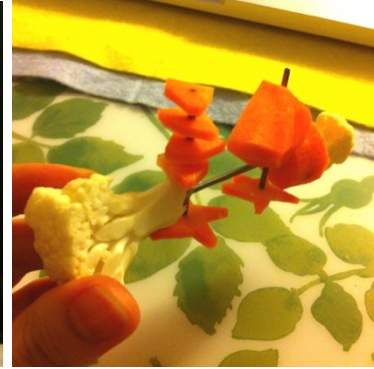
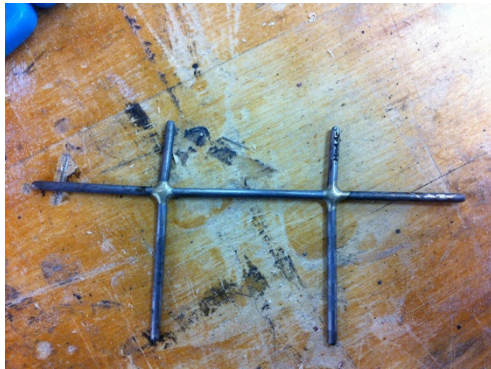
Target group and scenario research



Concept Development



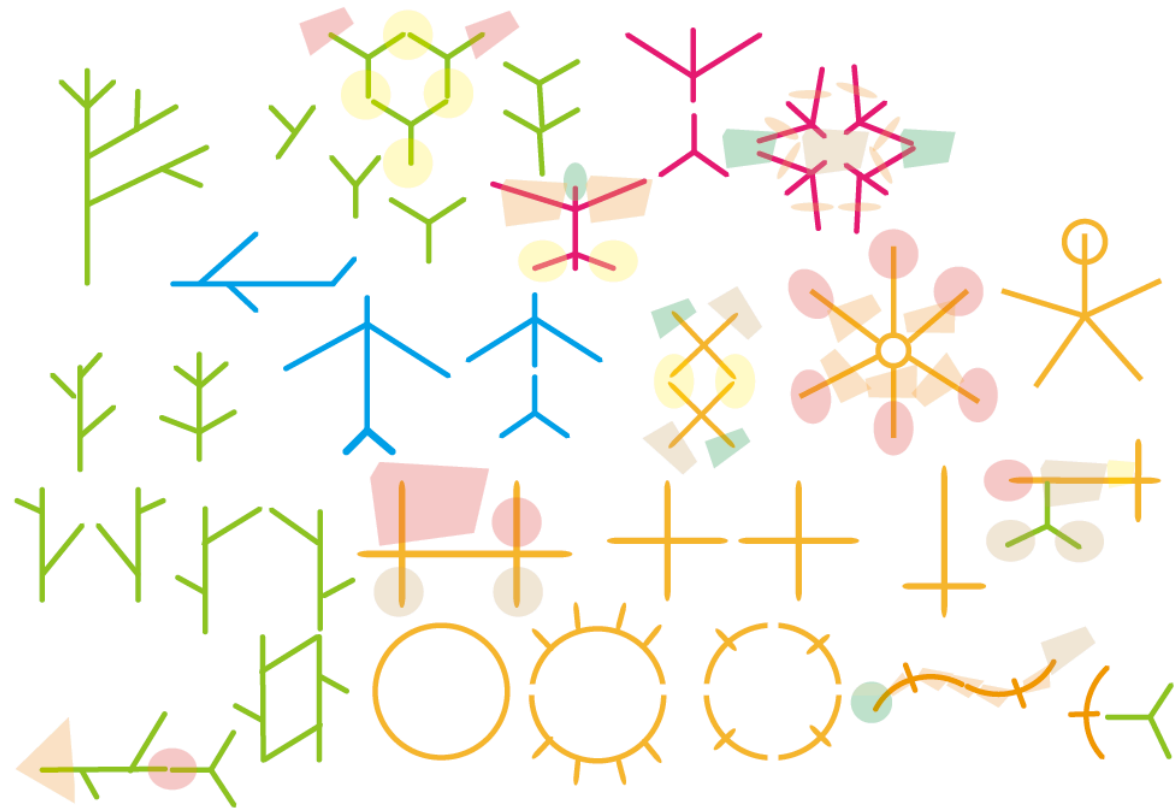
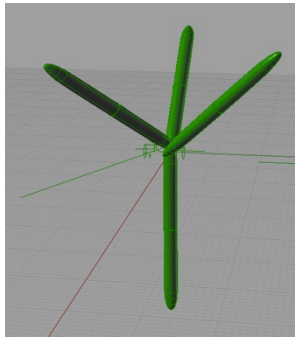
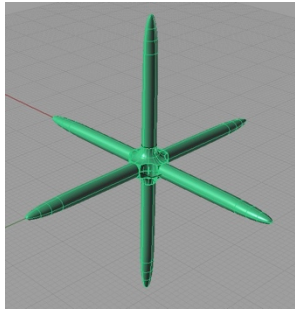
Testing



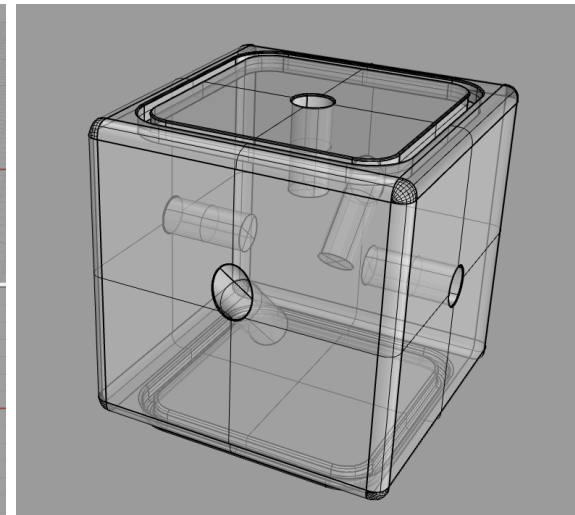
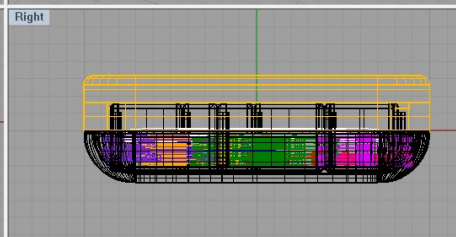
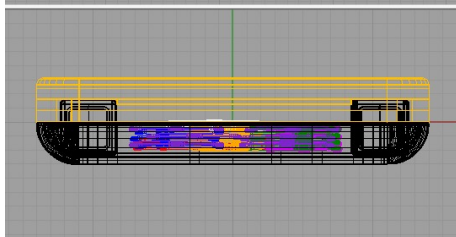
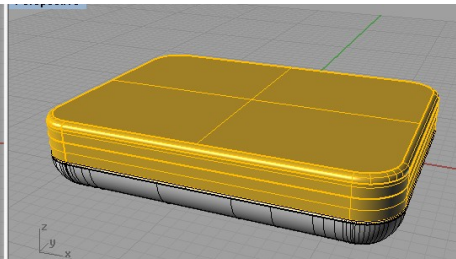
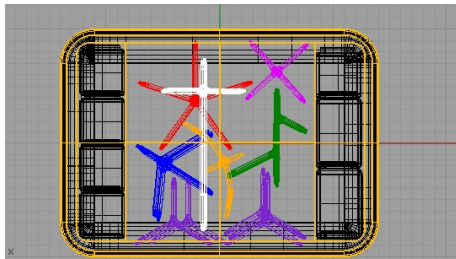
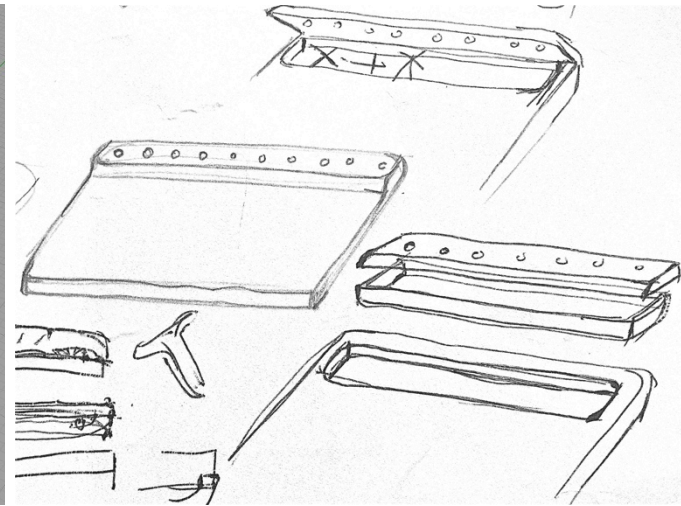
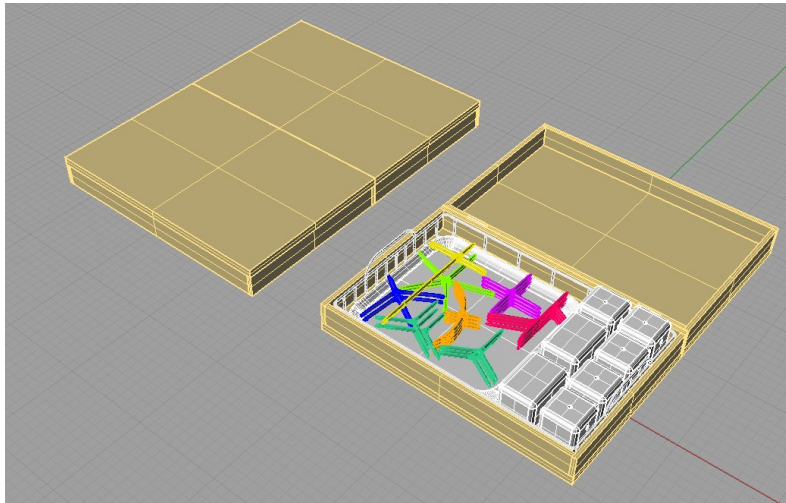
Material considerations

Product	Material	Characteristic
Cutting board	Wood(Beech)	<ul style="list-style-type: none">• Natural material• Kind to knives• Self-healing• Nice appearance
Plate	Ceramic	<ul style="list-style-type: none">• Perfect for serving food• Nice appearance
Foodplus units	Reinforced polyamide plastic	<ul style="list-style-type: none">• High strength and flexibility• Food approval• Dishwasher-safe• Heat resistance to 220°C
	Silicon Elastosil M 4370,	<ul style="list-style-type: none">• High strength and flexibility• Food approval• Dishwasher-safe• Heat resistance to 300°C
Knife	Melamine	<ul style="list-style-type: none">• High hardness, scratch- and shatter-resistance• non-absorbent• Dishwasher-safe

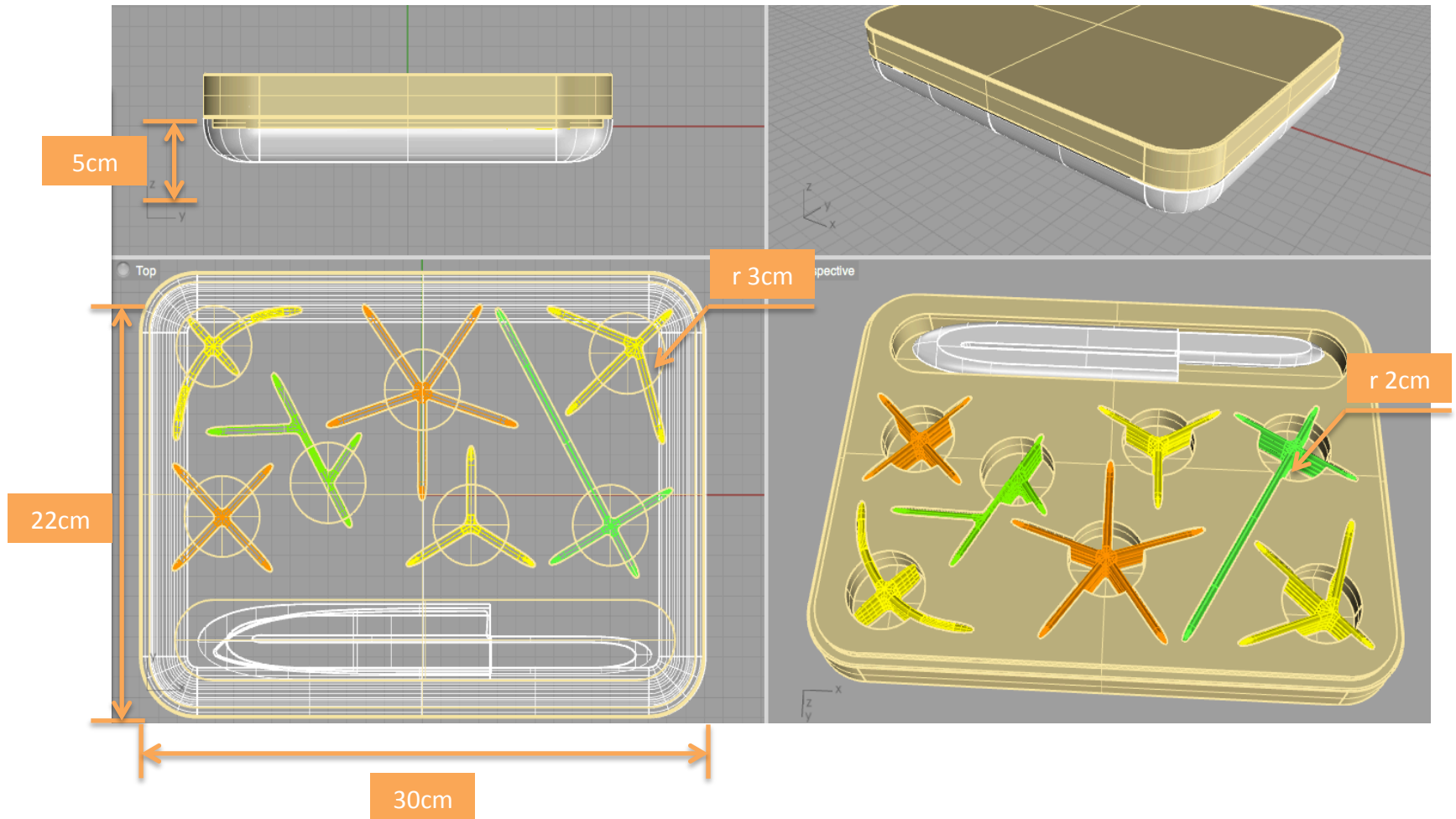
Form Development



Form Development



Final Design



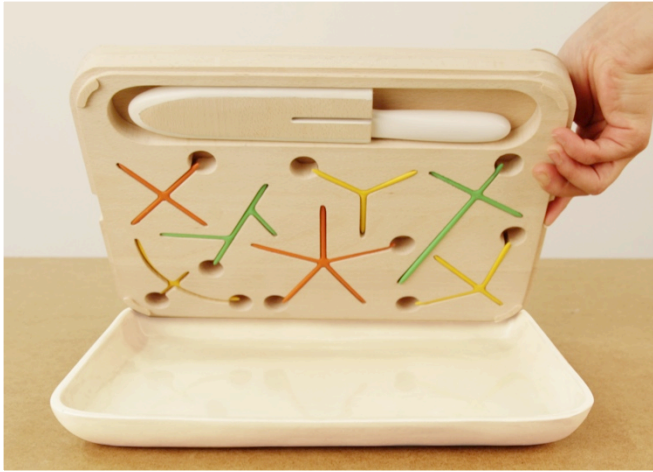
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FoodiCraft



FoodiCraft



FoodiCraft

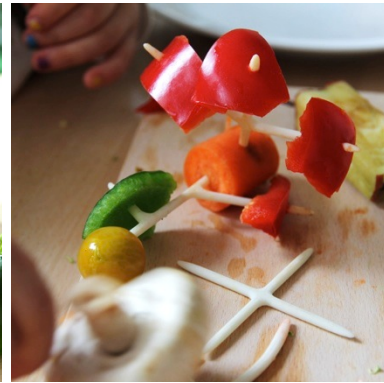


User test workshop



User test workshop





Thank You 😊

