



# KitchenCompass for Kids

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# Original Kitchencompass Business Model Canvas

Kitchencompass is a wearable and AI-driven recipe generator. It creates personalized recipes with the ingredients you have at home and guides you through the cooking process. The original targets are collage students. The goal of Kitchencompass is to make cooking easier and more fun, reduce food waste and teach new recipes.

The product consists of a chefs hat with an camera and a base used for charging and printing and reviewing the recipes. An app is also included for posting and reviewing recipes.

In this paper we will create a new expansion strategy. We will expand the target users from collage students to include children and their families. We will do this by using the several design innovation methods thought during the course.

The end result will be a strategic proposal backed by science for Kitchencompass kids.



Figure 1 Kitchencompass (OpenAI, 2025)



Figure 2 Using original Kitchencompass (OpenAI, 2025)

**The value proposition** of Kitchencompass is that it is a wearable AI-powered device that suggest recipes and guides you through the cooking process. It generates these recipes using ingredients you have at home by taking a photo of them and analysing the picture. It helps student with limited experience become familiar with cooking, makes the process easy and fun, introduces them to new recipes and promotes sustainability.

**The customer segments** are college students and young adults who life away from their parents for the first time. They rarely or never cooked at home and because of that lack the meal ideas, the time and the skills to provide themselves with healthy

and consistent meals. A secondary segment includes people interested in home automation and AI assistance.

**The channels** we use are online sales on platform like Amazon and our own website. We use social media marketing on platforms like TikTok and Instagram and campus ambassadors to reach our costumers.

Our **costumer relationships** consist of an online community where users post the recipes they have generated. They can also find the creations of other users and leave reviews. The device also as an build in feedback loop - you can rate the generated recipes to help the AI model learn your taste. We provide support and costumer service through our website and app.

The main **revenue streams** are the purchases of the device. A small amount of revenue will be generated by the subscription necessary to use the product. This subscription is used to cover the cost of running the AI models. We can expand by integrating with grocery delivery services.

Our **key activities** are running the AI models needed for the product on our own servers, product assembly and marketing to our student demographic. We will also perform user testing and model training with the collected feedback to improve our recipe generations, thus improving our product.

Our **key resources** are the designs of our AI models (how do they interact with the users and themselves, the prompts used for generation, etc.), the design of the hardware (the chefs hat with a camera and the base used for printing and charging), our manufacturing capability, the servers for running the AI models and the brand of Kitchencompass.

Our **key partners** are the suppliers for the components of our hardware, manufacturers for the hat and the base, the suppliers of large languages models like ChatGPT.

Our **cost structure** is as follows:

- Hardware production
- AI development
- Servers for AI deployment
- Software development
- Marketing

- Consumer support
- App development and design

Economies of scale in manufacturing can improve our margins over time.

AI development is not constant and will be finished if we are satisfied with the generated recipes.

## Author's Note

Due to the layout of the document I exceed the maximum of 3 pages. When the layout is changed by making images and headings smaller I do reach the max of 3 pages. The text together with the infographics is about 1400 words long and therefore under the limit. I hope it does not matter that this version of the paper exceeds the page limit due to the layout. By changing the layout I will decrease the readability.

## New Market Opportunity

Children love to imitate their parents, just look at how some children's toys copy grown-up activities (figure 3,4) and are always eager to learn new things (Jirout et al., 2024) (Tadayon Nabavi & Bijandi, 2012).



Figure 3 Example of children's toy 1 (Amazon, n.d.) Figure 4 Example of children's toy 2 (Ubuy, n.d.)

Cooking themed toys are popular in the sector; the market was valued around 3.0 billion USD in 2020 (Future Market Insights, 2021).

In a UK survey of 2000 residents learn to cook was rated as the fifth most important life skill (Lavelle et al., 2016).

Learning how to cook at a young age leads to healthier eating habits, better cooking skills and improved long-term health (Schmidt et al., 2022) Muzaffar et al., 2018) (Lavelle et al., 2016).

A U.S. national survey showed that 77% of parents said that a computer/laptop had a positive effect on the learning of their child (Morning Consult, 2023). Another study found that parents are willing to pay a high price for educational applications they trust (Montazami et al., 2022). Finally, a toy industry report found that 69% of parents would cut expenses to buy the latest toys for their children (Wakefield Research, 2024). These studies show the willingness of parents to buy new educational and technological toys for their children.

There is a clear gap in the market. We will target children (roughly 6 to 12) and their parents to teach cooking to everybody.

To get a complete image of this opportunity I conducted a PESTEL analysis (see Appendix D). It discusses some key factors relevant to the product.

## User needs

I created personas (see Appendix A) to guide the design process. They have given me the following insights:



*Figure 5 Insights Persona's (OpenAI, 2025)*

## Market Potential

Our main segments are big; in 2022 there were approximately 24.2 million children from 6 to 11 in the U.S. alone (ChildStats.gov, 2023). Like I said before they are willing to buy educational toys.

According to Fortune Business Insights the global educational toys market was valued at 66.22 billion USD and it's projected to reach 126.02 USD by 2032 (Fortune Business Insights, 2025).

In one study, 32.1% of mothers had the educational aspects of a toy as the main buy factor (Fisher et al., 2019).

We fill a gap in the market (educational and personalized children's toy for cooking), but our closets competitors are kids cookbooks and cooking classes. I



used a **strategy canvas** (blue ocean tool) (figure 5) to compare our product to these competitors. It shows that Kitchencompass Kids is unmatched in combining personalization, interactivity, fun and a low cost. We have a clear advantage on our competitors.

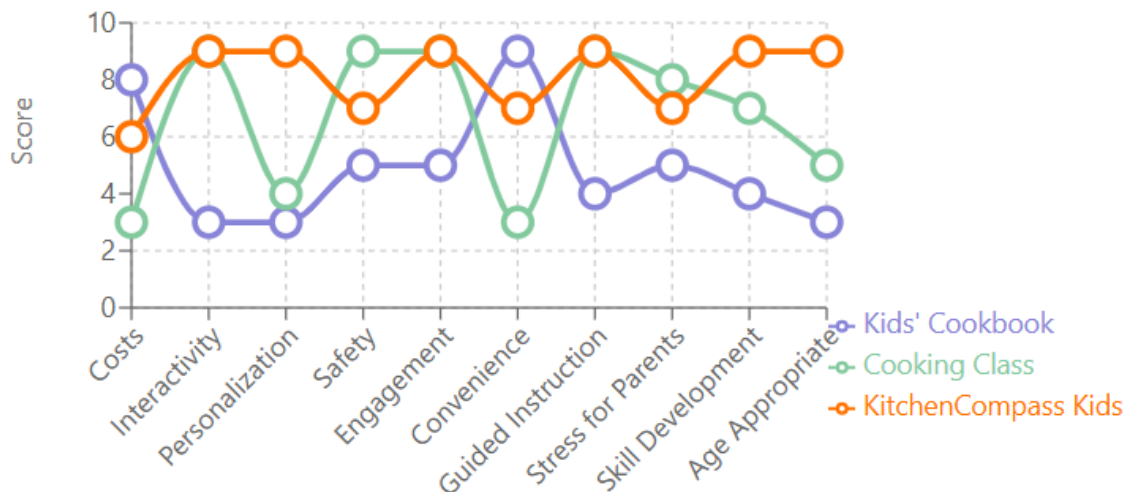


Figure 6 Strategy Canvas (see Appendix B for in depth table)

**Note:** costs and stress for parents values have been inverted (higher scores means a better value proposition).

## Kitchencompass Kids Concept

I used a **Customer Journey Map** to work-out the concept (see Appendix C).

Kitchencompass kids is a child-friendly version of the original. It features a small chefs hat in fun colours and designs with an build in camera. The base contains a small screen with a build in speaker, microphone and a sticker printer. All photos and audio files are analysed and stored locally.



Figure 7 Design of chefs hats (OpenAI, 2025)





Figure 8 Example of explaining with pictures (OpenAI, 2025)

friendly recipes at the correct level with ingredients available at home.

The costumer journey map (see Appendix C) will be used in future development as it outlines other improvements and touchpoints.

The screen will show AI-generated images of each step. The speaker will give instruction to the children and the child can interact via the microphone.

When they complete a recipe they can print it with the sticker printer and add it to their own recipe book.

The device will also include gamification features since studies have shown that they improve children's learning, motivation and engagement (Li et al., 2023) (Alotaibi, 2024).

The AI will generate simple and child-



Figure 9 Examples of sticker designs (OpenAI, 2025)

## New Value Proposition

To ensure a complete value proposition I created **a value proposition canvas** (see appendix E).

Kitchencompass kids is a new educational and intelligent toy. It teaches kids, under light supervision of their parents, how to cook safely and healthy. It provides children with personalized recipes and auditory and visual instructions. It provides parents with a stress free way to involve their kids in the kitchen.

## Technology & IP Perspective

We can create Kitchencompass kids with existing technology by changing the original (see Appendix F). See figure 10.

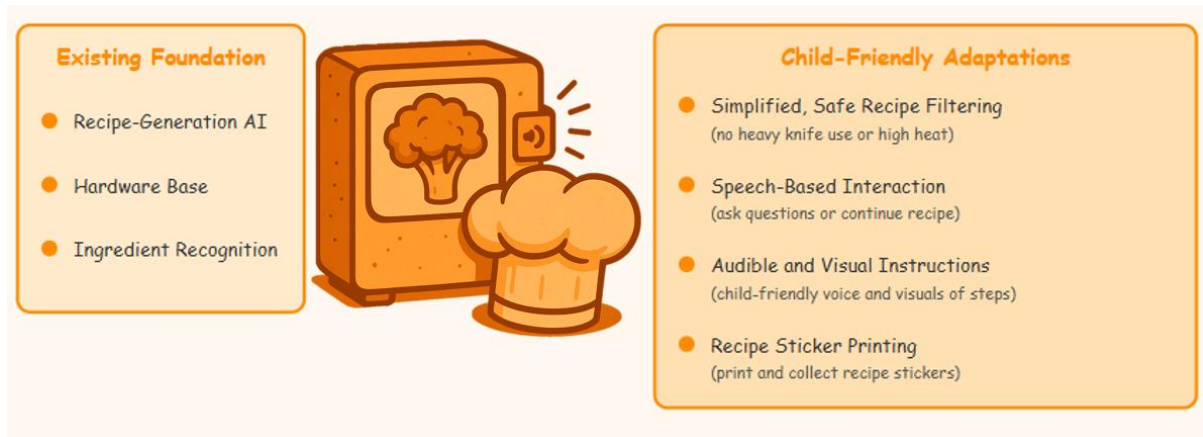


Figure 10 Changing the original Kitchencompass (OpenAI, 2025)

The identity of the product will be protected with a design and/or utility patent to ensure we remain the only provider in the niche. A patent search did not show any comparable products.

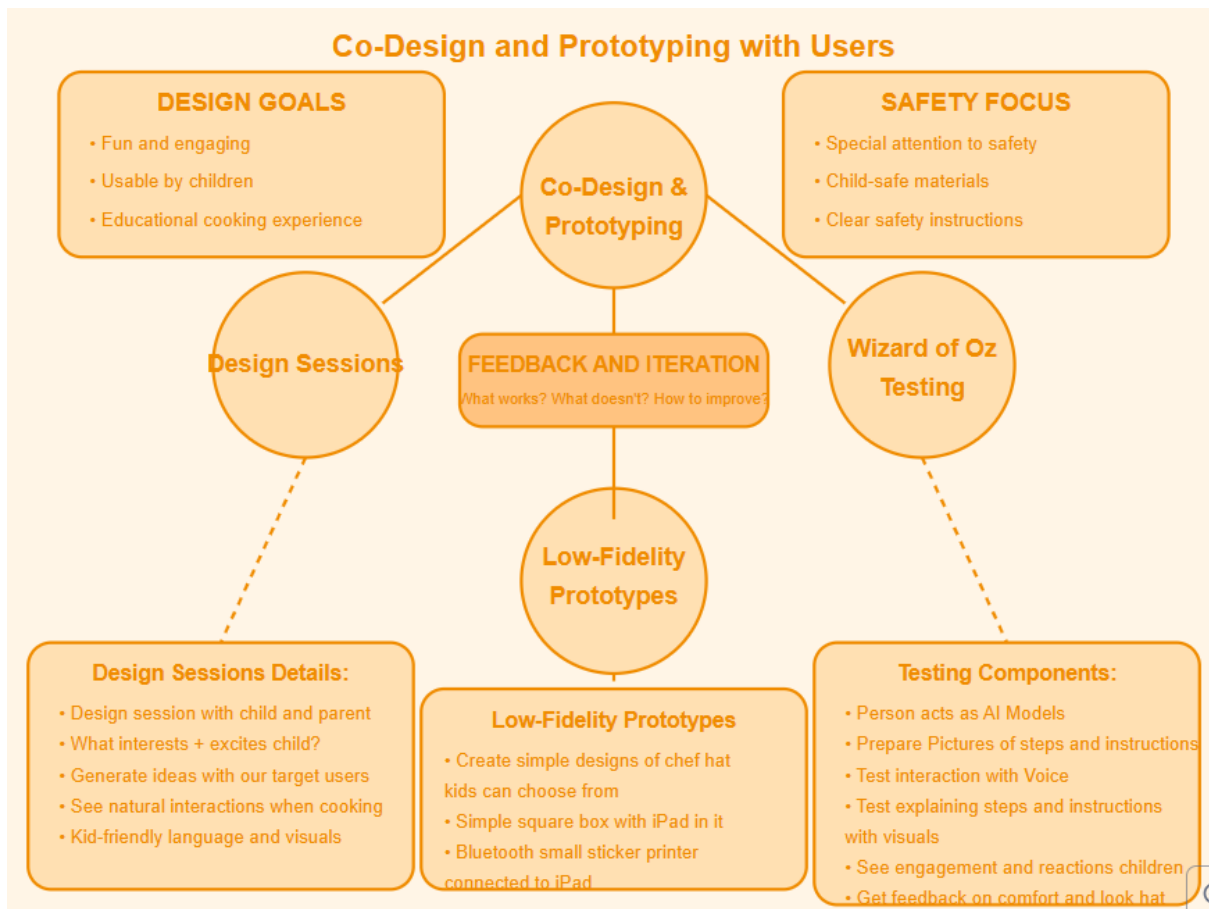
Privacy and data protection are a priority since we will handle the data of kids. We will make sure that the speech and image recognition happens locally, while the recipe and images will be generated with encrypted servers. The data will not be used to train AI-models.

## Design & Prototyping Perspective

The concept will be developed with an user centred iterative design process (similar as the original). The personas, the costumer journey map and the PESTEL canvas will be regularly used

After each prototype test a feedback analysis will be performed. I suggest the following design methods:

## Co-Design and Prototyping with users



## Minimum Viable Product Development

I suggest to create a simple but functional prototype to test the concept in real scenarios. We will do this by making minimal changes to the original Kitchencompass and give these prototypes to families.

I created a really basic **MVP Canvas** (see Appendix I) to guide this process. I will make sure to test the following:

- Do children enjoy using the product
- Do children follow the instructions
- Do parents see the value in the assistance it offers
- Do parents see the value in teaching children how to cook
- Does it engage the children enough to cook a whole recipe

## Usability and safety Testing

During prototyping our focus will be on safety. There will be controlled usability tests under strict supervision to find risky scenarios and confusion points. The final design will include several safeguards.

## Organization & Finance Perspective

We will create a new product team for Kitchencompass Kids and include experts in children's education and nutrient. We will have to create new partnerships (education, youth cooking programs, parent influencers, etc.)

The costumer service department will receive new training to communicate with parents (which differs from students).

Kitchencompass development will require an estimated investment of 500.000 euro's (see appendix G).

The original subscription model will be replaced with a free model. AI text and image generation is cheap and there will be a usage cap. With a premium subscription you can exceed this limit.

Many components are shared with the original. We have the advantage of economies of scale. A higher budget is needed for certifications and insurance.

By diversifying the costumer base Kitchencompass Kids will improve the long term strategy of the company.

I based these conclusion's on **the SWOT analysis** I performed (see Appendix H).

## Justification of Innovation Approach

### Persona's

I used these to capture the needs, behaviours and motivations of our users. This ensured that the concept would be based on real world user insights.

### Value Proposition Canvas

This tool helped create a complete value proposition.



### Strategy Canvas

I created this to prove that Kitchencompass Kids differentiate itself enough from its competitors to be a viable new product.

### Pestel Analysis

I used this framework to see how external factors could impact the product.

### Customer Journey Map

I used this tool to find key touchpoints and areas for improvement. This way I could ensure that the product would be engaging and intuitive. It also outlines future improvements.

### MVP Canvas

I used the MVP canvas to plan out creating the final product with prototypes and to create a better investment costs prediction.

## Conclusion

By applying several design innovation methods I transformed Kitchencompass into a new opportunity and have given clear strategic innovation advice.

# Appendix

## Appendix A

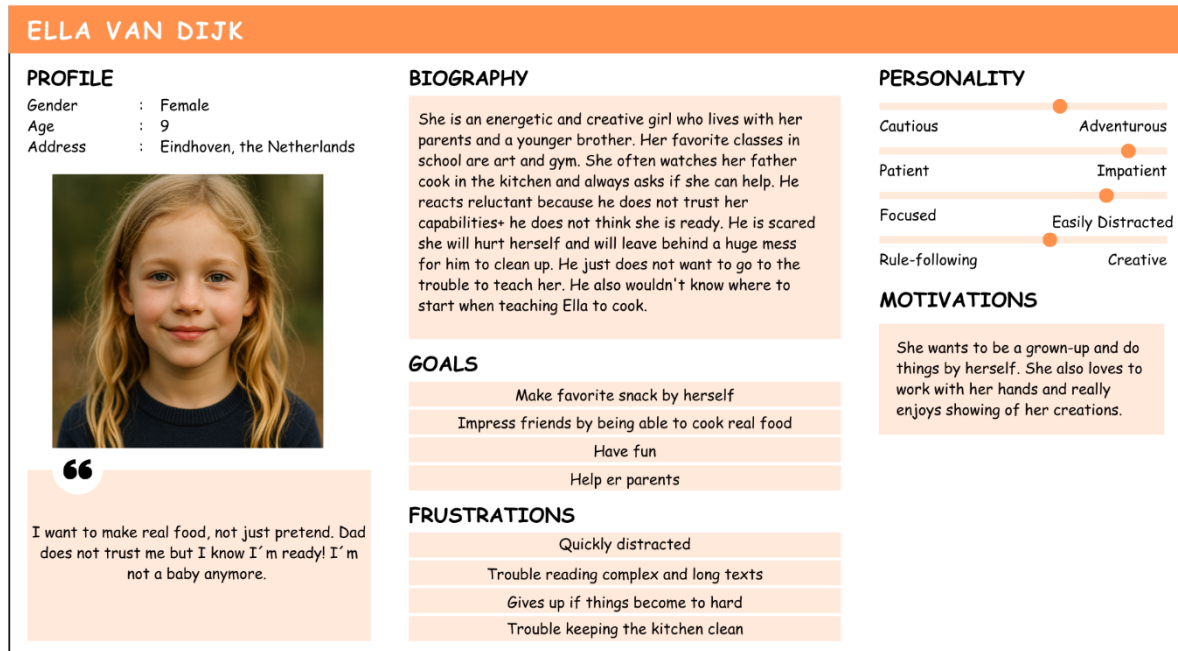


Figure 11 Persona Ella van Dijk (OpenAI, 2025)

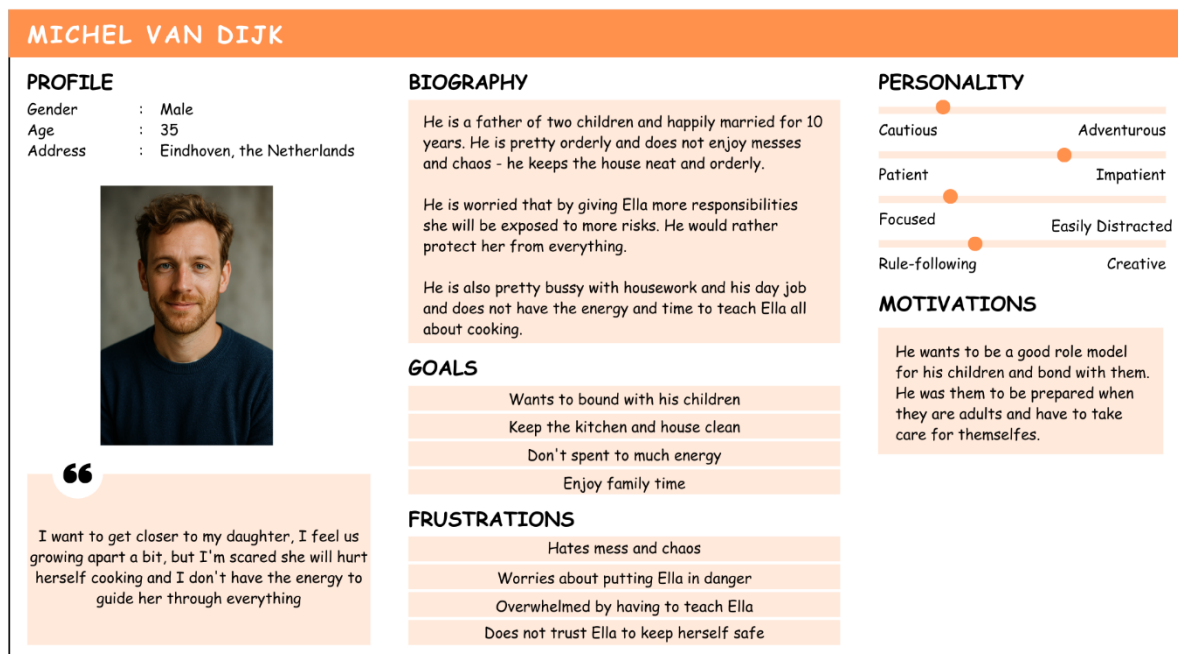


Figure 12 Persona Michel van Dijk (OpenAI, 2025)

## Appendix B

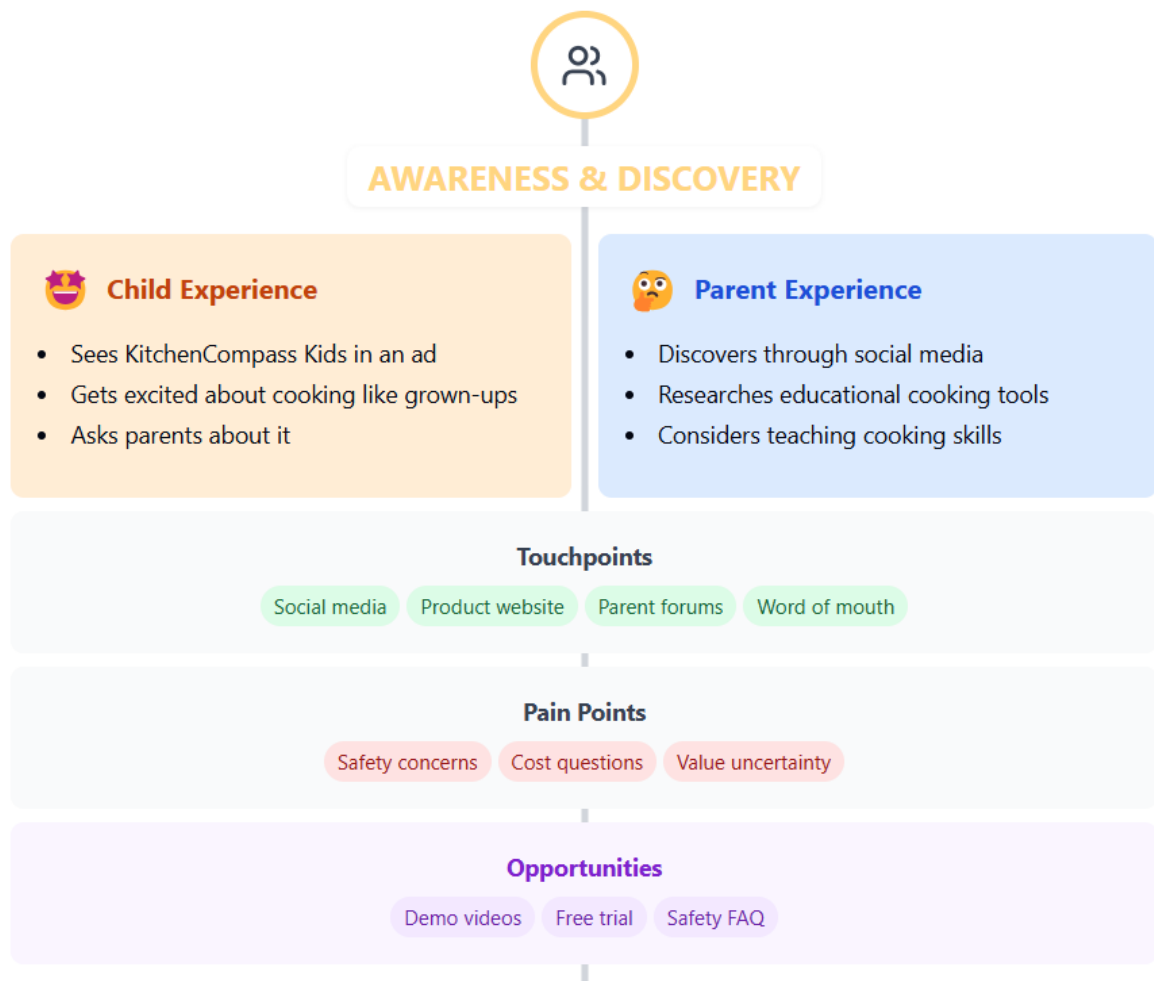
1 being the worst score, 10 being the best score.

For example a score of 3 at costs means the product is expensive.

Key Factor	Kids' Cookbook	Cooking Class	Kitchencompass Kids
<b>Costs</b>	8 - one time purchase of book -relatively cheap - possible to buy cookbook at 13.99 \$ (Target, n.d.)	3 - expensive - some classes for 250 \$ per seat (Sur La Table, n.d.)	6 - one time purchase and potential, not necessary subscription
<b>Interactivity</b>	3 - only photos and text - no input	9	9 - personalized and reacts to child
<b>Personalization</b>	3 - same generic recipes - created for broad audience	4 - generalized classes with large group	9 - personalized using AI technology
<b>Safety</b>	5 - depends on supervision parents	9 - supervision of professional chef	7 - provides safe instructions based on specific child
<b>Engagement</b>	5 - not all kids enjoy reading	9 - interesting experience	9 - personalized, fun sounds, gamification elements, fully interactive, fun hats
<b>Convenience</b>	9	3 - need to go out of your way to go to cooking class - not available in all regions of world	7 - always works with WiFi and at home
<b>Guided Instruction</b>	4 - only written steps	9 - supervision of professional chef	9 - personalized instructions with AI technology

<b>Stress for Parents</b>	5 - kids need oversight and explain questions if they have them	8 - supervision is done by chef	7 - supervision by Kitchencompass Kids
<b>Skill Development</b>	4	7 - professional help	9 - focus on developing cooking skills on long-term
<b>Age Appropriate</b>	3 - parents adapt it for child	5 - not many cooking classes for children	9 - adjusts for age child

## Appendix C







## CONSIDERATION & PURCHASE



### Child Experience

- Explores product photos/videos
- Gets excited about chef hat designs
- Imagines creating meals



### Parent Experience

- Compares alternatives
- Reads reviews
- Evaluates price vs. benefits
- Makes purchase

### Touchpoints

Product website

Online marketplaces

Customer reviews

Unboxing videos

### Pain Points

Unclear expectations

Questions about supervision

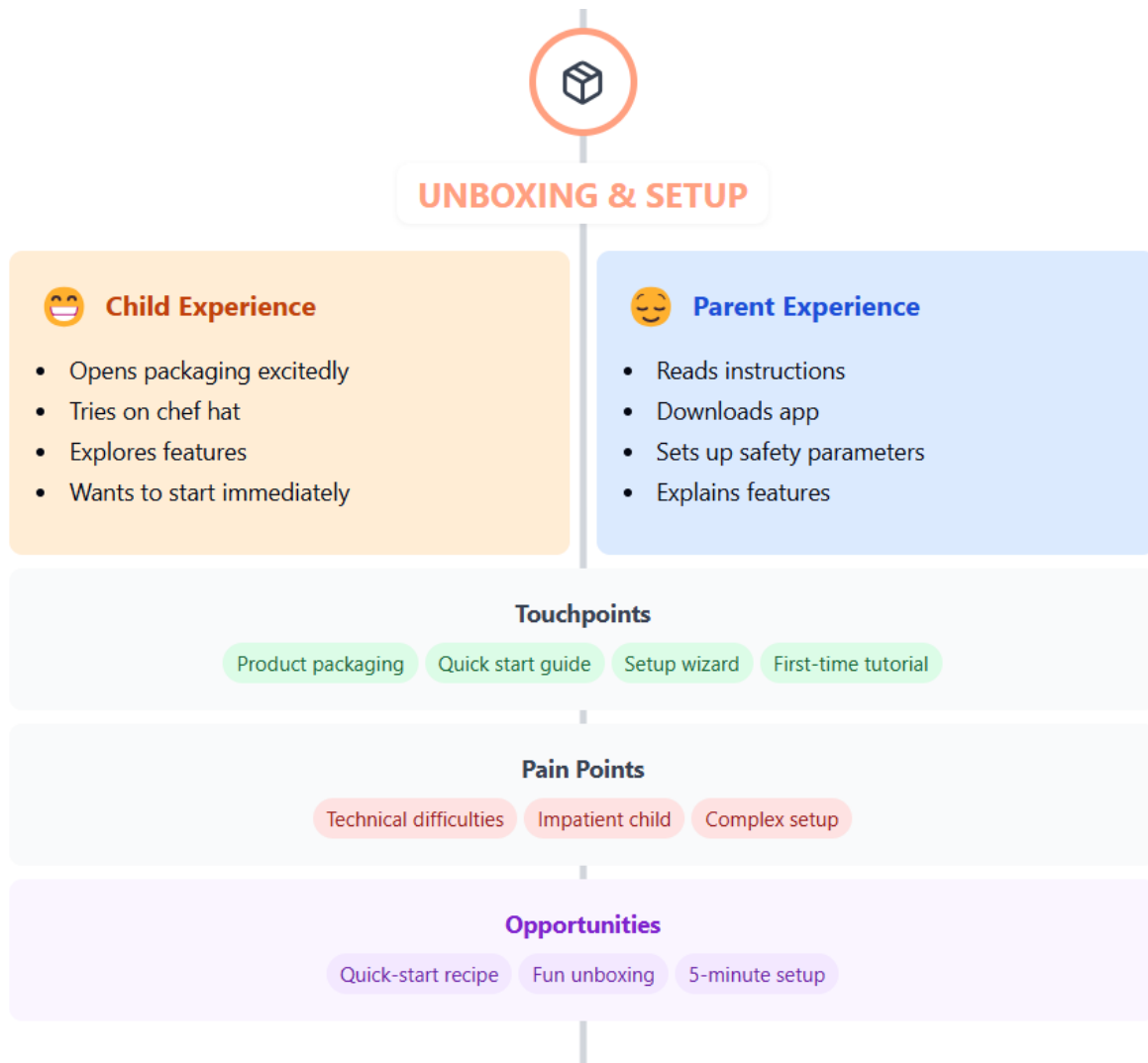
Upfront cost concerns

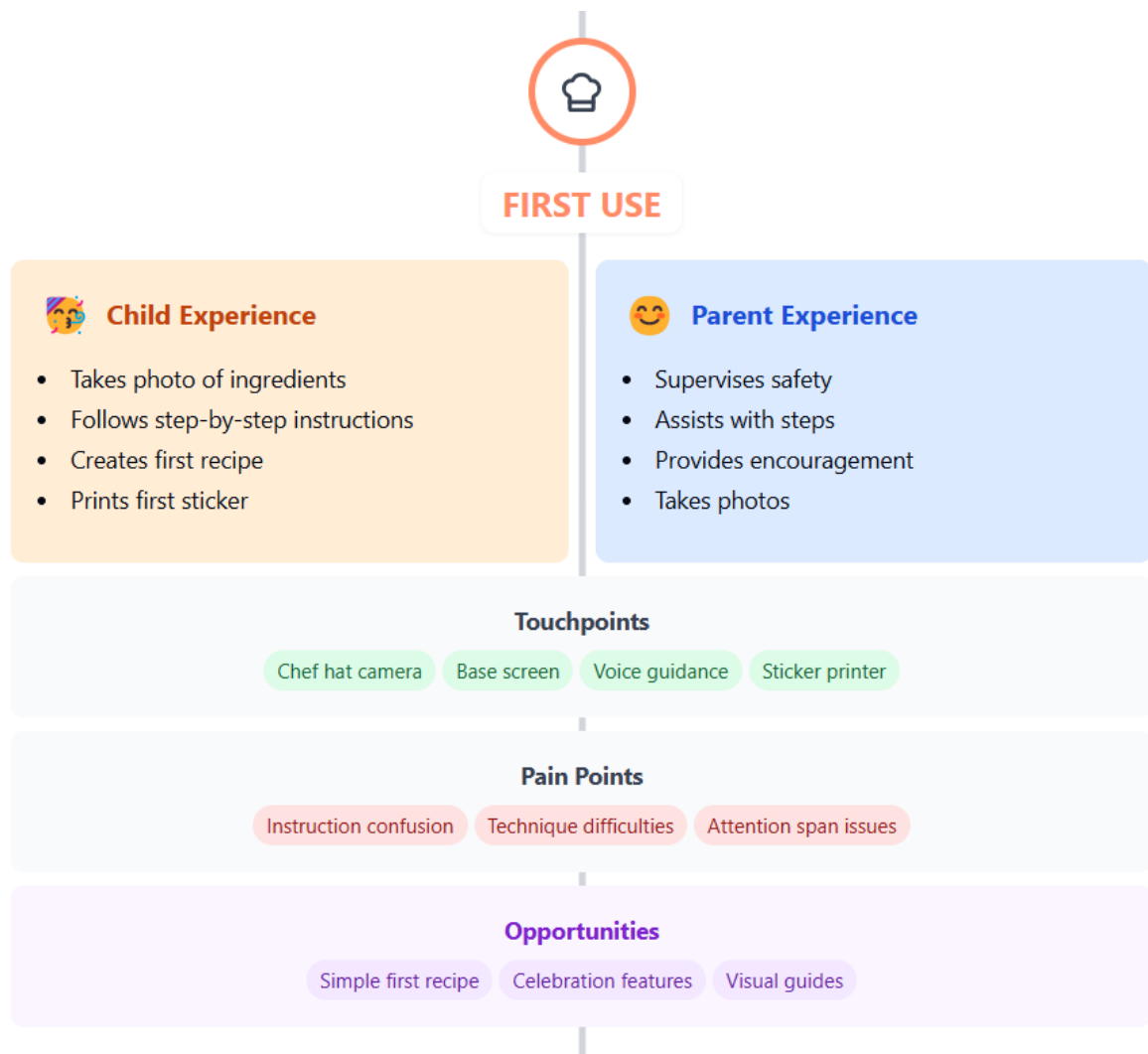
### Opportunities

Comparison tools

Supervision ratings

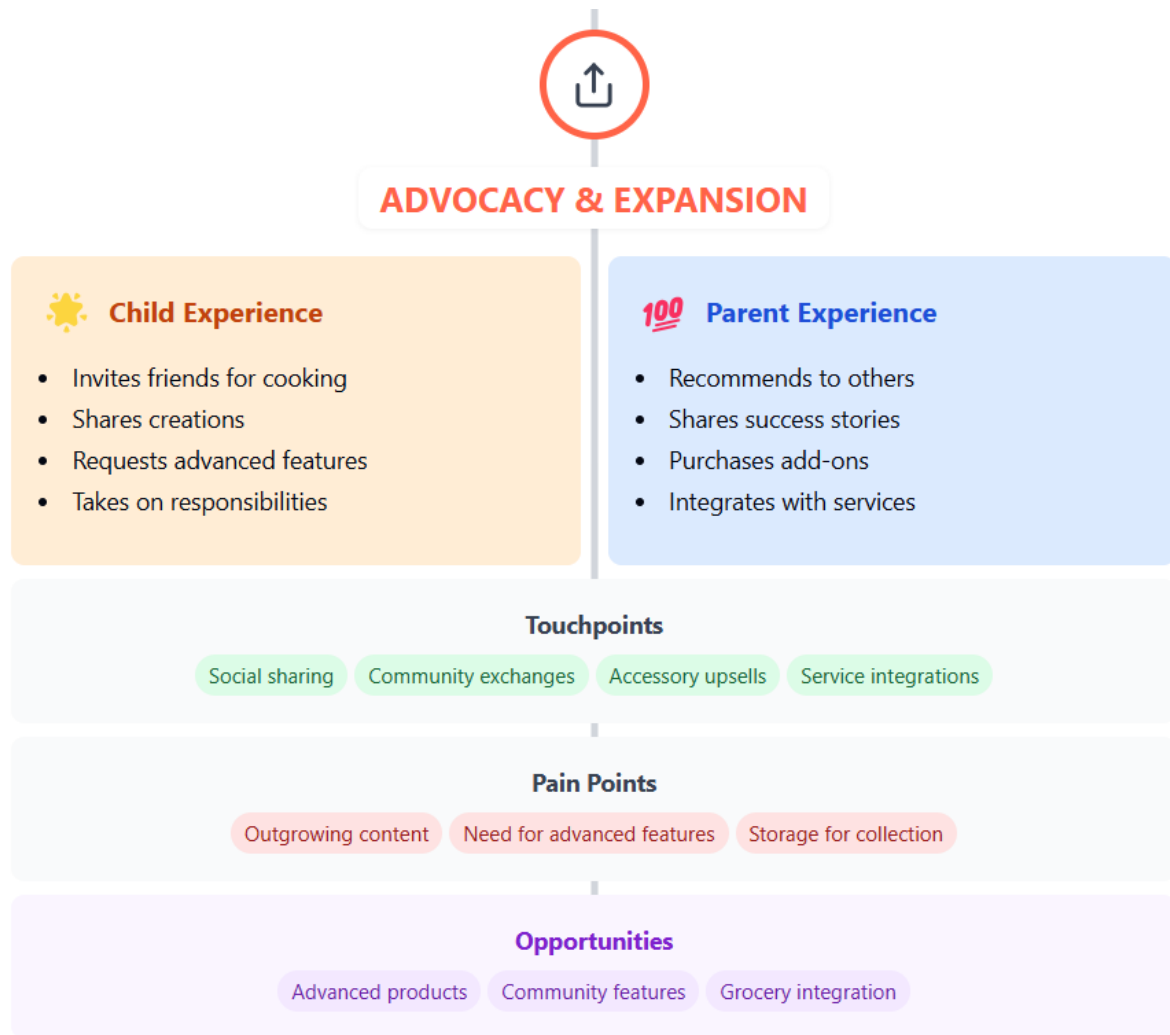
Payment plans







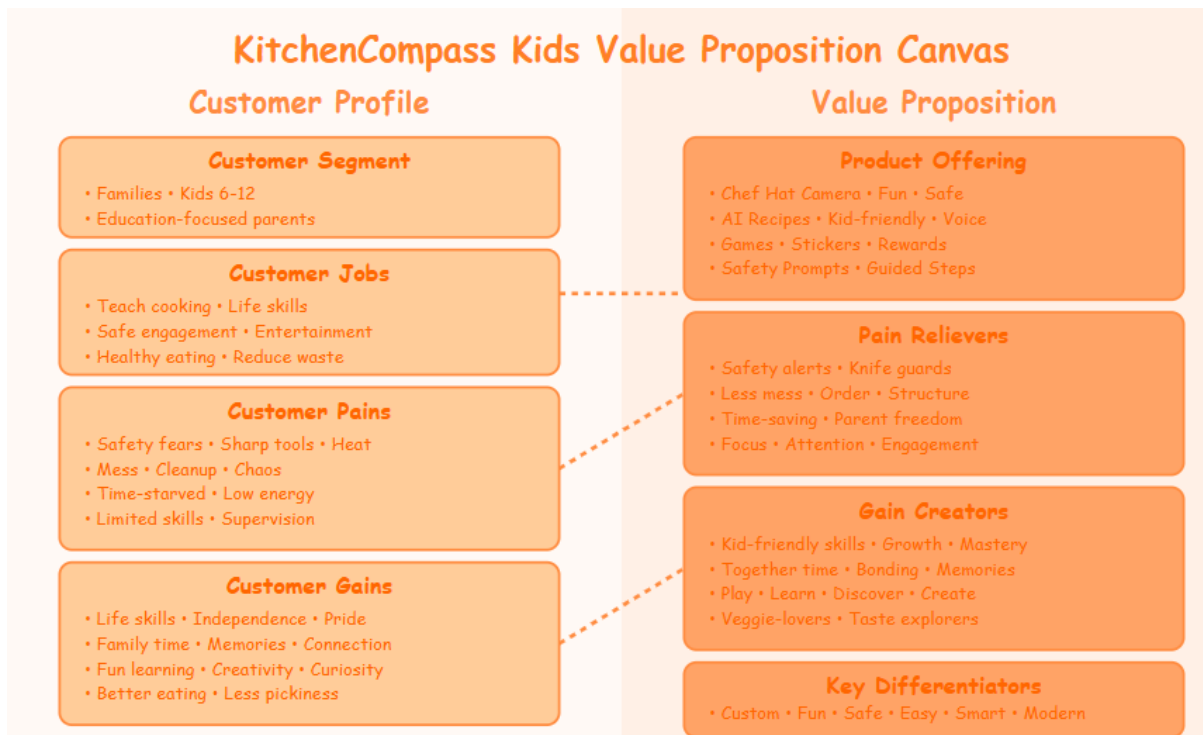




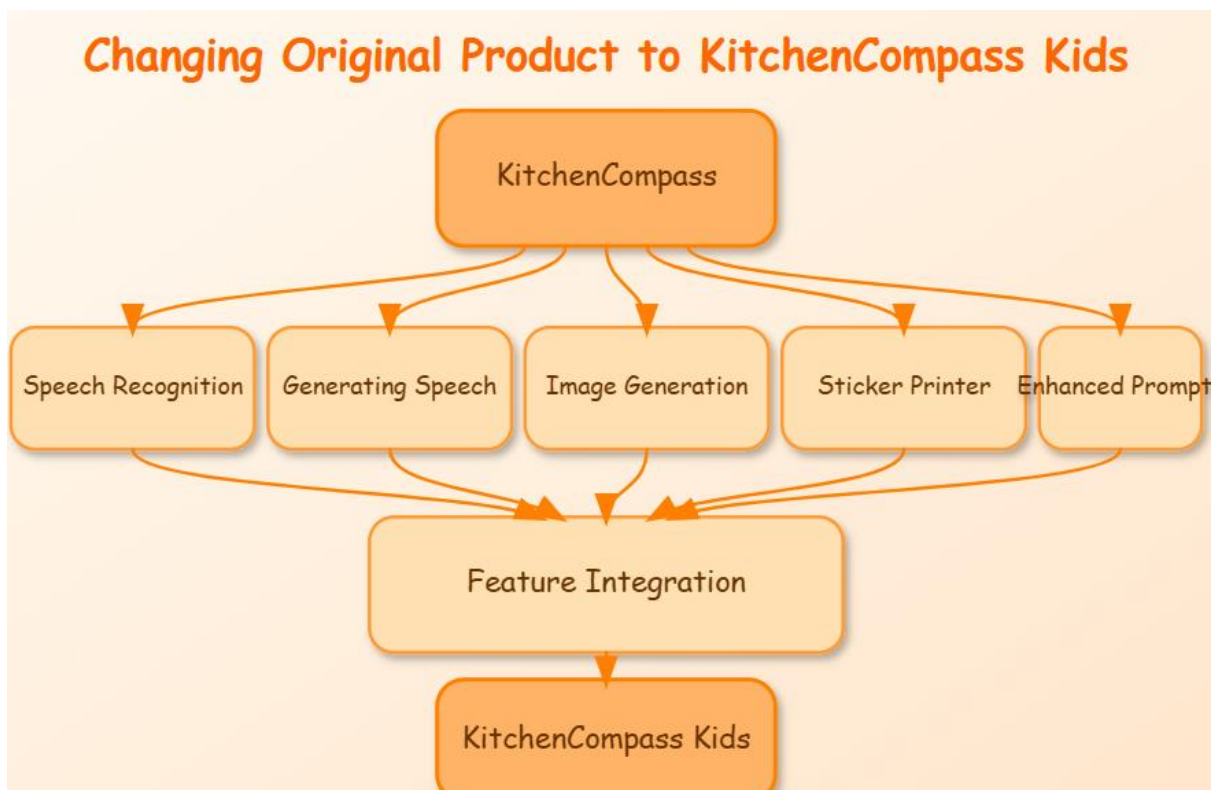
## Appendix D

P	E	S	T	E	L
<ul style="list-style-type: none"> <li>- Child safety laws</li> <li>- Education policy</li> <li>- Food regulations</li> <li>- Child obesity</li> <li>- Family policy</li> </ul>	<ul style="list-style-type: none"> <li>- Family spending</li> <li>- Education market</li> <li>- Smart toy market</li> <li>- Food costs</li> <li>- Subscription trends</li> </ul>	<ul style="list-style-type: none"> <li>- Family cooking time</li> <li>- Children's skills</li> <li>- Healthy eating</li> <li>- Picky eaters</li> <li>- Tech in education</li> </ul>	<ul style="list-style-type: none"> <li>- AI for kids</li> <li>- Voice assistants</li> <li>- Computer vision</li> <li>- Smart kitchen</li> <li>- Speech recognition</li> </ul>	<ul style="list-style-type: none"> <li>- Food waste</li> <li>- Eco-friendly toys</li> <li>- Sustainable food</li> <li>- Green packaging</li> <li>- Energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- Child data privacy</li> <li>- Product safety</li> <li>- AI regulations</li> <li>- IP protection</li> <li>- Food standards</li> </ul>

## Appendix E



## Appendix F



## Appendix G



(Bureau of Labor Statistics, n.d.-a; Bureau of Labor Statistics, n.d.-b; Bureau of Labor Statistics, n.d.-c; Bureau of Labor Statistics, n.d.-d; User Interviews, 2023; HubSpot, n.d.; Sprout Social, n.d.)

## KitchenCompass Kids SWOT Analysis

### Strengths

- New usage of AI-technology
- First product in niche (kids cooking tech)
- Have an existing foundation
- Fun and educational
- Safety a top priority
- Less supervision from parents
- Improve development children

### Weaknesses

- New market - new expertises needed
- Extra development costs
- New distribution channels
- Concerns about privacy children
- Concerns about safety children
- Concerns about safety AI and children
- Original hardware and software needs to change
- Trust barrier parents

### Opportunities

- New interactive and educational market
- Using new exciting technology
- AI technology underused in education and entertainment for kids
- Potential for subscription
- Educational partnerships
- Big social impact
- Teaches food waste reduction

### Threats

- Potential for new competitors
- Distrust in AI technology by consumers
- Safety concerns parents
- Regulations for children products
- Competition from cookbooks and classes



## Appendix I



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OpenAI. (2025, April 7). \* Cartoon style. Orange color scheme. Box with speaker and screen. Text bubble from box says This is how to safely hold a knife. Comic book sans. Then in front of it there is a child with chef's hat that holds knife\* [AI-generated image]. ChatGPT.

OpenAI. (2025, April 7). \* Cartoon style. Orange color scheme. Box with speaker and screen. On screen there is broccoli. Sound lines from speaker to indicate that sound is playing. Next to box chef's hat \* [AI-generated image]. ChatGPT.

OpenAI. (2025, April 7). \* Cute cartoon stickers designs. White space in middle to write text. For kids \* [AI-generated image]. ChatGPT.

OpenAI. (2025, April 7). \* front page layout, kids cooking theme, orange color scheme, cartoon child chef logo, compass rose, fun rounded font, "Kitchencompass for Kids", Joey Hobrecker, Technical University Eindhoven, April 7 2025, minimal, playful, clean design\* [AI-generated image]. ChatGPT.

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## Acknowledgement of AI use

I only used AI-image generation and never used AI text generation.

AI image generation was used to give my paper a professional look with custom front paper designs and custom art of Kitchencompass.

I also used it to explain my concept and ideas visually.

I generated all the content and ideas for this paper myself.

Normally I would provide a link to the chat I created the image with but OpenAI does not allow you to share a chat where you created a photo.