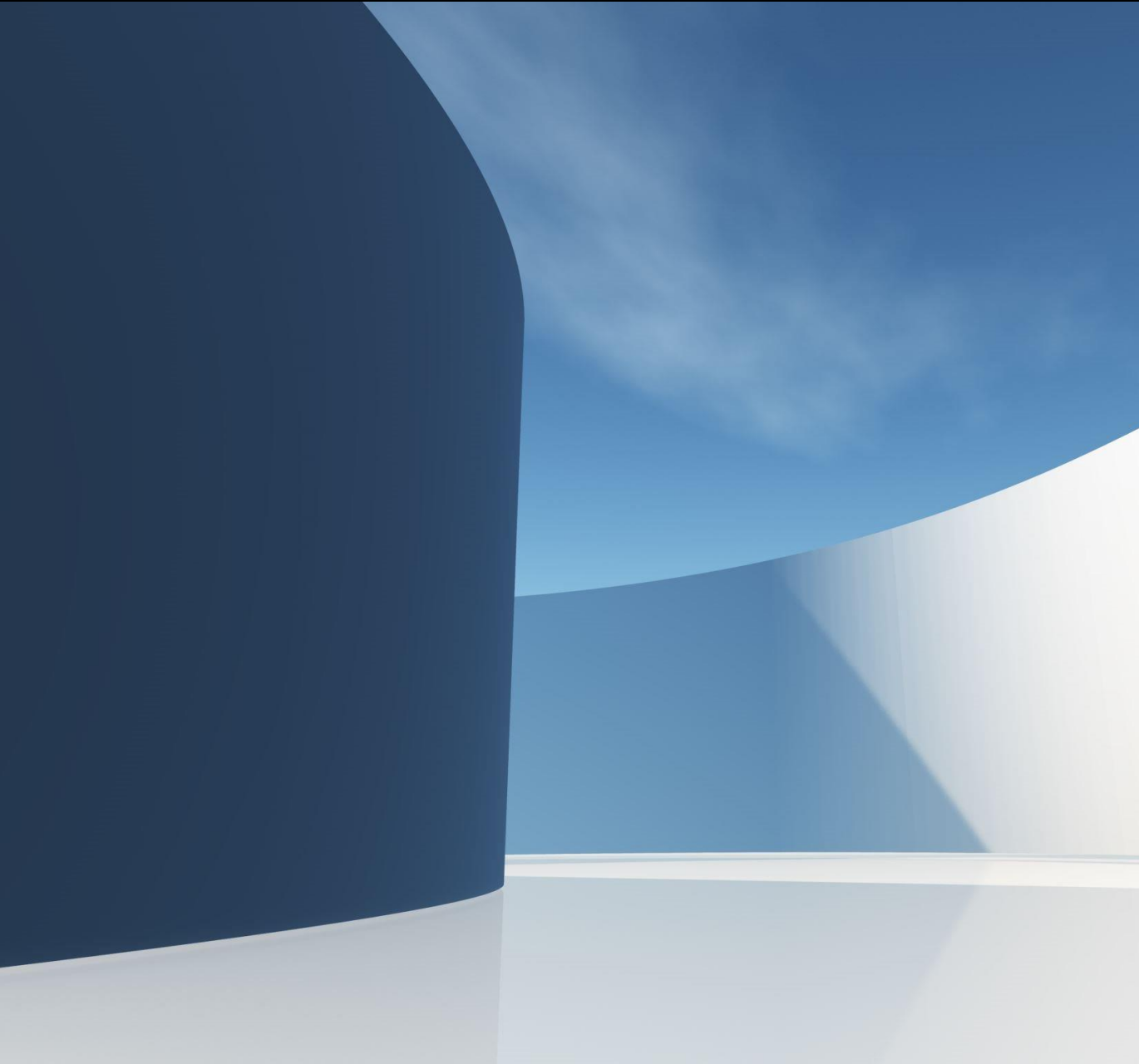


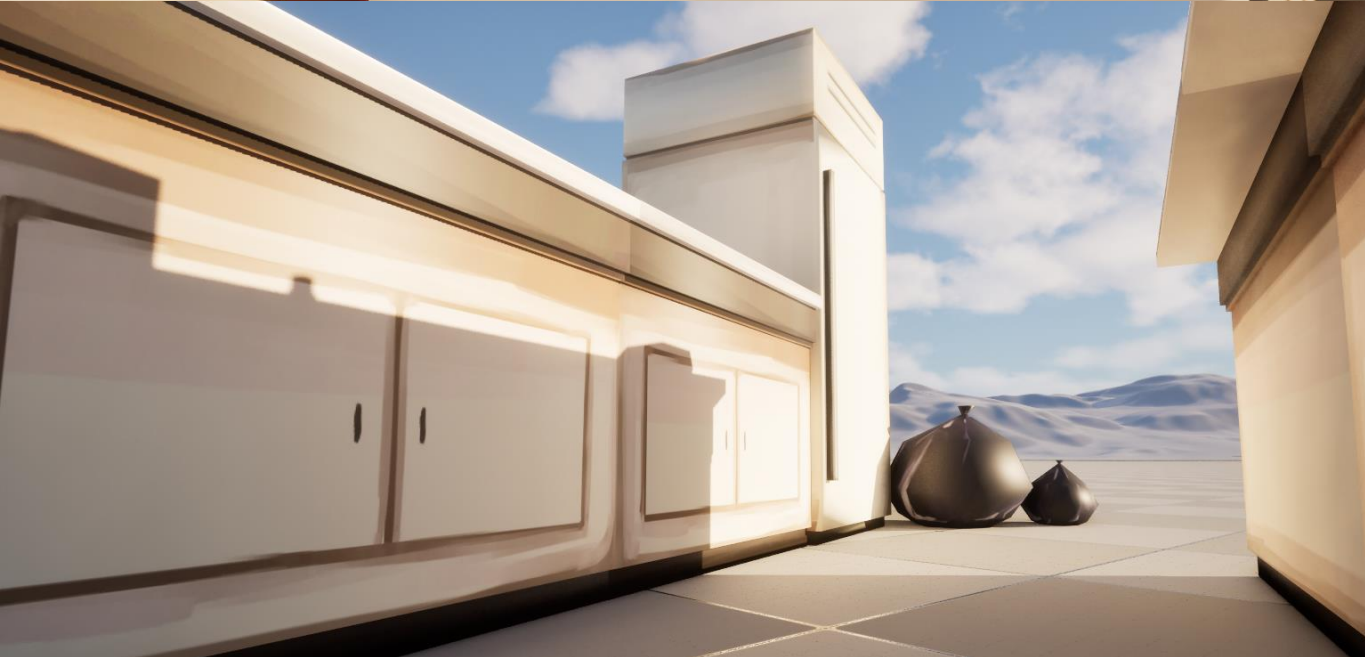


BA Computer Design

Final Viva

Paige Hodgson

Student ID: 2305278

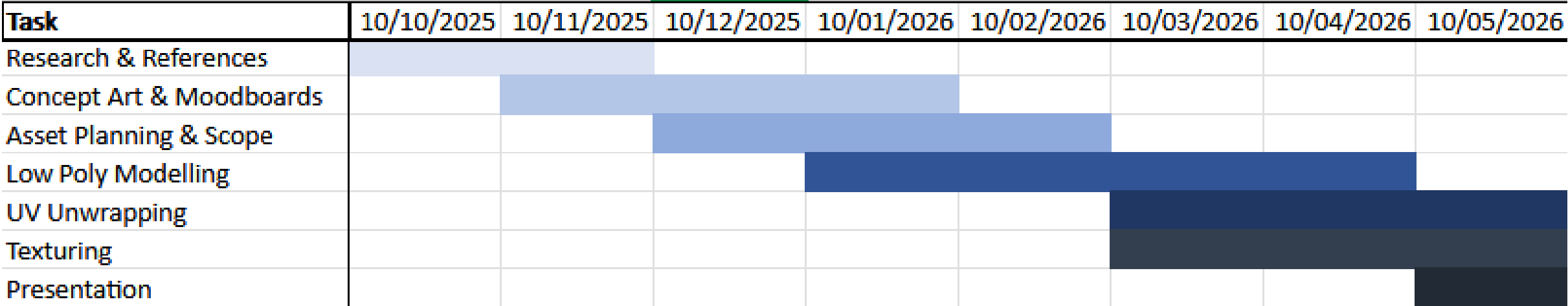


3D Bakery Asset Pack

Contents

- | | |
|-----------------------------|----------------------------|
| 3. Gantt chart | 19. Workflow |
| 4. Project dissertation | 37. Successes & challenges |
| 5. Asset list | 38. Conclusion |
| 6. Research journaling | 39. References |
| 9. Concept art | |
| 10. Primary research survey | |
| 11. Secondary research | |
| 17. Software used | |
| 18. MoSCoW | |

Gantt Chart



My Gantt chart showcases a structured development schedule for the creation of my low-poly bakery asset pack, spanning from October 2025 to May 2026. The project began with research and reference gathering during October and early November for the proposal, allowing time to investigate existing visual styles within online media, asset packs, and relevant academic sources linked to stylisation and immersion for my dissertation. The concept art development takes place between October and January. This was to focus on establishing the overall visual direction, colour palette, and aesthetic consistency for the pack. Asset planning and scope definition then overlap with this process from December to February. The modelling phase starts in January, continuing through to April. This was the longest stage of the project and involved creating each model from the asset list within Autodesk Maya. [1] During March, the workflow progresses into UV unwrapping and texturing, where my assets were prepared for materials and visual polish within Ibis paint [2]. These stages overlap intentionally to allow assets to be textured accurately as I model. Finally, the presentation phase took place during April and May, focusing on importing the completed assets into Unreal Engine 5 [3] and compiling my work into one place.

In my dissertation, I talked about various research points such as Cognitive load theory [4], Perceptual load theory[5] and the Uncanny valley [6] within various games, media examples and real-world cases. All of the research was necessary for me to apply what knowledge I had gained and funnel it into my 3D asset pack.

My viva was prepared to work hand in hand with supporting the data I would have to find for my dissertation. This is where my primary research overlaps between the two in the form of a survey I conducted to 20 people varying, from University peers to members across online gaming communities from google forms. [7]



Project dissertation

How do stylisation and realism in 3D design influence player immersion and emotional engagement?

Updated Asset List

Reduced from over 35 planned assets, down to 24 when overlooking my project scope.

Bakery 3D Asset List	
Asset Type	Description
Furniture	Display counter
Appliance	Double stack oven
Appliance	Fridge
Furniture	Island counter
Furniture	Wall counter corner
Furniture	Wall counter corner
Furniture	Shelving rack
Furniture	Sheet pan rack
Decoration	Cloth
Decoration	Mixing bowl
Food	Loaf variants
Food	Donut variants
Food	Cookie variants
Food	Cake variants
Decoration	Plates
Decoration	Cutting board
Decoration	Rolling pin
Decoration	Sheet pan
Decoration	Knife
Decoration	Fork
Decoration	Spoon
Decoration	Menu
Decoration	High stool
Furniture	Sofa
Decoration	Plant pot
Decoration	Jar
Drink	Cup
Drink	Bottle
Furniture	Sink
Decoration	Bin bags
Furniture	Register
Furniture	Tables
Furniture	Lamps
Furniture	Rug
Decoration	Candles



Final Bakery 3D Asset List	
Asset Type	Description
Furniture	Island counter
Furniture	Wall counter
Furniture	Wall counter corner
Appliance	Fridge
Decoration	Chopping board
Decoration	Book
Decoration	Large bin bag
Decoration	Small bin bag
Decoration	Large plate
Decoration	Small plate
Decoration	Mixing bowl
Decoration	Rolling pin
Food	Whole cake
Food	Cut cake
Food	Cake slice
Food	Whole bread loaf
Food	Cut bread loaf
Food	Bread slice
Food	Whole donut
Food	Donut piece
Food	Whole cookie
Food	Cookie piece
Drink	Bottled beverage
Drink	Paper cup beverage

Research Journaling

1	Bibliography Title	Summary	Source Type	Link/ Info
2	Signifying Play: The Sims and the Sociology of Interior Design	It argues The Sims changes the domestic view by focusing on building and furnishing homes rather than action oriented gameplay, players engage in what the author calls a "sociology of interior design". Manipulating objects and spaces to project status and identity. Paulk shows that in The Sims furnishing is not just decorative but carries sign value.	Article	https://www.gamestudies.org/0601/articles/paulk
3	Stylized Art Style vs. Realism: The Art of Pixels in Games	How choosing between a stylized art style and photorealism is a large decision in game development, since it's influencing everything from aesthetics and player experience to production cost and technology. It can mean stylized art as creative reinterpretation of form, color and proportion (rather than trying to mimic reality), and realism as detailed, rendering that aims to immerse players in believable worlds.	Blog	https://vsquad.art/blog/stylized-art-style-vs-realism-the-art-of-pixels-in-games
4	Level Design vs. Environment Design	Focuses between environmental design, which looks at building a believable, immersive game world through it's architecture, mood, lore and level design, which focuses on creating gameplay challenges for the player. This means enemy placement, traps, progression. The author argues that mixing them leads to more engaging game spaces.	Blog	https://medium.com/super-jump/level-design-vs-environmental-design-b8d19992924e
5	Exploring 3D Art Styles for Games: A Guide to the Most Popular Types	It mentions the importance of picking the right 3D art style for games and then highlights five major styles: realism, cartoon/anime, fantasy realism, and collage style. Each style is explained with its strengths, ideal uses, and example games.	Blog/Article	https://rocketbrush.com/blog/exploring-3d-art-styles-for-games-a-guide-to-the-most-popular-types
6	The Effects of Graphical Fidelity on Player Experience	The authors conducted a study with 48 participants, playing two casual games in both stylised and abstract graphic conditions. They found that higher graphical fidelity generally led to more positive player impressions, greater immersion and higher ratings of competence, autonomy and relatedness. The implication was that good graphics can enhance player experience, but in less demanding games simpler graphics can still deliver a satisfying experience.	Research Paper	https://www.researchgate.net/publication/262288972_The_Effects_of_Graphical_Fidelity_on_Player

Utilising the same research list from the beginning of my proposal by adding to it all throughout the project.

[Research list can be accessed here:](#)

Research Journaling

7	Effects of Art Styles on Video Game Narratives	It establishes how a game's visual art style influences players' perception, interpretation, and emotional experience of its narrative, arguing that art style is not just decorative but a core storytelling feature. It shows that different art styles can significantly alter how the same narrative content is perceived in terms of mood, tone, credibility, and emotional impact, with players forming narrative expectations based on visuals alone.	Thesis Paper	https://www.utupub.fi/bitstream/handle/10024/145921/Effects%20of%20Art%20Styles%20on%20Video%
8	Film in the Post-Media Age	How moving images (including digital media examples like video games, 3D cinema, and online video) link into the post-media setting, mentioning issues such as, intermediality (how different media forms blend), and how traditional cinematic experience has changed as film merges with other digital forms.	Book	https://books.google.co.uk/books?hl=en&lr=&id=AA0uBwAAQBAJ&oi=fnd&pg=PA381&dq=realism+in+3d+g
9	The Role of Illustration in Digital Game Designs	How illustration functions as a core element in digital game design. It examines artistic, narrative, and design aspects of illustrations in popular 2D and 3D games such as Minecraft, Fortnite, Animal Crossing: New Horizons, Super Mario Odyssey, Hollow Knight, Cuphead, Hades, and Undertale. The study shows that illustrations are far more than just decorative. They are important for storytelling, user experience, and emotional engagement.	Research Article	https://dergipark.org.tr/en/download/article-file/4650206
10	How I Created this Stylized Game Environment in UNREAL ENGINE 5	The video covers a range of processes and techniques used in the planning, modeling and presenting stages of creating an environment from blender and unreal engine 5. Each stage is briefly documented to gather a basic understanding of what is to be expected as a designer when creating a stylised game environment.	Youtube Video	https://www.youtube.com/watch?v=1C81K60KTtc
11	Every Stylized 3D Pipeline Explained	It talks about each stylised view on creating 3D art in games such as low poly, PBR pipeline and PBR + Handpainted textures. Each style has its pros and cons within the past and modern gaming industry, especially market. Games used in example for these styles were Fortnite, League of legends, Overwatch and World of Warcraft. Different software applications were used such as z-brush, substance painter, and photoshop.	Youtube Video	https://www.youtube.com/watch?v=Wz46-B5WnwA
12	All Methods & Types of 3D Modeling	Clarification on the various methods of general 3D modelling summed into a video with basic information provided for each section. Methods included: Polygon Modelling, Box modelling, Nurbs modelling, Boolean modelling, 3D sculpting, Parametric modelling, Procedural modelling, and Kit bashing.	Youtube Video	https://www.youtube.com/watch?v=BYpp_oY929E
13	The Structure of Videogame Preference	An article mentioning patterns in video game preferences using survey data from Norwegian college students to see how people choose their favorite games. Taking in factors such as gender and play frequency (inclusive, family-friendly games favored more by less frequent female players. Meanwhile exclusive, high tech games by frequent male players). Distinct groups of gamers such as E-sporters and Roleplayers, each with coherent taste profiles that also link with broader cultural and media preferences.	Article	https://gamestudies.org/1702/articles/klevjer_hovden

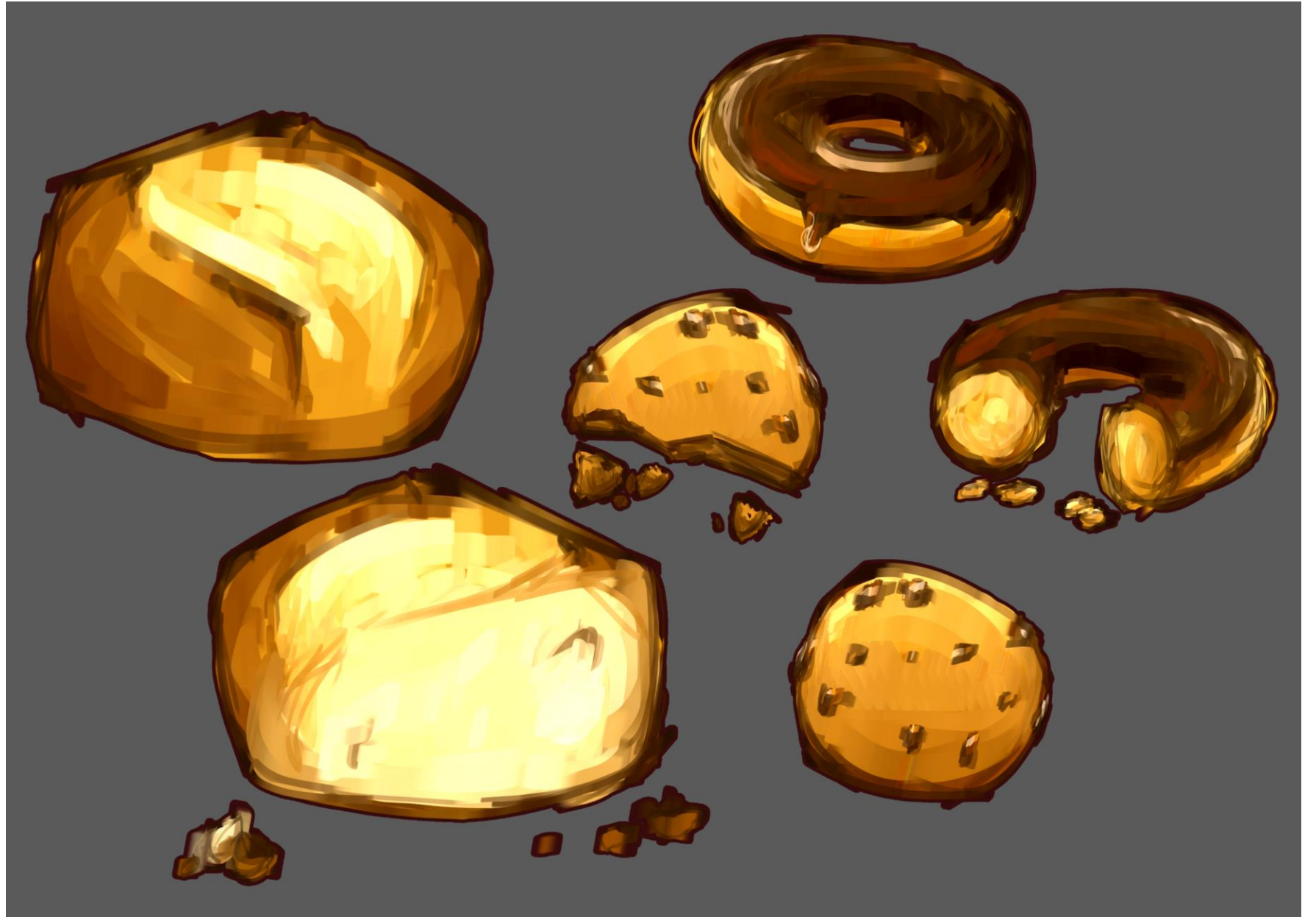
Research Journaling

12	All Methods & Types of 3D Modeling	Clarification on the various methods of general 3D modelling summed into a video with basic information provided for each section. Methods included: Polygon Modelling, Box modelling, Nurbs modelling, Boolean modelling, 3D sculpting, Parametric modelling, Procedural modelling, and Kit bashing.	Youtube Video	https://www.youtube.com/watch?v=BYpp_oY929E
13	The Structure of Videogame Preference	An article mentioning patterns in video game preferences using survey data from Norwegian college students to see how people choose their favorite games. Taking in factors such as gender and play frequency (inclusive, family-friendly games favored more by less frequent female players. Meanwhile exclusive, high tech games by frequent male players). Distinct groups of gamers such as E-sporters and Roleplayers, each with coherent taste profiles that also link with broader cultural and media preferences.	Article	https://gamestudies.org/1702/articles/klevjer_hovden
14	The Art of First Impression: Video Game Art Styles That Win Players Over	The article mentions how a game's art style is one of the most crucial factors in grabbing player attention and influencing buying or download decisions. It breaks down popular styles including realism, stylized, low-poly, cel-shaded, voxel, pixel art, anime/manga, hand-drawn, isometric, and vector. It talks about their aesthetic appeal and budget implications.	Blog/Article	https://www.gianty.com/video-game-art-styles-that-win-players-over/
15	Create Camera Turntable In Unreal Engine5	Demonstrates how to create a simple camera turntable setup in Unreal Engine 5. It showcases a rotating camera system for object presentation, portfolio renders, character showcases, and product scenes.	Youtube Short	https://www.youtube.com/shorts/LPLkZYCLBSY
16	The ONLY Unreal Engine 5 Rendering Guide You Need	Shows a tutorial focusing on scene setup, cinematic presentation, and rendering techniques. Helping with practical steps for improving visual quality and camera work inside the Unreal Engine5, it's aimed at beginners and intermediate users learning environment creation or cinematic tools.	Youtube Video	https://youtu.be/YT4JDg1TLJ4?si=lBakavtPLvmHFOBy
17	Unreal Engine 4 & 5 - How to animate a product turntable using Sequencer	focusing on environment creation, lighting, or cinematic scene presentation. It showcases how different tools and settings inside the engine can be used to improve the realism and visual quality of a 3D scene for game development or digital art projects.	Youtube Video	https://youtu.be/nZoDFvCM5KY?si=Ewc1R0ZXFF748HWk
18	Unreal Engine 5 Tutorial: How to Include a Third Person Character in Blank Project	Showcases techniques and workflows related to creating or improving 3D scenes in Unreal Engine 5. It likely demonstrates cinematic rendering, environment design, lighting, or scene composition methods used to achieve more realistic and visually appealing results for game development or digital art projects.	Youtube Video	https://youtu.be/bkmNnC8qjk0?si=vjhHkHE82jaXfWT5
19	Model A Low Poly Barrel In Maya Part 2 UV Unwrapping	It focuses on Unreal Engine 5 techniques for improving the presentation and realism . It showcases lighting, camera composition, rendering, and environment detailing.	Youtube Video	https://youtu.be/XMGhwIKKslI?si=Gr3kXniluMp82sXY

Food Concepts

Early food concept art inspired by various online and in person examples.

Showcasing A loaf of bread, A donut and a cookie with two variants displaying various states.



3D Design Feedback

The purpose of this survey is to gather feedback on my initial concept pieces and designs for my 3D project- an interior bakery asset pack. This process should take no longer than 10 minutes.

Age identification *

Which age bracket applies to you?

- ☐ 18 - 24
- ☐ 25 - 29
- ☐ 30 - 39
- ☐ 40+

Gender identity *

Which option applies to you?

- ☐ Male
- ☐ Female
- ☐ Nonbinary
- ☐ Prefer not to say

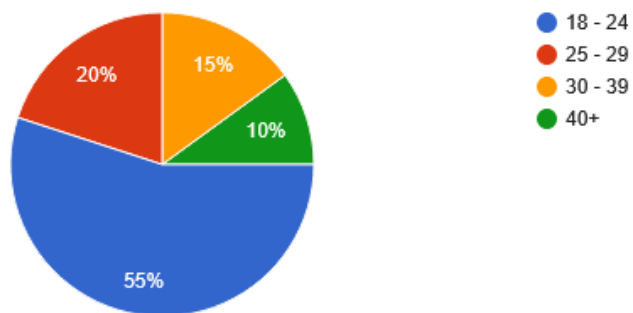
Creating a Survey

- Looking for quantitative and qualitative data to enhance the direction of my project
- Aims to work from feedback given by participants
- Interested to learn the demographic of my work
- Hoping to see support for my research on the positive effects of stylisation in gaming

Survey Results

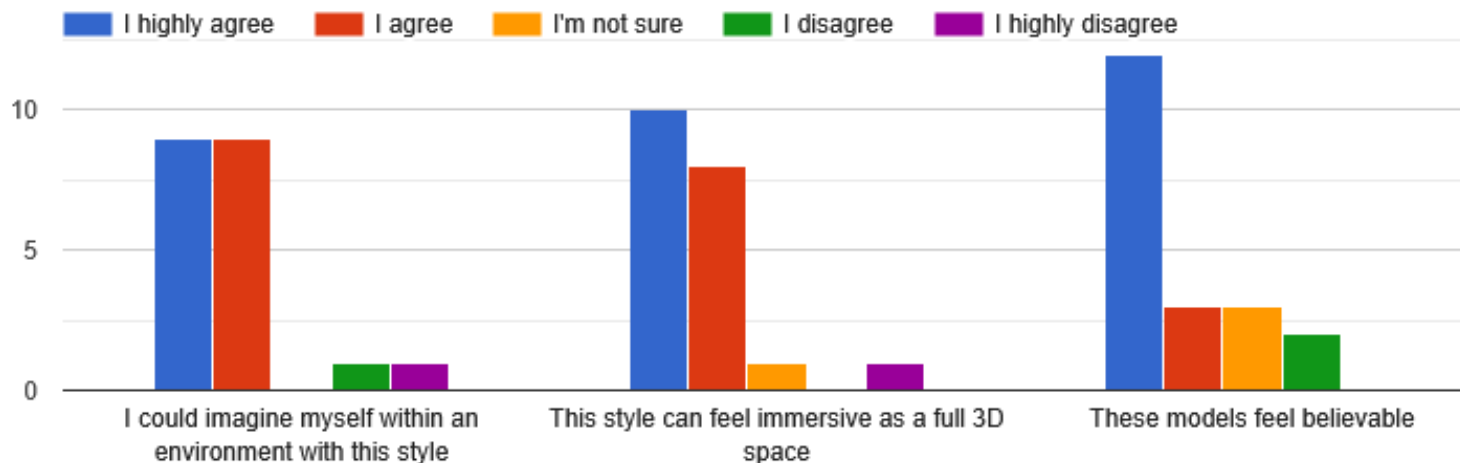
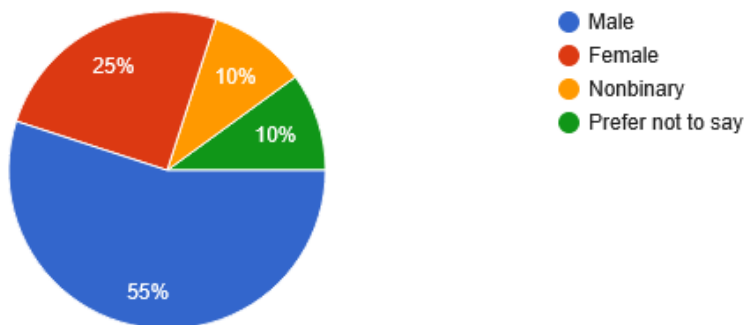
Age identification

20 responses



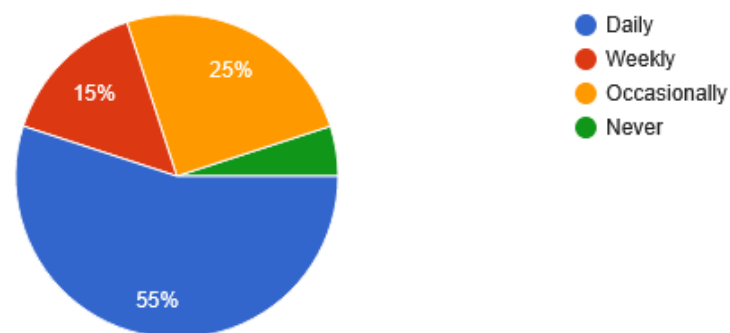
Gender identity

20 responses



How often do you play videogames?

20 responses

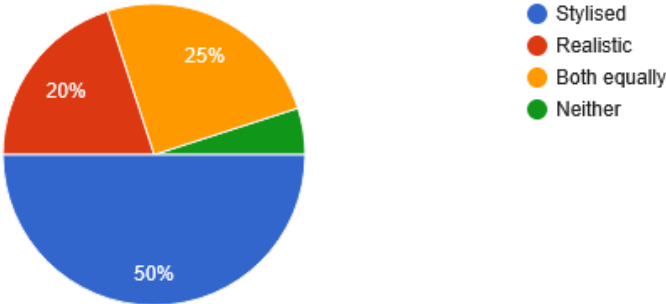


Reinforcing the understanding of the demographic for my work by gathering basic information about the users before showcasing my early concept art and models.

Survey Results

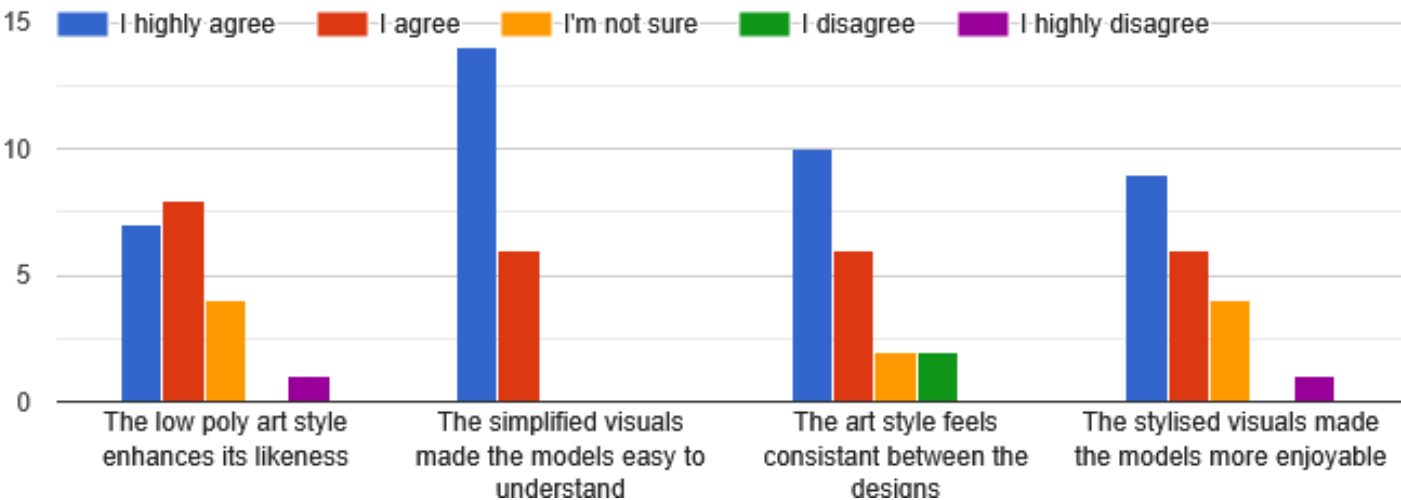
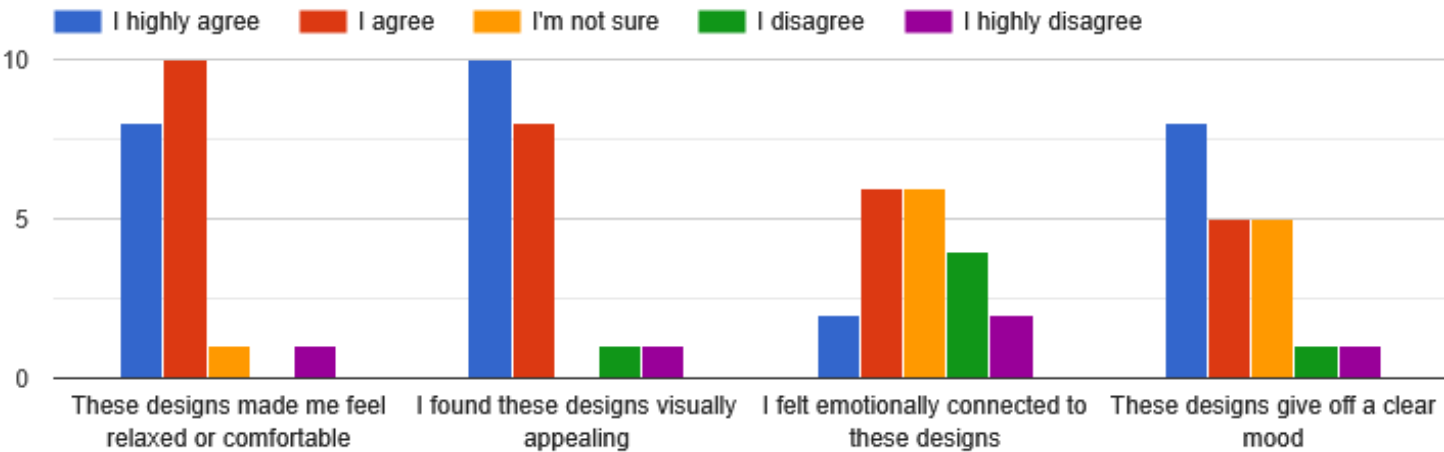
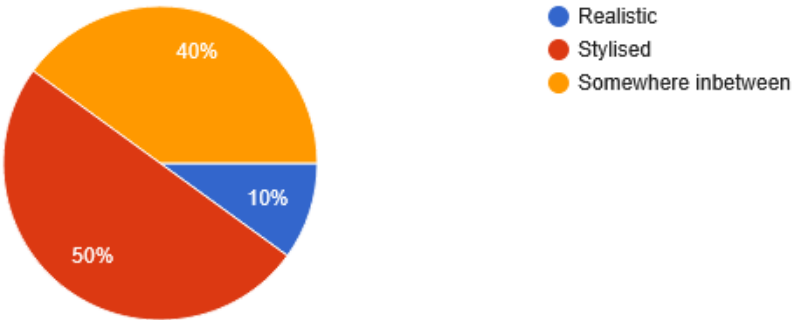
Which idea for a 3D bakery environment feels more immersive to you?

20 responses



Select the overall visual style.

20 responses



Results varied between realism and stylisation, however the latter proved to support a much higher positive emotional effect amongst users, when compared to realism.

Survey Results

When participants were asked what they liked about the models, here were some of the responses:

“They show a clear understanding of basic shape and low-poly modelling.”

“Very simplistic and easy on the eyes, the colors don't clash and are appealing to view”

“Low poly just feels super nostalgic and nice to see especially with how realistic games are getting recently”

When participants were asked if they would change anything about the art style, here were some of the responses:

“Increase the evidence of texture within the foods like the bread and doughnut.”

“Not majorly the style, only the Model for the bread. Its a bit bare in comparison to the others. Maybe some texturing”

“I would add the crumbs and different eaten concepts as models too!”

“Add different types of model stages like the art concept.”

Overall the survey results gave overwhelmingly positive and useful feedback for the development of my asset pack.

Research

As a part of my dissertation, one of my topics was about Cognitive Load Theory [4] It is a theory that proposes working human memory has a limited amount, meaning people can only process a certain amount of information at once. So when I would compare this within the context of 3D games, I could apply it towards my assets since they would provide a low cognitive load for users with its simplistic textures and shapes.

Since dense visuals, and excessive details increase cognitive load, it makes it harder for players to process useful information. I wanted to avoid this as much as possible for the development of my asset pack. Since stylisation can enhance immersion by reducing cognitive load, the simplified, low-poly designs also reduces visual density, lowering cognitive load and allowing users to focus on the potential interaction and creativity of my assets. Rather than passively consuming them.

Research [9]

[8]



[10]



[12]

[11]



[15]



[14]

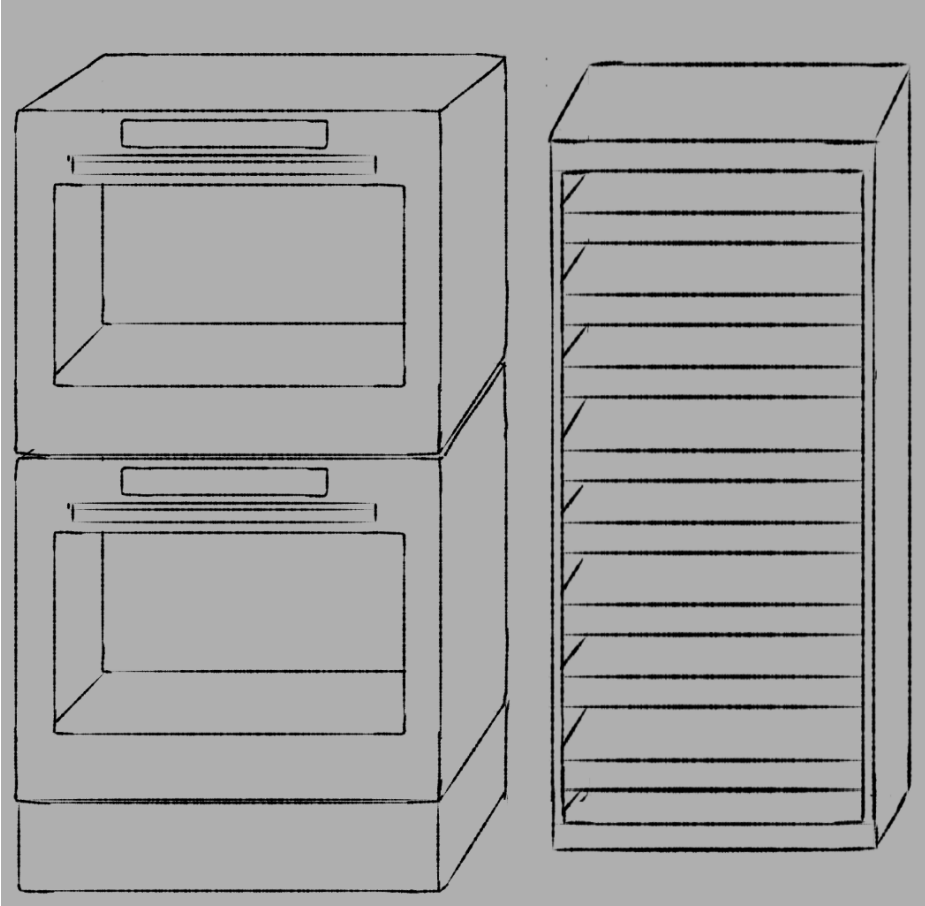
[13]



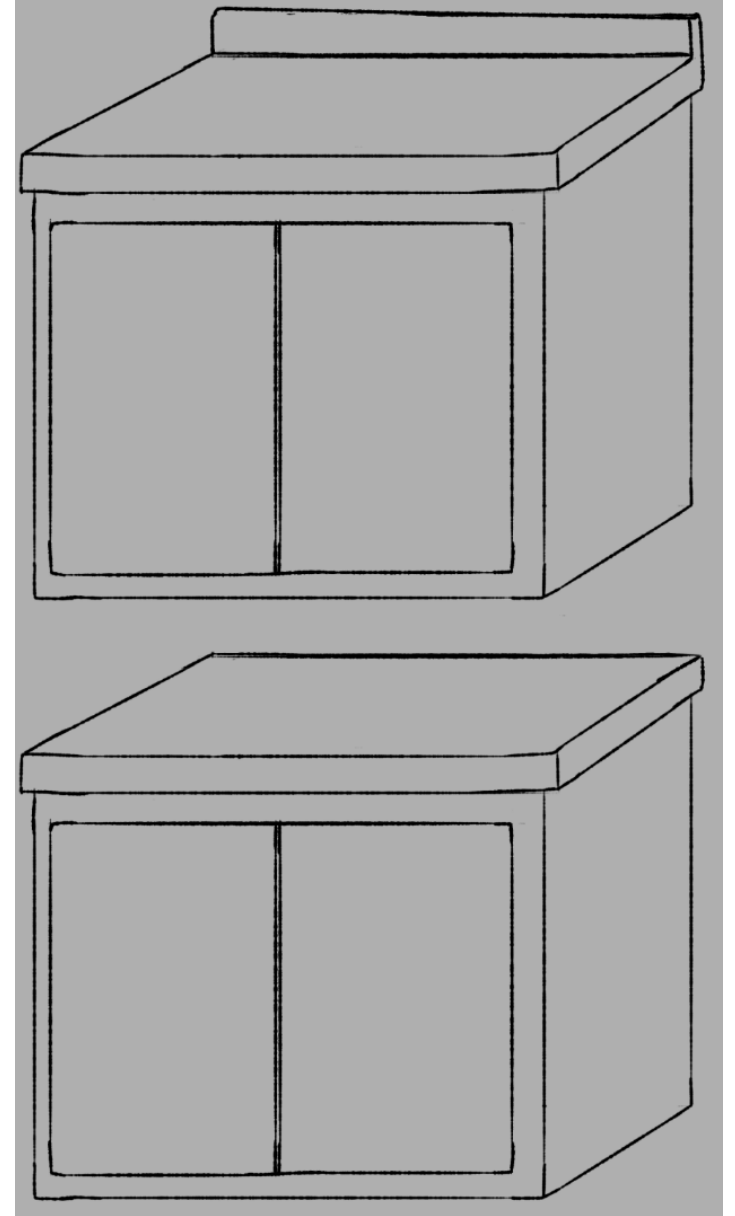
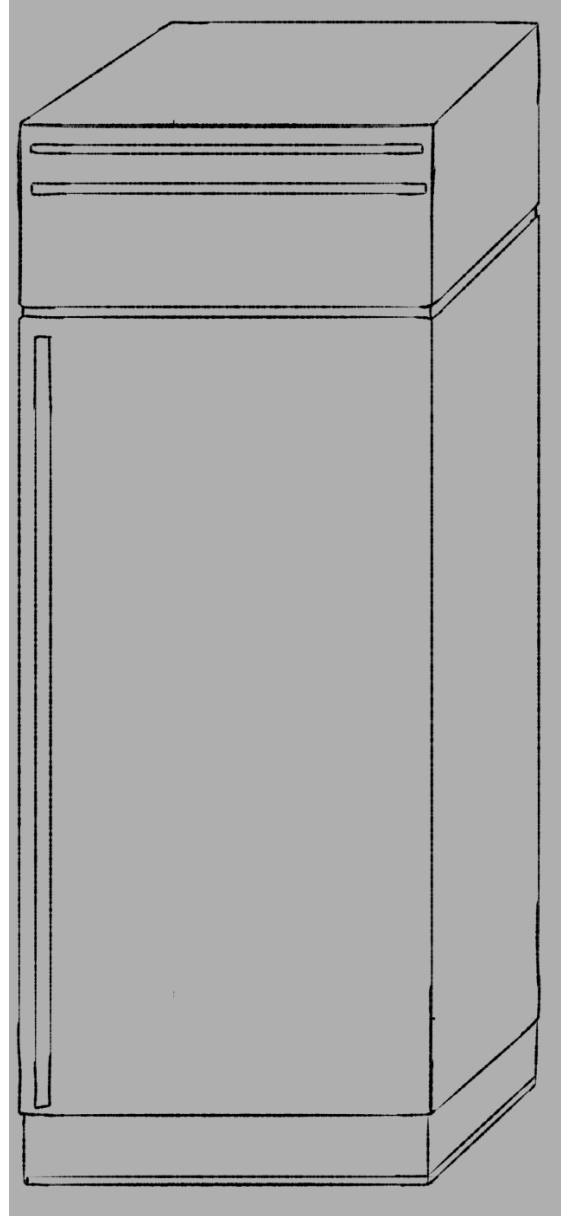
[14]

Previously looked at game examples for stylisation and realism. As well as both game and real-world bakery aesthetic examples

Furniture Concepts



Early furniture and appliance concepts of a baking sheet shelf, double stack ovens, counters and a fridge.



Software used

- **Microsoft Excel [16]**
 - Reference list
 - Asset list
- **Microsoft Word [17]**
 - Project proposal
 - Dissertation
- **Microsoft PowerPoint [18]**
 - Interim Viva
 - Final Viva
- **Google Forms [7]**
 - Survey
- **Autodesk Maya [1]**
 - 3D Modelling
- **Ibis paint [2]**
 - Texture Art
- **Unreal Engine 5 [19]**
 - Final display



Must have:

Unwrapped UVs

Applied textures

Correct scaling/ proportions

Should have:

Consistent colour palette

Hand drawn designs

Reliable naming conventions

Could have:

Decorated Scenes

Particle effects

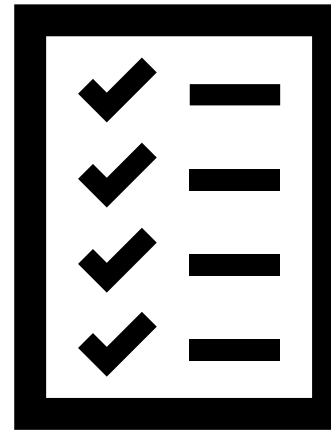
Won't have:

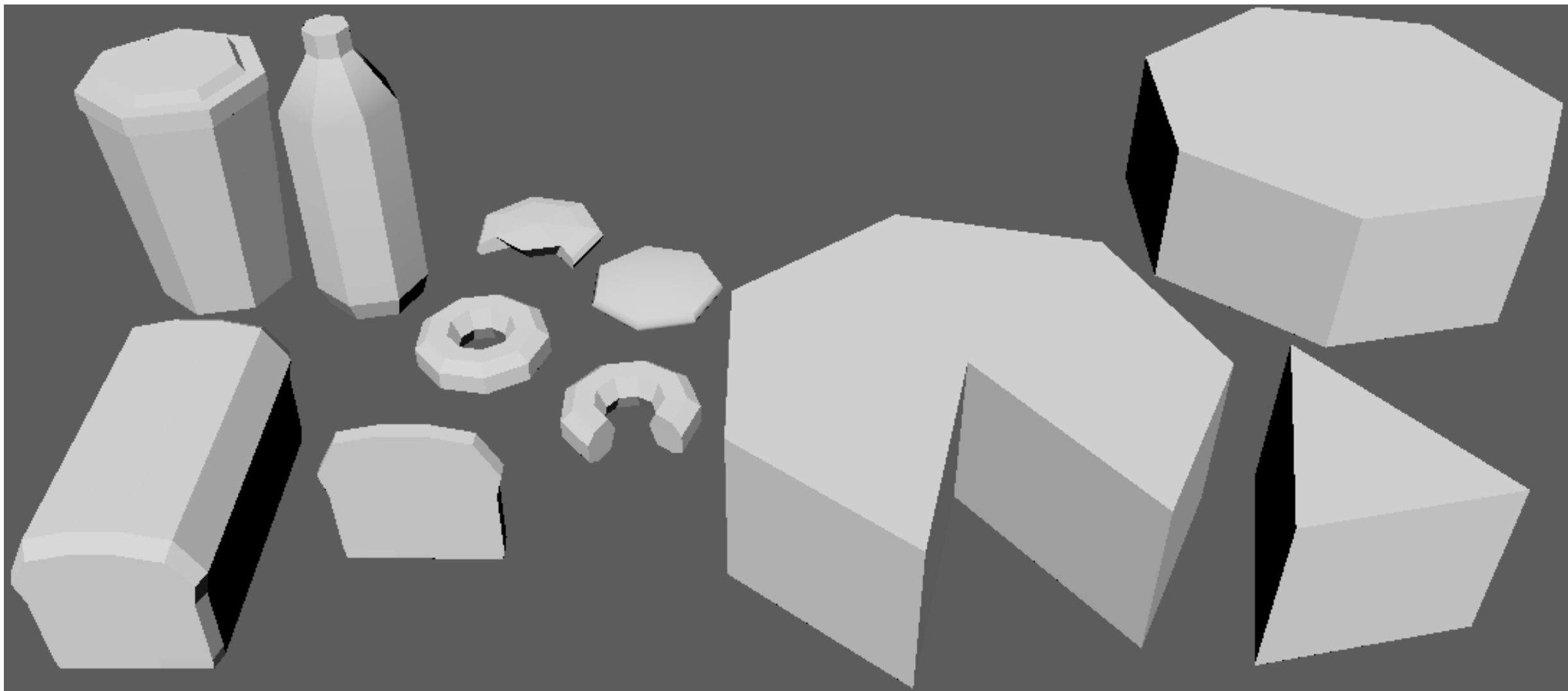
Animations

Hyper-Realistic Textures

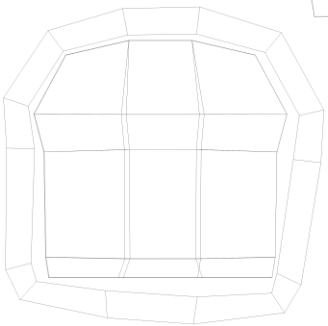
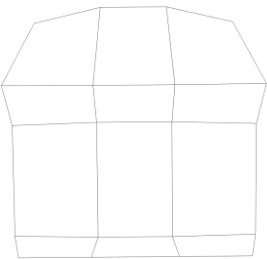
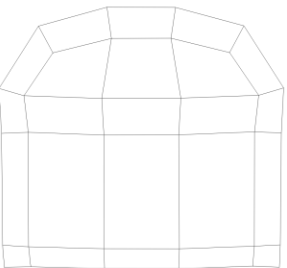
Sounds effects

MoSCoW Method





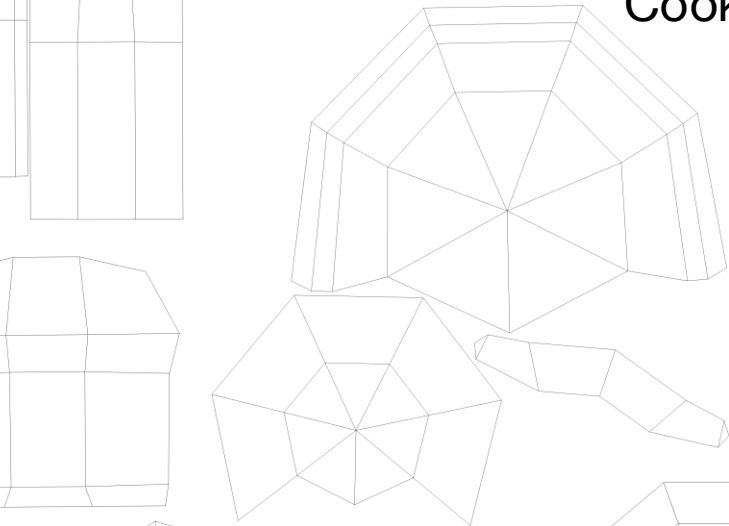
Food UV Maps



Whole loaf

Cut loaf

Bread slice



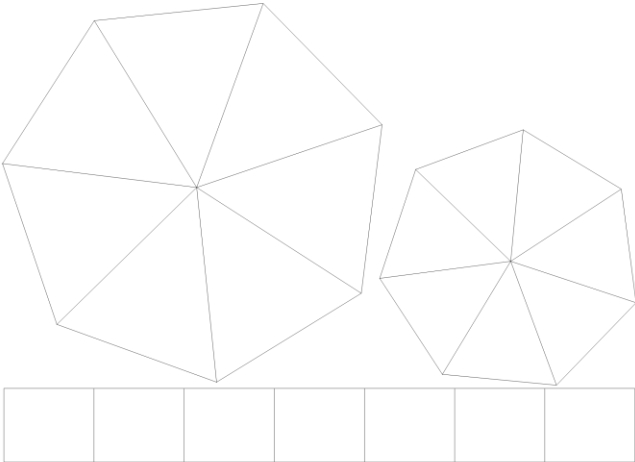
Whole cookie

Cookie piece



Whole donut

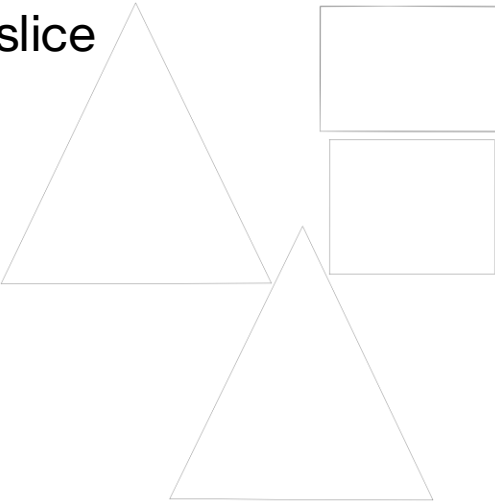
Donut piece



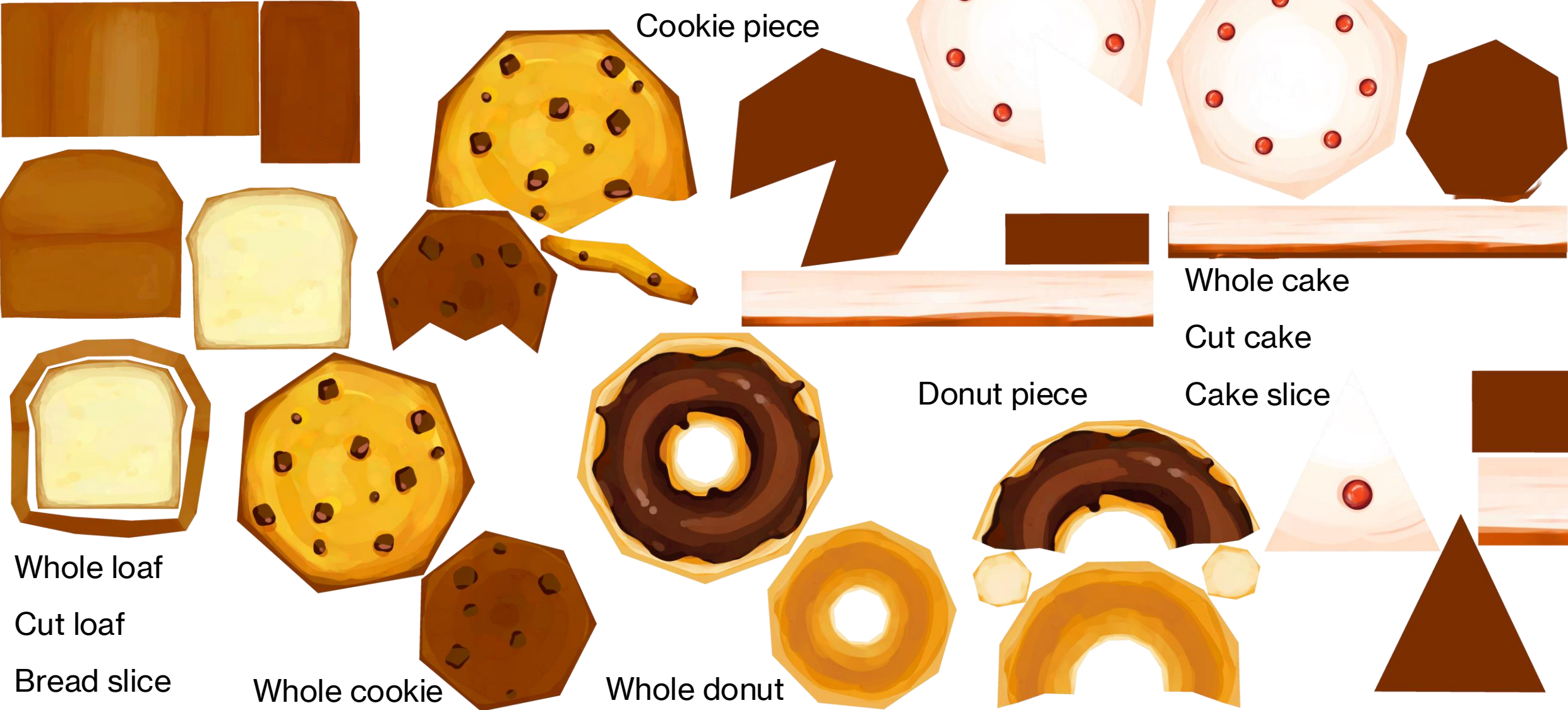
Whole cake

Cut cake

Cake slice

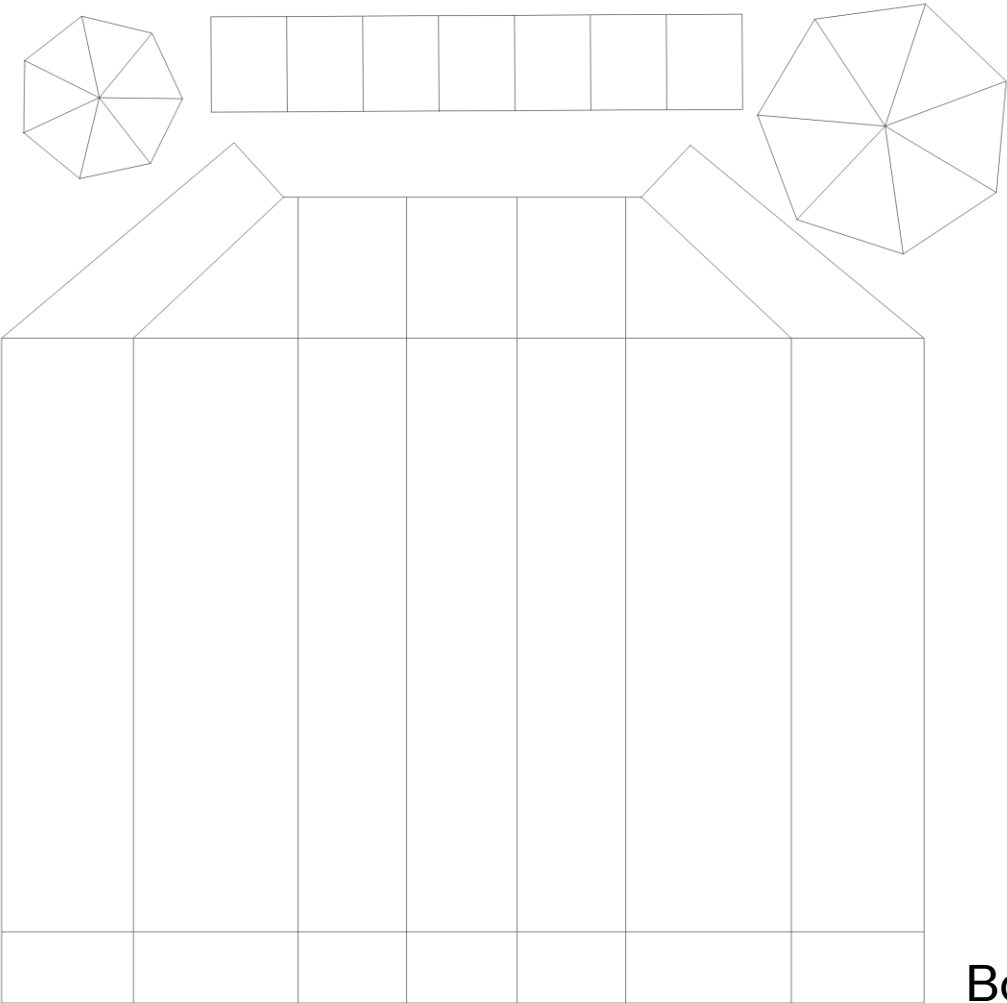
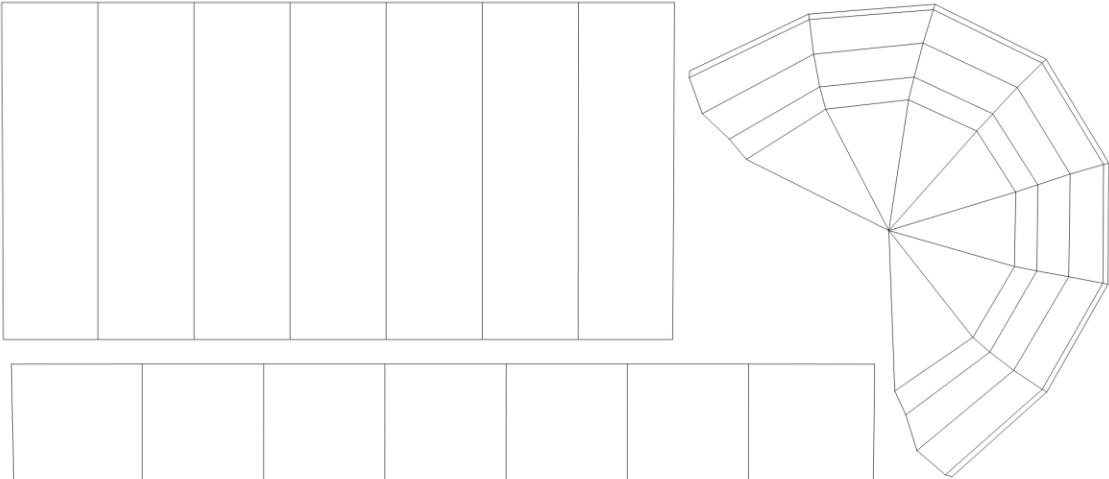


Food Textures



Drink UV Maps

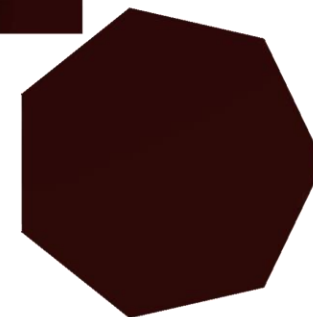
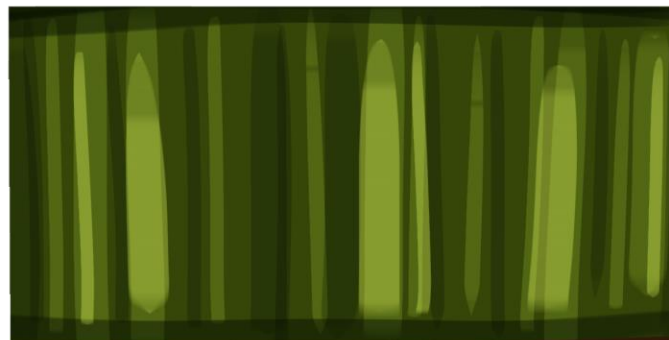
Paper cup



Bottled drink

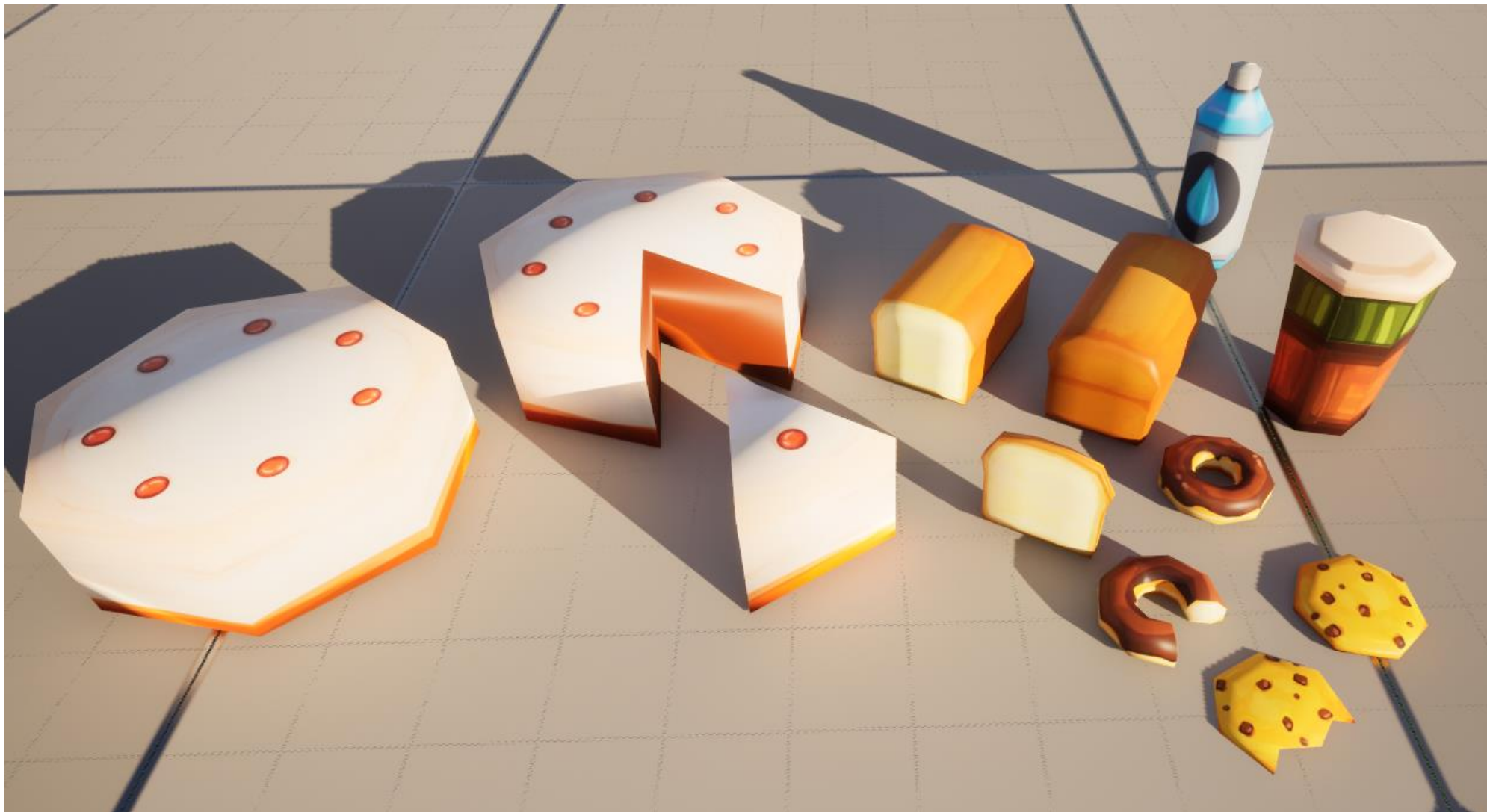
Drink Textures

Paper cup

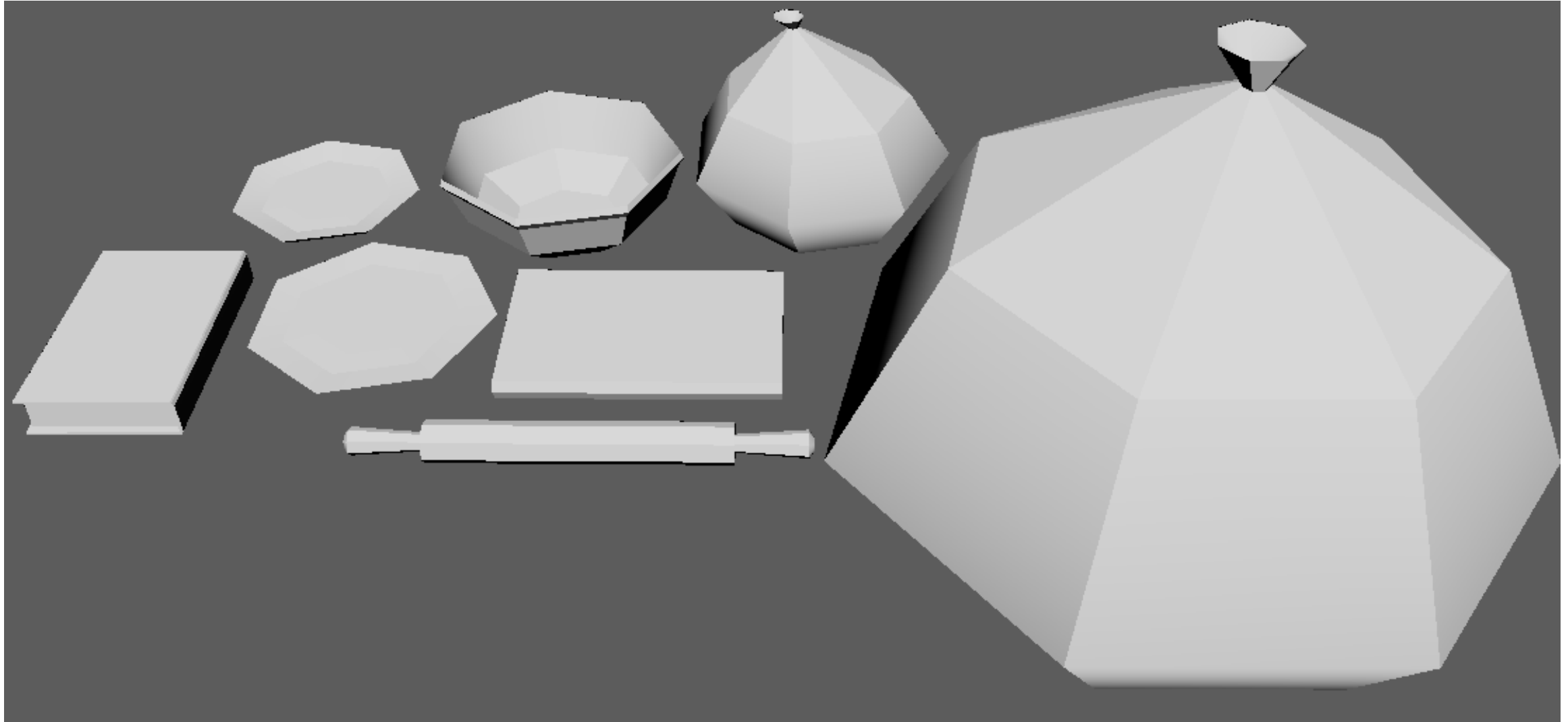


Bottled drink

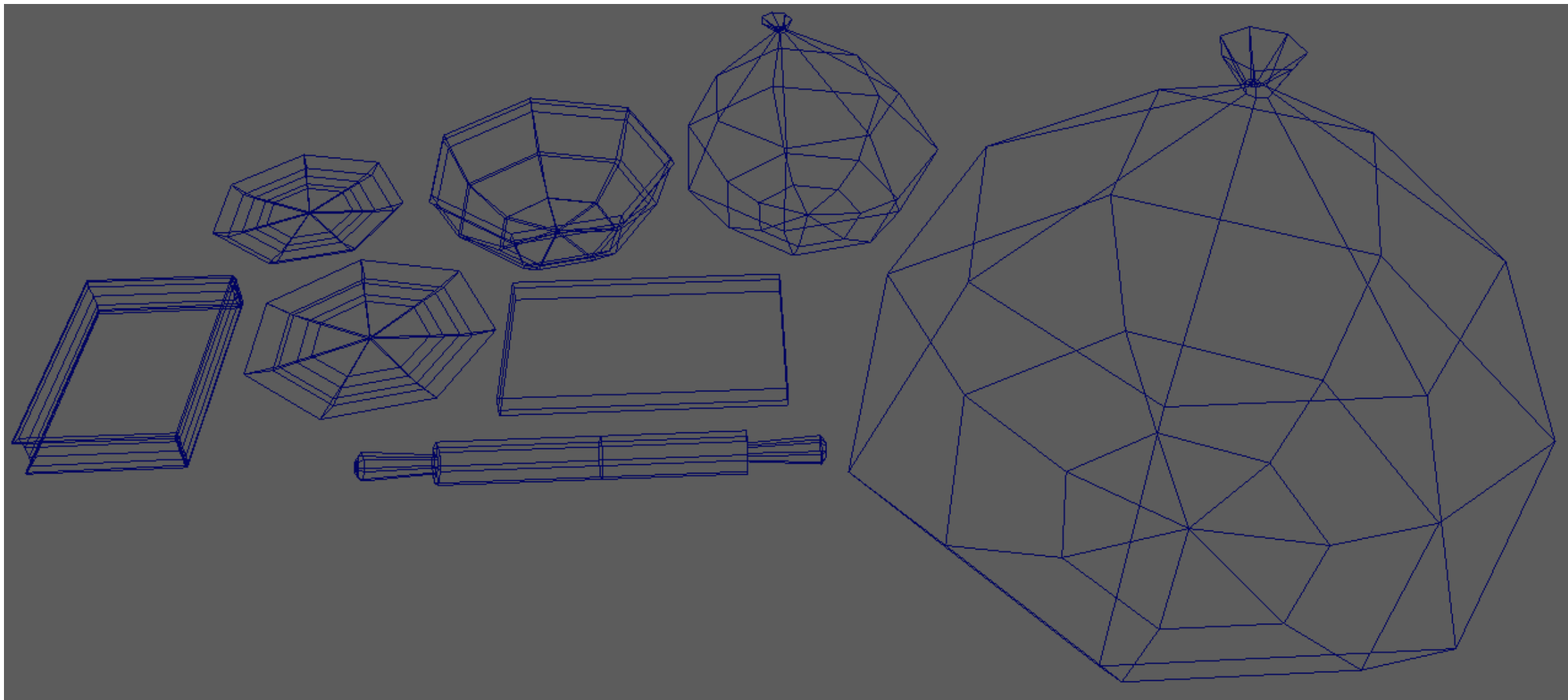
Food & Drink



Decoration Models



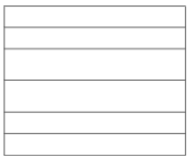
Decoration Wireframes



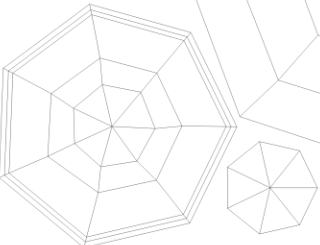
Decoration UV Maps



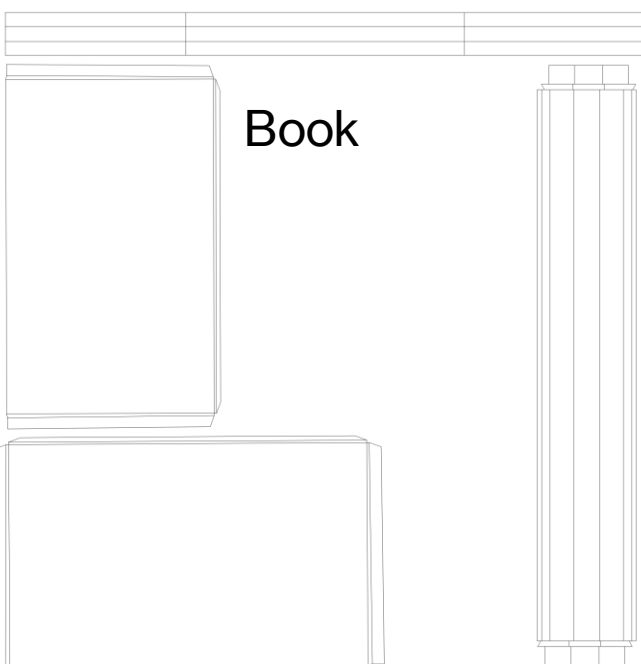
Large bin bag



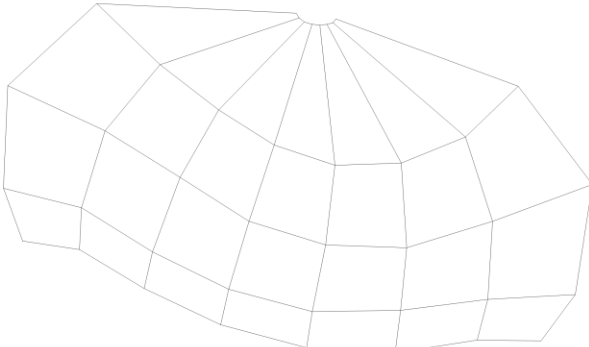
Rolling pin



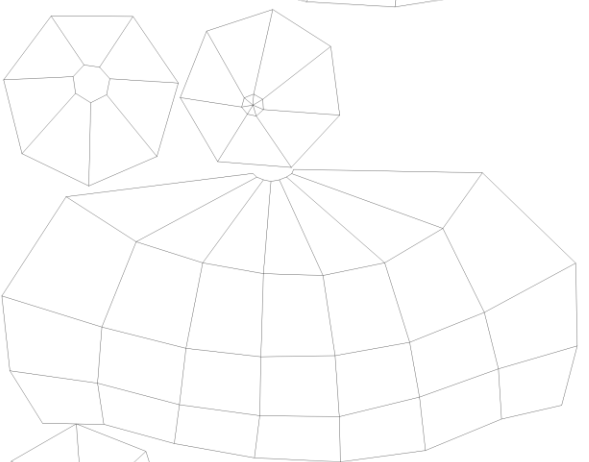
Mixing Bowl



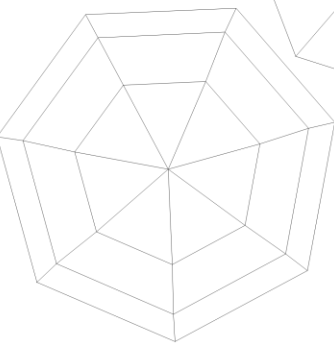
Book



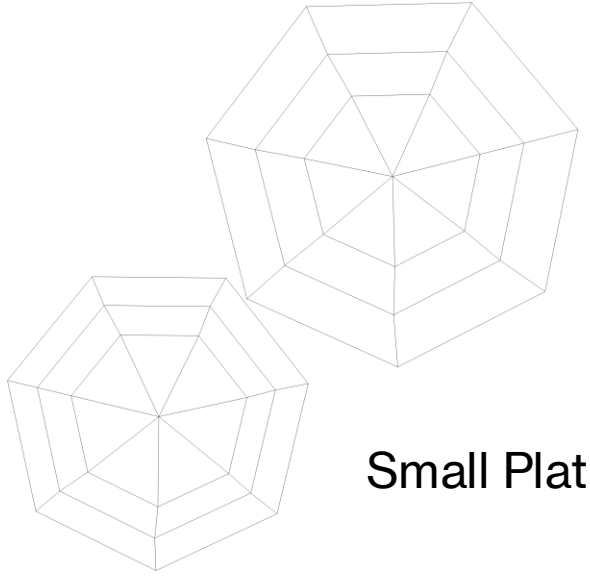
Small bin bag



Large Plate



Small Plate



Decoration Textures



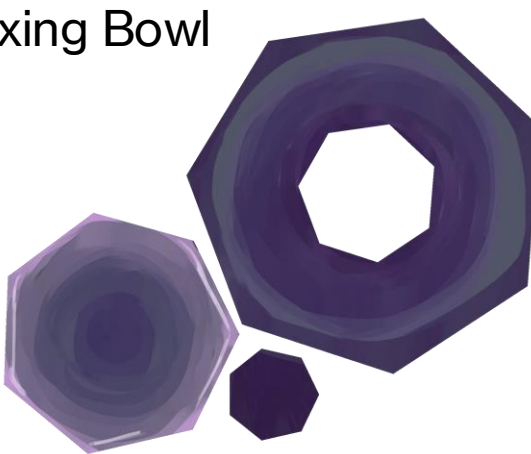
Large bin bag



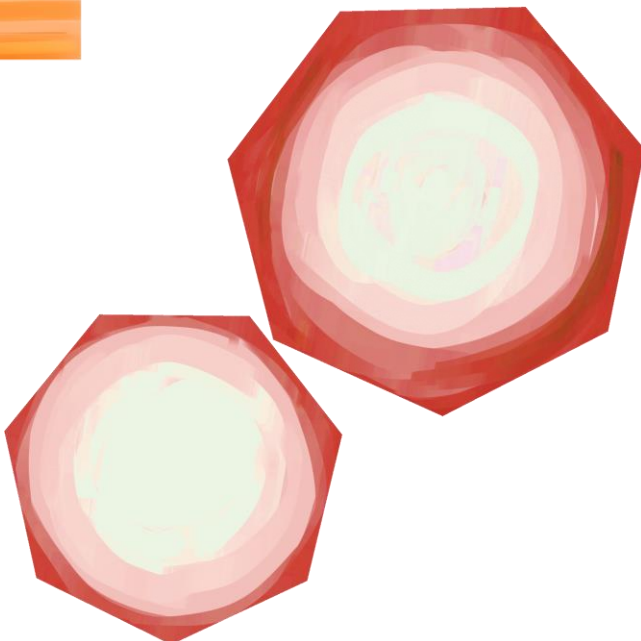
Rolling pin



Small bin bag



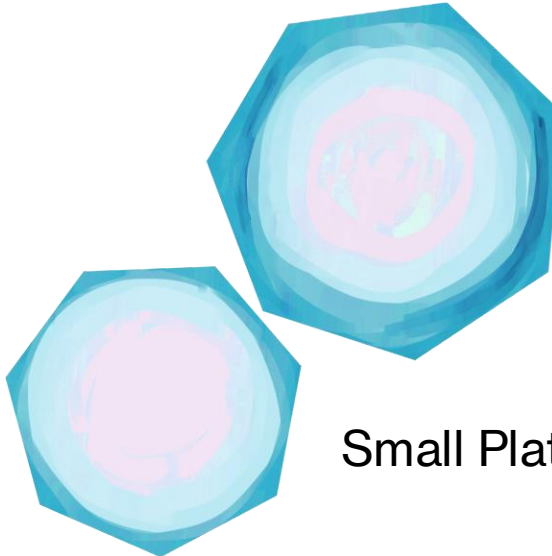
Mixing Bowl



Large Plate

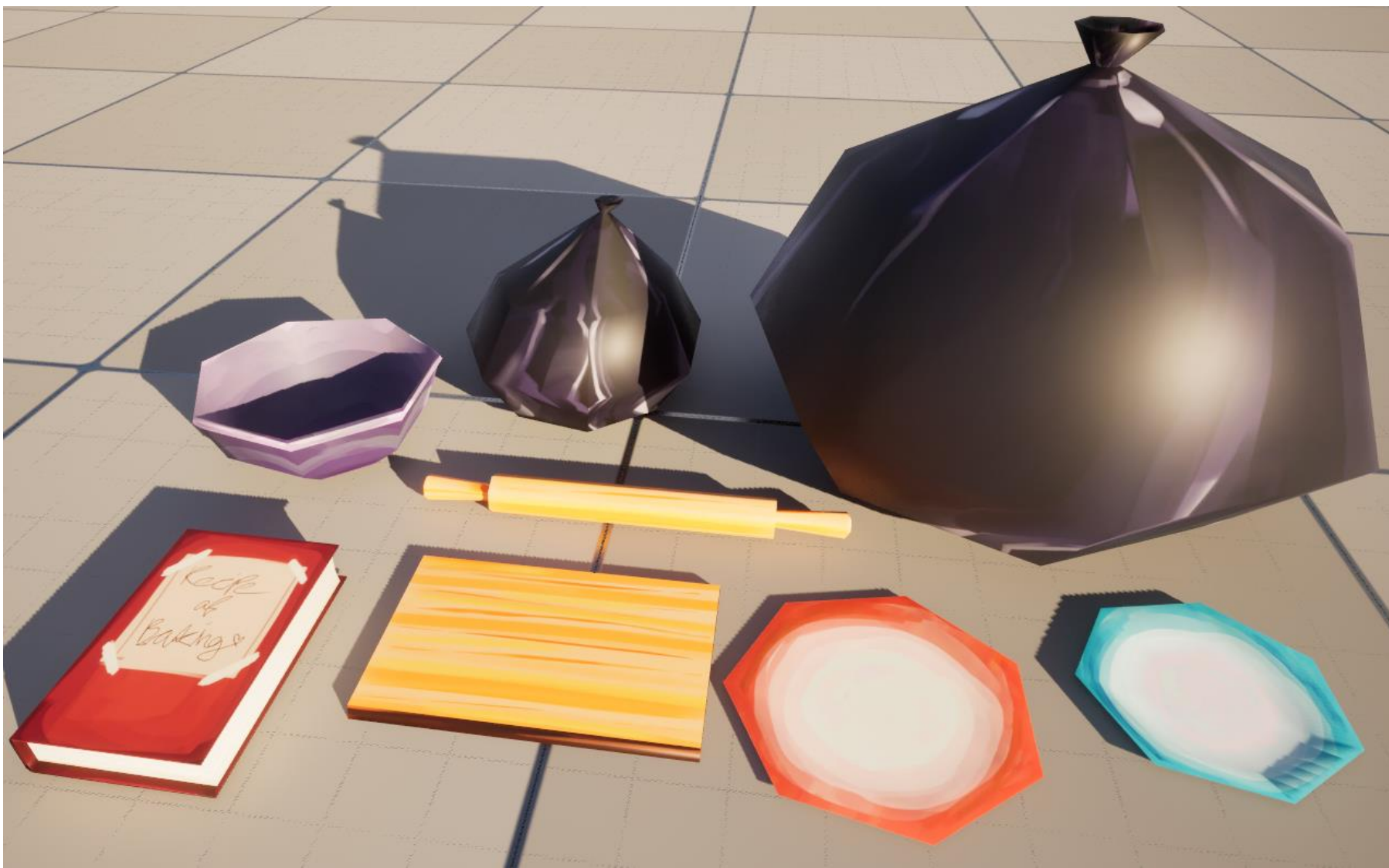


Book

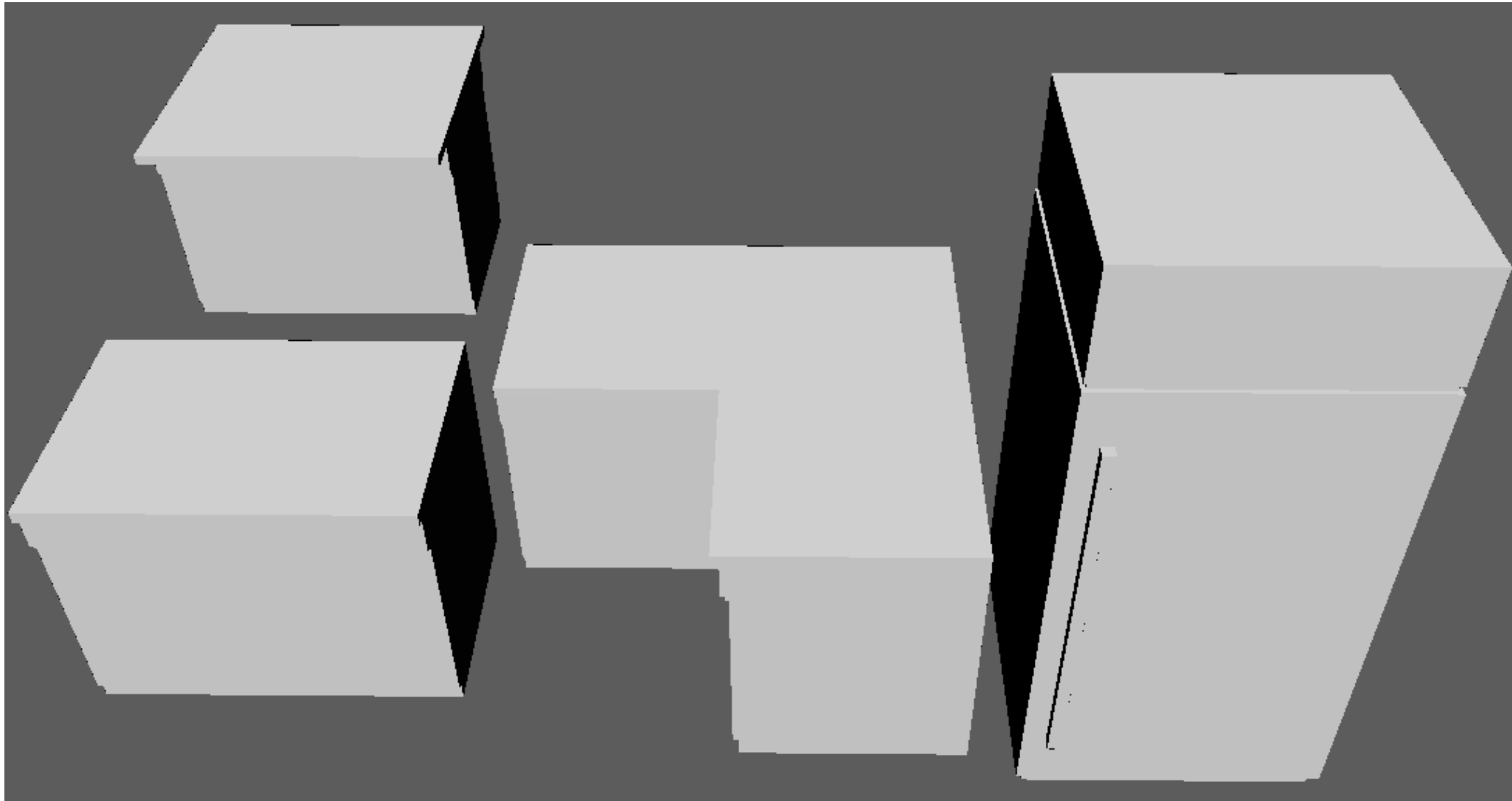


Small Plate

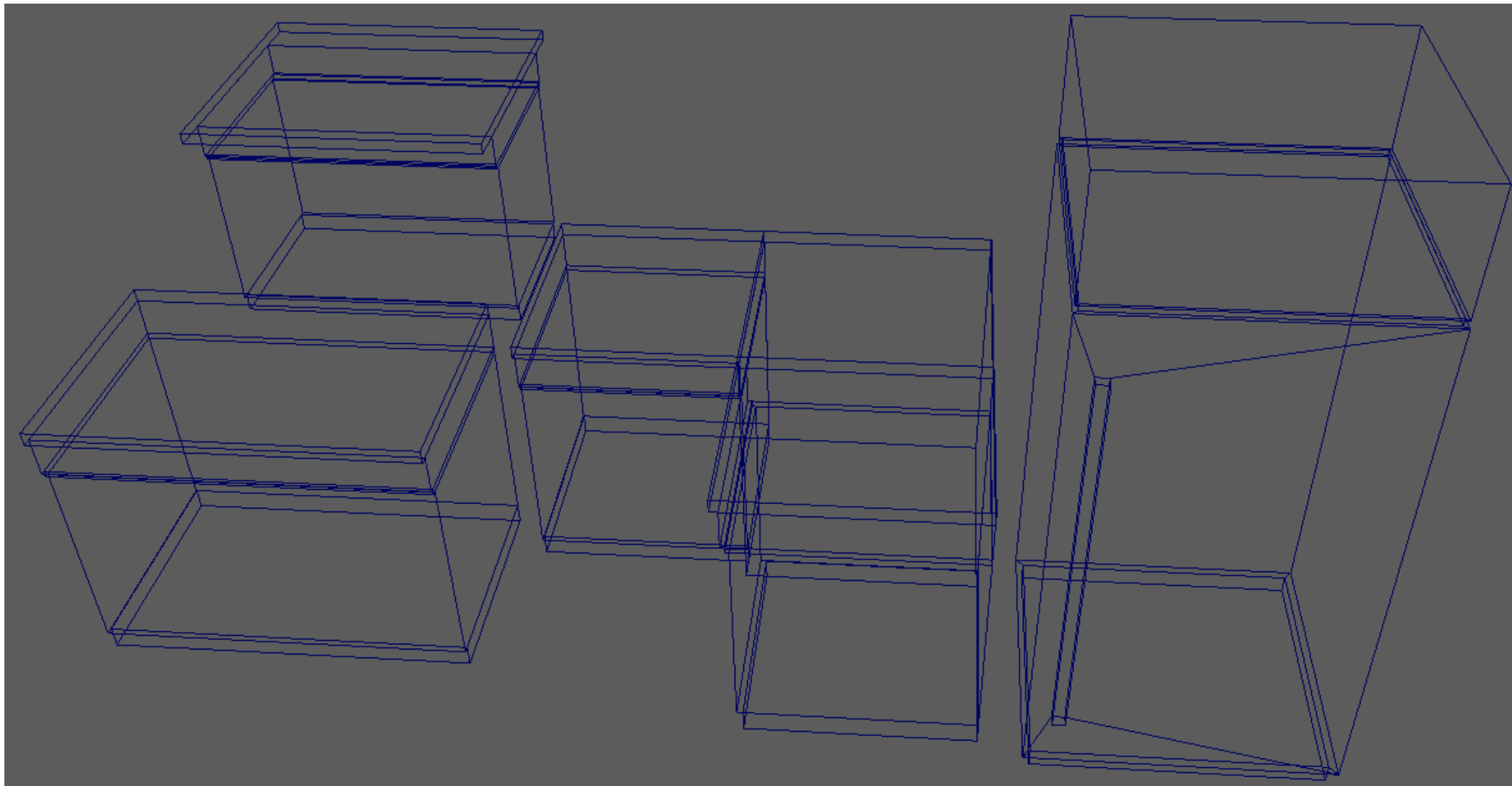
Decoration



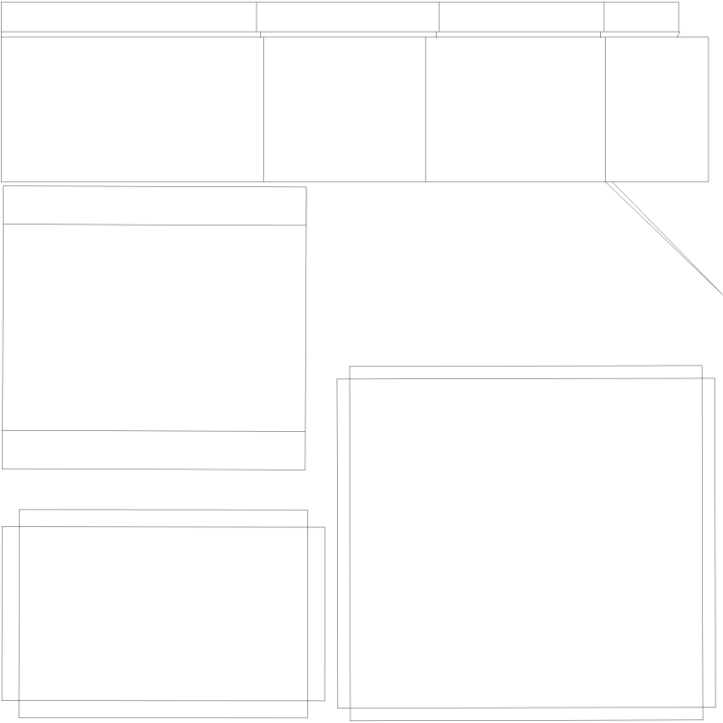
Furniture Models



Furniture Wireframes

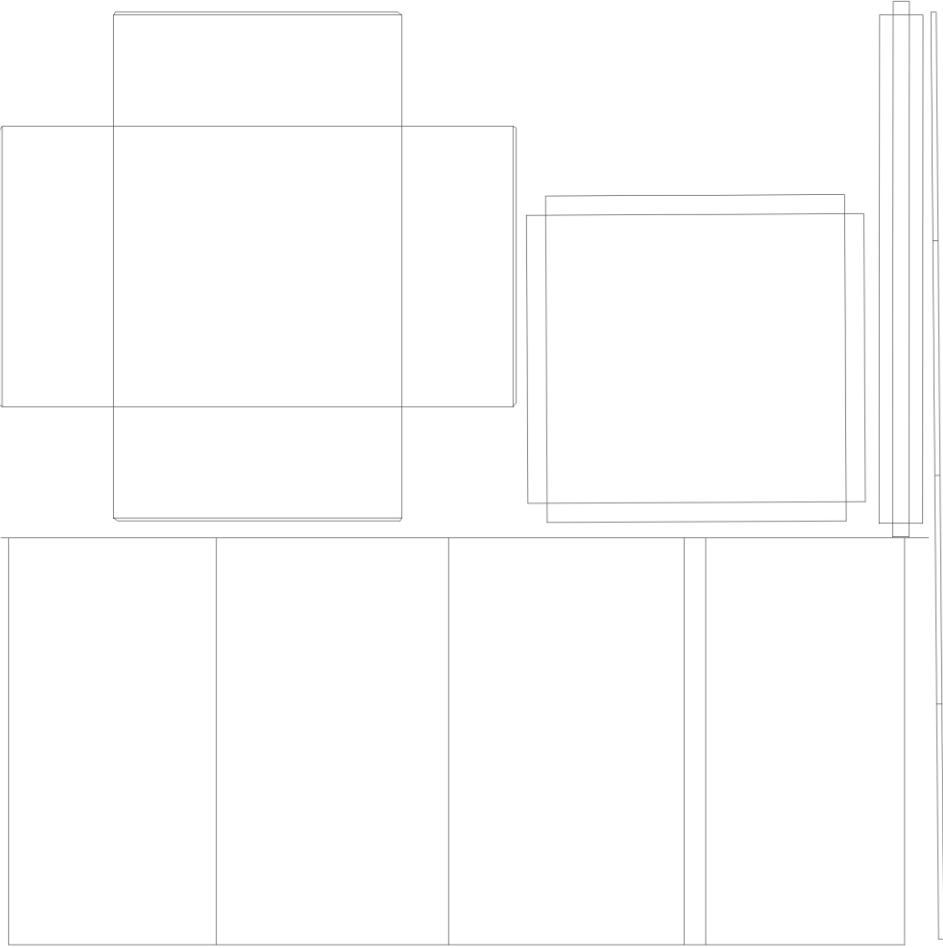
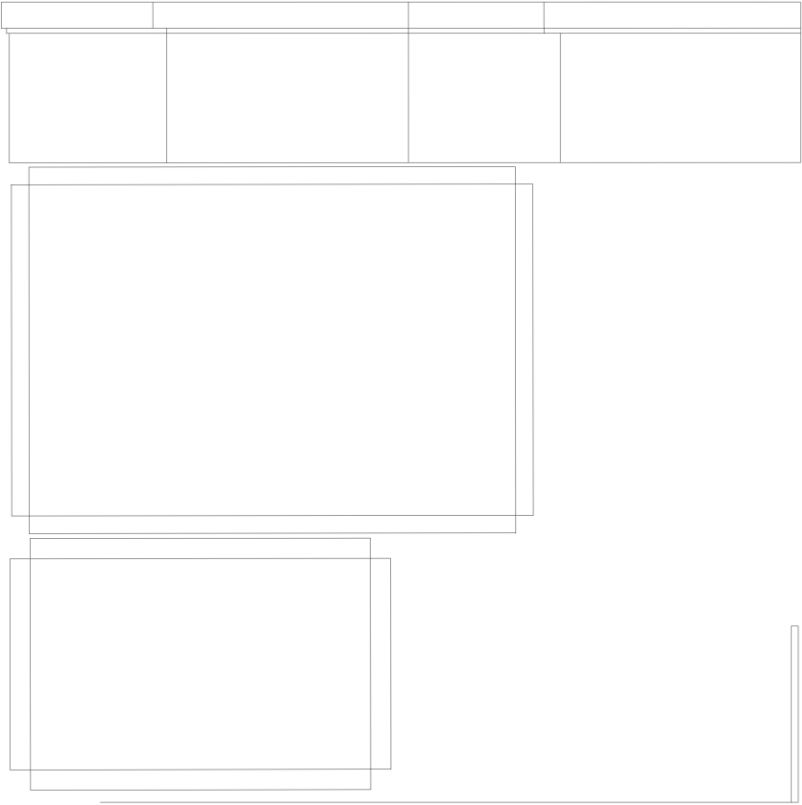


Furniture UV Maps



Island counter

Wall counter

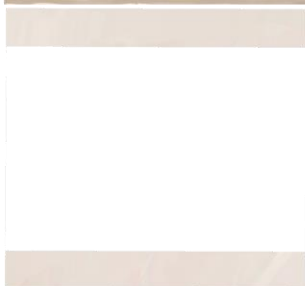


Fridge

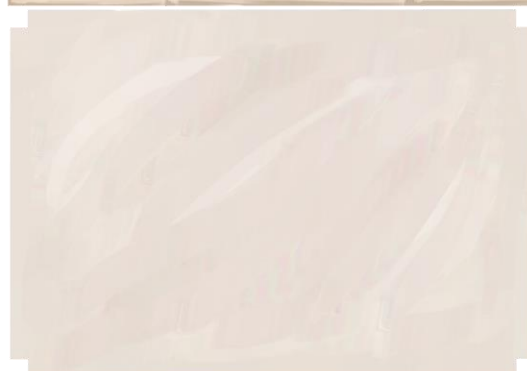
Furniture Textures



Wall counter

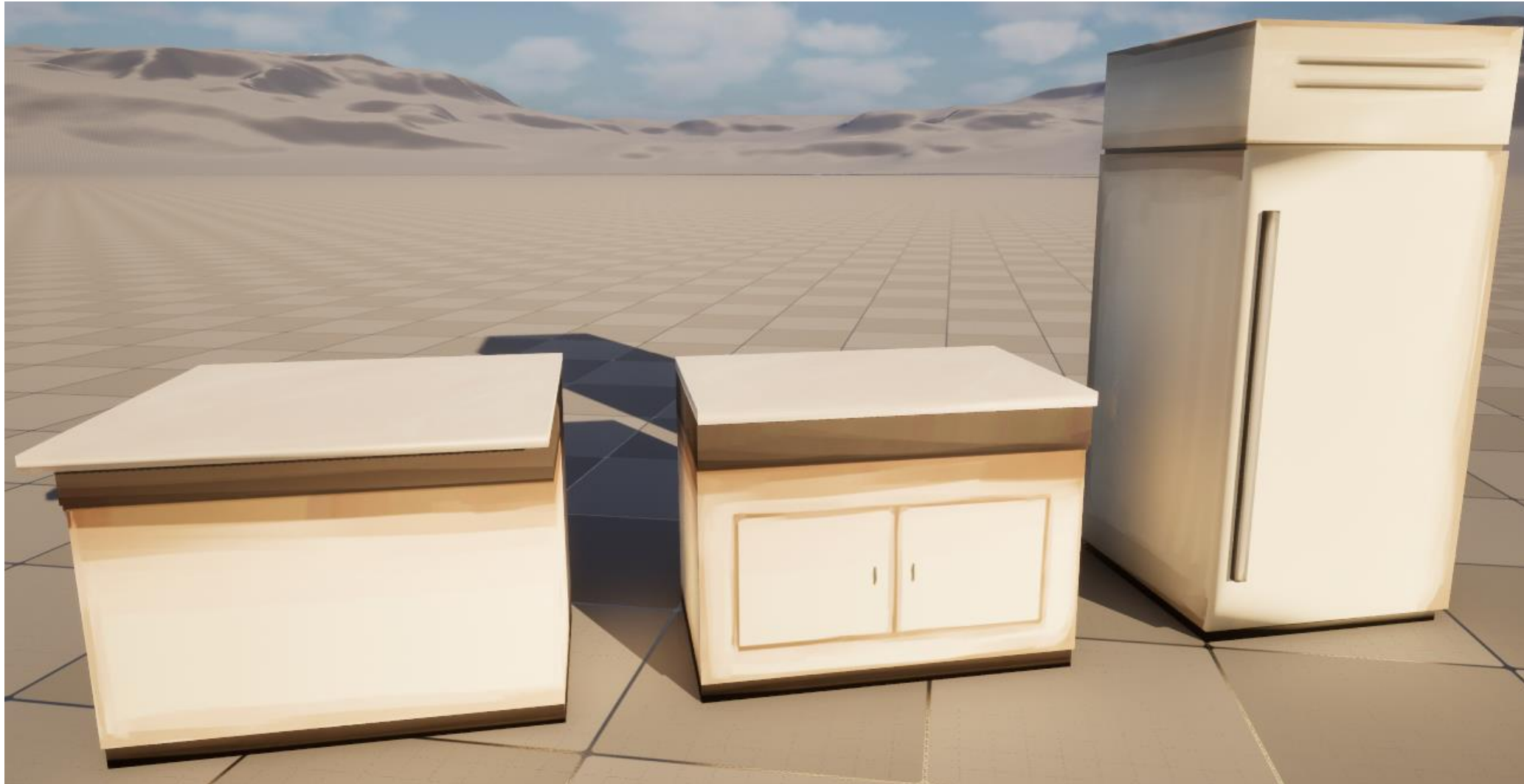


Island counter



Fridge

Furniture



Scene



Successes

- Positive visual readability
- Consistent painterly style
- Keeping a low poly-count
- Model scaling
- Producing a varied range of assets
- Relative survey feedback

Challenges

- Different assets initially felt visually disconnected
- Some models felt too realistic compared to others
- Had to reduce my initial asset list by half
- Texturing and UV mapping was more time consuming than I'd initially thought
- I'd ran into an issue with my UVs for the corner counter, causing me to scrap the model
- Maintaining the stylisation without seeming visually flat

Successes & challenges

Conclusion

The development and research of my low-poly asset pack provided me practical insight into how stylisation in 3D design can influence immersion and emotional engagement. Through the creation of 24 individual assets and the scene utilising them within Unreal Engine 5 [19], the project has demonstrated that the simple visuals can be considered more influential to a player's experience than purely realism alone. The use of simple shapes, style, models, and a consistent colour palette supported my goal of creating a welcoming and visually readable environment, reinforcing many of the themes explored throughout my dissertation, as well as the feedback and data gathered from my survey.

One of the most successful aspects of my viva was maintaining a consistent stylised aesthetic across the varied range of assets. Despite the simplicity of the low-poly approach, the pack remains visually recognisable and still emotionally engaging. The warm tones, soft colours, and simplified shapes highly contributed to the comfortable atmosphere. This can be linked back to my dissertation research on positive affects and emotional comforts within stylised environments. Additionally, the workflow between Maya [1] and Unreal Engine 5 [19] proved effective, allowing my assets to be integrated into the scene efficiently.

Overall, my viva had successfully supported my dissertation's research into stylisation and realism in 3D design. The data suggests that stylised environments are capable of creating strong emotional engagement and immersion through its coherent artistic direction, readability, and atmosphere rather than just realism alone. The project also emphasised the importance of production planning, early designs, as well as technical problem solving within 3D creation. Through both its successes and its limitations, it demonstrated how stylisation can still function not as a limitation of realism, but as an intentional and effective design approach within the gaming industry. In the future I would prioritise the time management aspect of my project by focusing on setting solid, achievable goals from the beginning, rather than becoming overambitious with my scope of work.

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