

## Game Design Document

# Morgan reist door de tijd

Morgan travels through time



Installment:  
Morgan & Bommen Berend

By

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# One Pager Page

# Report overview

## Case 4 - O2G2

Due to the declining interest in the celebration of Bommen Berend, KVVV have requested a game that would reignite this interest and teach primary school children of this important historical event for Groningen.



## Target audience

The primary target audience is comprised of primary school students aged 7-11 from the groups 6-8. Teachers and primary school students not falling into the previous age demographic constitute our secondary target audience. Parents are our tertiary target audience.



## Research

Our target audience was identified through the general demographic division in target audience for game design.

Research has shown that children enjoy a variety of games, among which adventure games, which are suitable to teach them historical events. It is not uncommon for games to be used in class, and Game Based Learning



The game is being developed for mobile and tablets, due to their availability to children, as children often own phones and schools often have tablets available. Currently 20% of the primary schools use tablets, although there has been an agreement that at least 9 out of 10 schools will use digital learning materials in 2020.

## Concept

A story driven puzzle adventure game following the story of a young child transported to Groningen in 1672 who must work to prevent history being changed by their evil scientist neighbor, while gathering pieces of the time machine needed to return home.



## MVP

The current prototype covers most of the tutorial for the game. The tutorial includes the introduction the story, playable puzzles, interfaces and mechanics, character art and backgrounds. The tutorial is unfinished but includes the elements that convey the scope and style of the finished product.



*More in-depth information can be found inside the document*

## **Disclaimer Regarding the MVP**

The MVP that has been readied for Gate 2 focuses on the Tutorial and does not possess the full game yet. A lot of time has first been used on research and on setting up the basic framework of our game. This means that our tutorial still needs some tweaks after this hand-in, but it should give a good overall feel of what we are trying to accomplish.

Our document possesses more information and assets than our current MVP has, but this is also to show that we are constantly trying to work ahead, to make sure that when our programmers are ready for it, they do not have to wait for the assets.

The current MVP has the most important basic functionality of the game:  
finished customization, normal scenes, dialogue structure, customization puzzles.

We have established a framework for designing levels which lets us expand the game more easily from this point onwards.

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# 1. Introduction

This Game Design Document has been created as the base for the development of a mobile children's game about the history of the Siege of Groningen. This document has been put together as it is a) a good way to make sure that the game has an overall consistent design b) to have one main file each group member can refer back to. Changes may be applied following iteration on concepts and features based on the response received.

In the following pages the project description is first explained, after which technical specifications, the game specifications and the functional specifications will be set out. Onwards there's a short look at the schedule and finally, the process description and references follow.

## 2. Project Description

For Game Lab #1 a game had to be created for one of the cases. Case 4 had been given to us, which meant that we had to create a game to increase awareness and excitement about the celebration of Bommen Berend, which is about the Siege of Groningen.

This case resulted in the development of an educational mobile 2D point & tap game for children of groups 6 to 8 in Dutch primary schools, with puzzles and an intriguing storyline.

### 2.1 Concept

*Morgan reist door de tijd* is a game series about a child from 2019 who accidentally ends up in 1672 as they followed the neighbor's kid. Morgan needs to find their way back to their own time. In their quest to get back to 2019 they must also prevent the future from being changed by the neighbor's kid.

The first installment of the game series, called *Morgan & Bommen Berend*, introduces the player to Morgan's story and takes them along on a journey through the events of Bommen Berend.

### 2.2 User Experience

This game is about making history interesting and exciting for children of the Dutch primary schools. This first installment focuses on portraying the history of Bommen Berend and creating curiosity about the festival. The game offers a combination of history lessons and fun by playfully introducing the children to the subject by means of storytelling and interactive puzzles. The game aims to not only inform the children about Bommen Berend, but also teach them more of the time area.

### 2.3 Theme Setting Genre

This game has the setting of Groningen in 1672, with modern touches to accommodate the storyline and fantasy elements to appease the users. The game takes place during the Siege of Groningen and tries to follow most aspects of the Siege of Groningen.

### 2.4 Core Mechanics

In this game the player can move back and forth through several locations for a multitude of activities. The quest of the player, to return home without having changed the past and thus the future, can be completed by interacting with NPCs, solving missions and doing puzzles of various kinds. Helping others and paying attention to the surroundings will be rewarded in the game.

As the game is aimed at touch screen devices such as mobile phones and tablets, the interaction with the game will be via touch screen motions. The player can interact with the

elements on the screen, they can collect objects into their inventory and move around in areas by holding one of the two direction buttons.

## 2.5 Targeted Platforms

The targeted platform is Android, for phones and tablets with the screen resolutions of:

800x480 Portrait	2160x1080 Portrait	16:9 Portrait
800x480 Landscape	2160x1080 Landscape	16:9 Landscape
1280x720 Portrait	2560x1440 Portrait	18:9 Portrait
1280x720 Landscape	2560x1440 Landscape	18:9 Landscape
1920x1080 Portrait	2960x1440 Portrait	
1920x1080 Landscape	2960x1440 Landscape	

These screen resolutions have been chosen as to accommodate a diversity of tablets and smartphones. Though the focus is solely on Android now, support for other platforms may come in a later stage.

Tablets and smartphones have been chosen as they are widely available to our target audience. Currently 20% of the primary schools use tablets, although there has been an agreement that at least 9 out of 10 schools will use digital learning materials in 2020. Most schools think that tablets will be the new standard (Mous, 2015). As of currently, there are at least 6215 primary schools in the Netherlands (DUO, 2019).

## 2.6 Target Audience

Our target audience is divided into several groups based upon their priority and how likely it will be that they are our users.

### *2.6.1 Primary target audience*

Dutch primary school children groups 6 to 8, generally in the age category of 7 to 11 (Extra Credits, 2014, 2:13). The game is aimed at children from the Netherlands, with the intention of expanding this product in a (educational) series that covers the history of the country, but using the current subject as a starting point.

The primary schools in the Netherlands counts 8 years in total. Usually the children start when they are 4 or 5 and they finish the primary school when they are 12 or 13. Some children are younger and some are older than the general age, as classes can be skipped or repeated depending on the development of the children. The years 6 to 8 are more often put together to do certain assignments, which makes them more suitable to be selected as the target audience group.

### *2.6.2 Secondary target audience*

Primary school teachers who will have to handle and distribute the material.

Dutch primary school children not falling in the main age range, but that can still access the game.

### *2.6.3 Tertiary target audience*

Parents: they tend to be swayed by brand recognition, word of mouth, or from noticing products from seeing it around them (Armstrong P., Bowman A., Gloge C., Nichols J., 2016, 1:58). However if the game will be distributed via schools (or museums), this step will be avoided.

## 2.7 User Requirements

### *2.7.1 Primary target audience requirements*

- The game is easy enough to play on its own but has a broad experience that feels rewarding if the child does something right (School of Game Design, n.d.). In addition to having fun playing the game, the child should feel accomplished if they understand what they are doing. This can be achieved by creating fun and easy (intuitively understandable) mechanics and rewarding good performances.
- The game's educational purpose isn't overt: the teaching is mostly unobtrusive (School of Game Design, n.d.)
- The game gives the users the means to learn something without talking down on them (School of Game Design, n.d.). The game is accessible (intuitive to use and follow) despite the content (history).
- The game features are easy to manipulate to the child's needs and likings to ensure a better experience. For example with settings it is possible to change the volume. These settings could be used as well to enable a 'colour blindness' mode, or switch font to improve readability for children with dyslexia.
- As the Dutch education system is tendentially bilingual, and there may be children in Dutch primary schools whose first language isn't Dutch, the player should be able to change language. In addition to making the game easier to play, it could serve as an additional education tool: to teach Dutch children English, and vice versa.
- The game UI is intuitive to the player. In addition to this, the player can easily 'go back' if they access something they didn't mean to.
- The game should be child appropriate. While it can touch dark themes, it shouldn't expose children to unnecessary violence or inappropriate content. To ensure the game will be child appropriate, we will follow the PEGI guidelines (PEGI, n.d.) . In addition, the game will be free of advertisement and in-game purchases.

### *2.7.2 Teachers' requirements*

- the product should be easy to introduce. The teacher should not need to spend too long to assist in setting up the game or need an elaborate interface for the students to understand how the product works, what the point of the product is.

- at the same time, the teacher should be left with the time to assist students if need be (ie. technical problems with the platform) without worrying about the students getting lost or too far ahead.

### *2.7.3 Parents' requirements*

- the game has a purpose other than entertaining children, but provides an education.
- the game is ad free (Armstrong P., Bowman A., Gloge C., Nichols J., 2016, 1:58).
- the game is safe. This applies in regards to chats, which can be a toxic environment for the children. A solution for this would be to either make the game single player or allow co-op via a specific code created in the instance it is used and shareable with friends (people in your friend list in-game/people you are talking with in real life). Another option would be to allow minimal communication: not allowing people to type, but only allowing them to select certain phrases or emojis.

## 2.8 Game Philosophy

As the popularity of the event Bommen Berend is in decline, the game aims to revive the interest in the event among the youngsters in the primary schools. The game aims to teach the youth about the events that lead to the celebration of Bommen Berend and about the way of life of 1672.

## 2.9 Design Goals

The design goals of this game are education, assisting education and teachers, amusement and problem-solving.

## 2.10 Influences

This game was influenced by a lot of different sources. The games that influenced it are for example: Spy Fox, Putput, Pyjama Sam, Assassin's Creed series

Series which influenced this game are for example:

Montana Jones, Argaï, Shinzo

## 3. Technical Specifications

### 3.1 Concept Art

For this project we first defined the style that would work best for our target audience, and secondly concepted how to implement fantasy elements. More in depth information on the overall style can be found in the attachment Style Guide.





## 4. Game specifications

### 4.1 Gameplay

The game is about the player having been sent back to the past, along with someone else. By helping people the player learns about the events of the Siege of Groningen and the player gets to collect the items they need to get back to their own time. As of yet, there will be 5 points to visit: 1 for the tutorial, 3 for regular play, and 1 final one that finishes the game and has the confrontation with the evil neighbor's child.

#### 4.1.1 Tutorial

The game starts off with a small video/collection of images to set the story. The player will be able to set their name and the appearance of the character after the introduction to the story. Once that has been done, a child of 1672 will help the player get started by showing them their map. The child will explain the base functionality of the game and show the player to the first puzzle, helping them with it. At the end of the first puzzle the player finds the blueprint to the machine, which apparently the neighbor's child had accidentally dropped.

#### 4.1.2 Normal Gameplay

There will be a map with several locations. Each of the locations represents a key point in the history of the Siege of Groningen and thus the locations have to be dealt with in chronological order. Each location has a few different interactions and is 'scrollable', meaning that the location is bigger than the size of the screen so that there is an 'exploration' feel to it. The interactions of the locations are npc interactions, puzzles and small games. All will provide a part of the time machine, an item needed for another interaction or an appearance item.

### 4.2 Progression

The player progresses the story by moving from location to location and doing all the interactions possible in those locations. All elements of the game can be failed, but the player won't die. They will be getting second chances or alternative happenings. The game aims to adapt to the level of the player instead of punishing the player for not being 'as good'.

### 4.3 Goal

The goal of the game is to complete it by doing through all of the locations and fulfilling all of the interactions, so that the player learns about the Siege of Groningen.

## 4.4 Puzzles

Different kinds of puzzles will be used, all aimed at the age group of our target audience. They should partially relate to society of 1672 and partially to things the player should already know, like basic math and very basic English. The puzzles should have a diversity of not just being ‘logical’ or ‘thinking’ puzzles, but also just puzzles about being fast.

### 4.4.1 Suggested puzzles

**Hidden objects:** find the objects listed in the scene

**Complete objective:** use items of environment and/or inventory to complete certain objectives

**Connecting game:** connect point A to point B with systematically turning elements in between.

**Jigsaw puzzle:** literally do a puzzle

**Mahjong:** keep on collecting pairs until the field is empty

**Word finder:** find all the words in the field and make the right word with the remaining letters

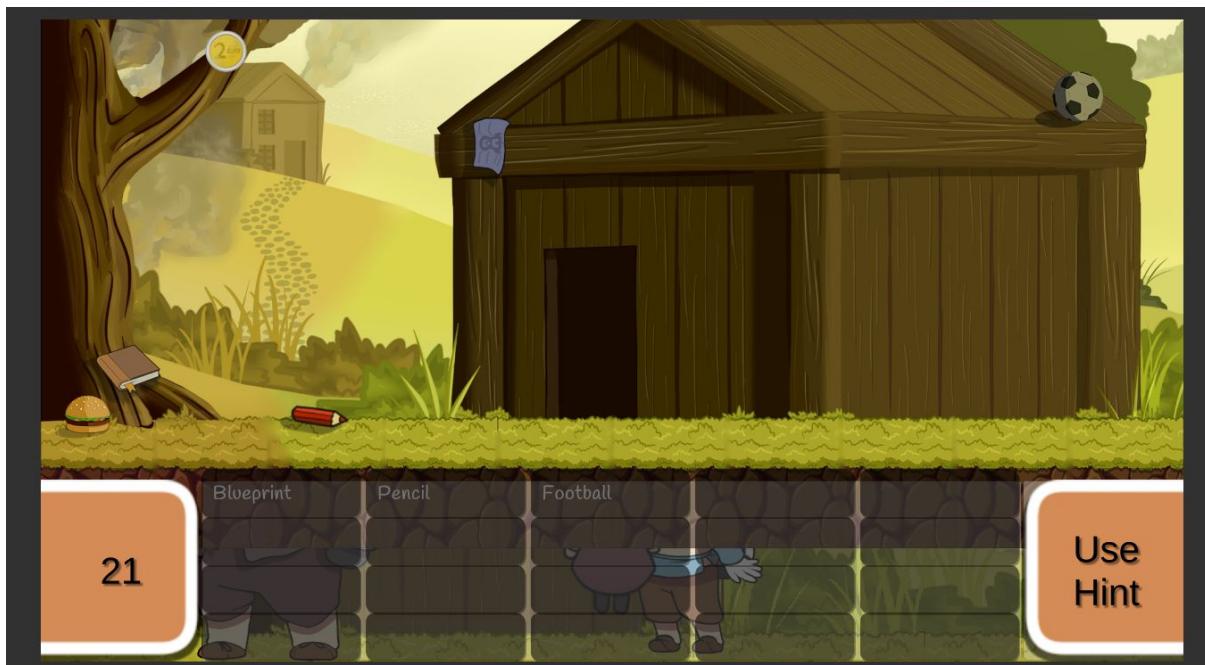
**Whatever This Is Called:** move your finger quickly through certain paths without hitting the walls

**‘Escape room’:** but then ‘inside out’ to get into a room; infiltration

**Logic puzzles:** can be related to the current case at hand, for example, finding the right key from a set to unlock a door (either based on instructions given or on the appearance of the key & the lock), pointing out who of a set of characters could have done X action based on the information given, figuring out what object a clue fragment the character found is part of. Puzzle ideas that have been expanded on are added to this document

### 4.4.2 Puzzle examples

This is one of the examples of the puzzles we’ve done already. This is a hidden object game. In the final version of the game there will be more things to find, but this is the prototype for the MVP.



## 5. Functional specifications

### 5.1 Game Mechanics / Game flow

In this game the player can do a variety of things.

Character icon (top left)

- Tap for profile

Profile

- check & change appearance (+ see all owned appearance items)
- check achievements

Settings menu (top right)

- select language
- select audio levels
- see about information (creators/app version/ToS)
- connect to google account
- (option to download all assets (to decrease loading time on 3g etc))
- select resolution

Inventory

- Select item (1 tap. Long tap for displaying information and bigger picture)
- Use item (Select and then click on the area/object/person to use it with)

Diary (bottom left)

- check tutorial
- check the FAQ and instructions
- see achievements
- see progress cases visually

Main map (bottom right)

- different locations which the player can select to go to
- see the timeline of the Siege of Groningen

Location

- interact with items (collect, view, use)
- interact with NPCs
- interact with puzzles
- walk to the left or right, depending on which on-screen movement button is held.

## 5.2 Gameplay Elements

The game will have the following gameplay elements:

### Appearance items

The appearance of the player is mostly a cosmetic element. It may sometimes affect the gameplay if the character needs to pass off as a certain person. For example, one cannot get into a baker's guild when wearing jeans and a t-shirt.

### Diary

A small notebook that shows the quests/missions the player is currently on and what objectives the player needs to fulfil right now.

The progress towards the completion of the time machine is tracked through a blueprint that gets filled in as the items are acquired.

[Potential additional tab containing a list of all of the items acquired at some point by the player, each item can be clicked on and has a brief description of what it was for/who used it/who invented it]

### Items

Varying interactable objects that a player may find on different locations, which can be used in conversations or in solving puzzles.

## 5.3 Story Writing

In story of the game starts out with the player wanting to invite the neighbor's kid to play, but this goes astray. As the player gets closer to the shed of the kid, the player spots something odd is going on. The player doesn't know what it is when suddenly a portal of light appears in the shed and the kid goes into it. With a rush of curiosity the player dashes after it, following the kid through the light. Suddenly the player ends up in 1672, the year of the Siege of Groningen. As the player lands in the middle of a field, they get spotted by a boy named Jacob. As the child from 1672 is worried about what will happen to their home, and the player is worried about getting back home, the two agree on a pact. The player will help the child end the war, as long as the child will help get the player back to their own time.

The neighbor's child is set on changing the timeline and with that trying to get himself in power as he as technology the people of 1672 can't even dream of.

The player is set on stopping the neighbor's child, as changing the past would change the future too!

## 5.4 User Interface

For the user interface we first researched the general practices with digital touch screen products such as tablets and smartphones, after that we focused on the user interface practices for younger audiences.

### 5.4.1 General UI practices

When using swiping motions, people prefer to swipe horizontally from left to right(Wilson, 2015). Tablet users are often frustrated with the lack of clearly indicated touchable areas. Areas often cause unintended touches, they cannot be tapped when the user wants to tap it, or the touchable areas are too small to interact with properly. There should be clear visual clues and there should always be a way back to the previous screen. Touch screen users can be stimulated to continue exploring if part of what they see is cut off, as it is a cue to swipe to see more.

When designing the interface for a game that will be available for both smartphones and tablets, it is important to keep the differences in mind. Any app aiming to reach both devices needs meet the following demands (Ashwini, 2017):

Adaptability: the content display adapts to the available screen space.

Interactivity: The screen size decides how much content can be shown and how much should be split up. The user should be able to interact with the whole screen through common gestures like swipes, pinches, taps and long taps.

Organization: For phone screens is frustrating for the user to have tooltips, drop down menus, modal windows and sliders. Though it is less frustrating to use these on tablet screens, simple streamlined designs are preferred.

### 5.4.2 Younger Audience UI Practices

For the younger audiences it is very important to get audio and visual feedback from what they are doing (Sherwin & Nielsen, 2019). Younger audiences want instant gratification and prefer a simple and obvious User Interfaces.

Their main focus is entertainment. While exploring apps and such, they are more likely to chaotically try whichever they can.

Visualizing UI items with a metaphor makes it easier for them to navigate, such as having a map icon in the interface instead of just the word 'map'.

Younger audiences are likely to have problems to distinguish real content from advertising and promotions.

Our target audience is 7 to 11, however, these groups are split up in ages 6 to 8 and 9 to 12 (Gross, 2019).

As for the feel of the game, ages 6-8 prefer bright colours but with depth. They like characters that are human-like. In regards to the typography, simple and easy to read is preferred, but with a bit more challenging aspects here and there as they aren't 'young kids' anymore.

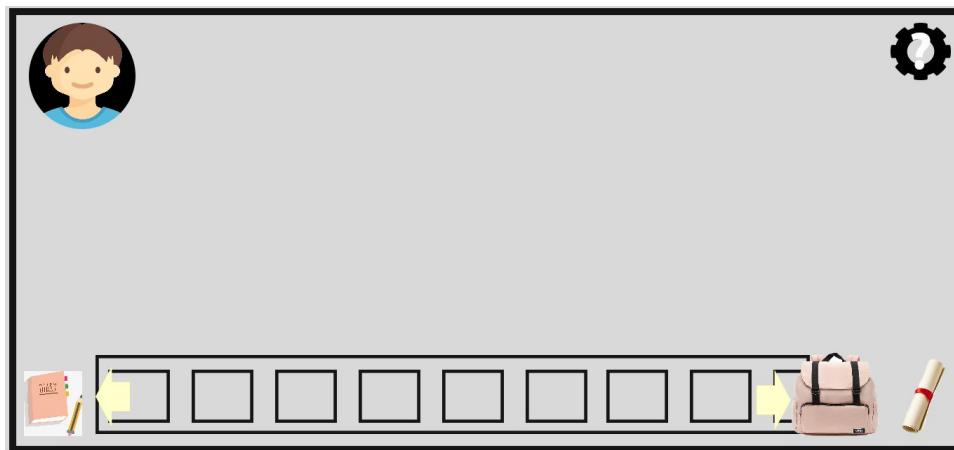
The ages 9-12 prefer a more grown up mood with more realistic illustrations. They prefer the same type of typography, but want more complex palettes and a higher difficulty in the used words.

To accommodate both of them, the palette should incorporate bright, saturated and muted colours in a balance. The characters should be semi-realistic human-like. The words used should be mindful of the user's language level, while also providing more difficult words in an understandable context to strengthen the 'big child'-feeling.

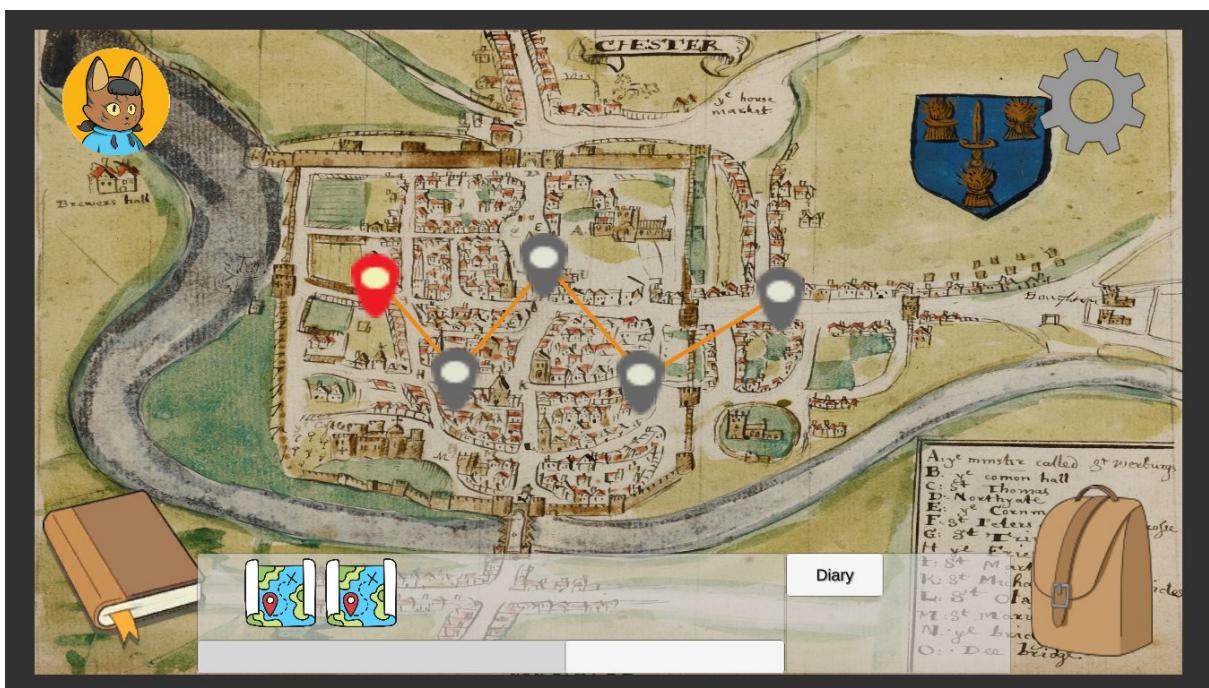
### 5.4.3 UI prototypes

These prototypes were created from a concept first, then the results of the research were applied to improve the UI.

Basic interface concept



Current interface (open map)



## 6. Testing

These following things should be play tested. This is a list to make sure we don't forget when we get to that phase.

### Playtest list

- Art style
- difficulty puzzles and quests
- logic of gameplay
- logic of UI
- enjoyment of game
- is the history brought interesting enough?
- what are the general tablets the kids have at school?
- which groups would our game be most suitable for? 1-2-3, 4-5, 6-7-8?
- how difficult can the Dutch be? / how simple should the Dutch be?
- Are we missing things?
- Length (duration) of the whole game
- core gameplay loop

## 7. Schedule

As a lot of research is being done and the concept is rather big, the game won't be ready before the end of the 9th of April (Gate 3). For the minimum viable product of Gate 2 we have focused on creating the tutorial level. After Gate 2, we will focus on creating the first level. In total the game should end up with 5 levels, including the tutorial level and the end level.

In the following period we aim to create level 2, 3 and the end level. Next to that, we aim to improve what we have.

Here are the functions of the game divided by their priority in a planning for the remainder of this period:

<b>Sprint stand ups:</b>	Monday, Wednesday, Friday		
<b>Group meetings:</b>	Twice a week	Extra meetings as needed	
<b>Goal for demo:</b>	Tutorial, level 1	<b>Goal for next block:</b>	Remaining levels, refining
<b>Week 5</b>	<b>Week 6</b>	<b>Week 7</b>	<b>Week 8</b>
Gate 2	refining tutorial, where needed:	playtesting with target audience	Gate 3
Implementing the tutorial level	fix bugs/typos	implementing level 1:	Business pitch
MVP missing art assets	character animation (idle, walking), missing sprites	puzzles (coding)	iterate on design on feedback/research
MVP updated art assets (after feedback from Niek)	refine background and props	puzzles (art)	refining level 1
MVP document	complete interfaces	npcs - sprites	fix bugs
Updated style guide	defining level 1 story, puzzles, and assets needed	backgrounds	character animation (additional, if needed)
	Setting up playtesting sessions	props	refine background and props
	Implement sound	defining level 2,3,4 story, puzzles and initial list of assets needed	preparation for the demo (what will be shown, preparation of concept art & assets slides, marketing material (mascots & such))
	Translation to Dutch	Business pitch preparation	
		Intro animation	

A full planning of this complete period can be found in the appendix.

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# Appendix

## A.The Siege of Groningen (1672)

### Events

In the disastrous year 1672 The Dutch Republic was attacked from 4 sides at once. The North-Eastern side was attacked by the prince-bishops Bernhard von Galen (Nicknamed Bommen Berend), bishop of Münster(1606-1678).

In 1665 he had attempted to take over the area too, but did not get further than Winschoten. This time he saw his chance because The Dutch Republic was already getting attacked from several sides (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-b).

Via Overijssel he travelled onwards to Coevorden. This had been seen as an impenetrable place. Onwards he tried to take over Bourtange, but they had a too strong defense. A lot of people from Drenthe fled to Groningen, as the leader (landdrost) of the province had fled as he believed collaborating was better than fighting.

At this point Carl van Rabenhaupt (1602-1675) from Groningen was chosen as leader for them. He was responsible for the defense of Groningen. Bommen Berend tried to reach Groningen by travelling around Bourtange.

From 21 July 1672 the Siege of Groningen started by the army of Bommen Berend. Troops from Cologne\* aided him. Though a lot of 'progress' was reached in the South of Groningen, it proved to be a tough battle.

The troops from Cologne suffered a humiliating loss at Nienhuis at Garrelsweer. Bommen Berend's troops had been beaten at Noordhorn[12]. Though Bommen Berend had reached the city from the South, the Northern side of the city remained available for the delivery of supplies. This combination of events endangered Bommen Berend's troops/position and so after 4 weeks of harsh battle they retreated. Onwards Groningen was freed on the 17th of august 1672, but due to a change of calendar, that became the 28th of august. (juliaanse -> gregoriaanse)

A few months later Coevorden also got freed by Van Rabenhaupt (Historiek, 2018).

\*military from Cologne was aiding Bommen Berend because Zonnekoning Lodewijk XIV/Louis XIV of France had made a pact with the dioceses of Münster and Cologne to take revenge on the Dutch Republic. There was a lot of envy from the surrounding countries: they had more power but less wealth than the Netherlands. Though the Netherlands had an excelled marine force, the ground troops were disappointing (Koops, 2018).

### Defense details (Van den Brand, 2018)

- There was a sconce at Noorderhogeburg.
- The lands to the West, North and East of the city were put under water. This meant that Groningen could only be reached via Hondsrug.
- The attackers came from Aduarderzijl
- there were several defensive fighting positions (loopgraven). The troops from Cologne were between Winschoterdiep and Oosterpoort, while the troops from Münster were located between Oosterpoort and Marnixpijpen.
- Different kinds of cannonballs/bombs were used: to damage, to burn and to create a horrifying scent.

## Places

Places that got taken by Bommen Berend, at least for a while:

Staphorst, Coevorden, Winschoten, Oudeschans (Koops, 2018), Westerwolde, Oldambt(Van den Brand, 2018)

## Key Places in Groningen

Groote Griet - Grote Markt 36-39

At least 20 big cannons were made in preparation of the fight against Bommen Berend. There is now a café at the spot where this specific cannon once stood (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-a). The legend of Groote Griet speaks of a giant cannon which the people of Groningen used to shoot at Bommen Berend. At that moment he was having dinner at the tower of Haren. The cannonball supposedly shot the sauerkraut with bacon bits from under his nose (in a literal sense, not the idiom) (Van den Brand, 2018).

The 9 Gates (Stad Groningen Click't, 2018)

1. A-poort
2. Herepoort -> Oude Herepoort = Corner of Herestraat/Zuiderdiep  
Groningen had many city gates and fortified walls to protect the inner city, which were crucial elements in the defense in 1672. The foundation of the gate is still present (Koninklijke Vereeniging voor Volksvermaken Groningen, n.d.-a).
3. Poelepoort
4. Oosterpoort
5. Boteringepoort
6. Ebbingepoort
7. Steentilpoort
8. Gardepoort (Groninger Internet Courant, 2018)
9. Kranepoort

## Facts

- Bommen Berend was the nickname because he used a lot of bombs.  
(bommen=bombs)
- Bommen Berend made a tactical mistake by overloading his artillery batteries in attempt to have a 'bigger reach'. This caused them to be unusable.
- The bad weather caused the defensive fighting positions to be filled with water.
- There was enough food in Groningen and there weren't that many civilian losses in Groningen itself.

## Celebration Elements

Traditional elements of the celebration:

- 'peerdenspul' (running horses)
- a fair
- firework in the city park (stadspark)

## Key persons

### Good side

Carl von Rabenhaupt, baron of Sucha (1602-1675). A Bohemian Hussite nobleman. Rabenhaupt was recruited by the Dutch in 1671 as colonel of his own regiment, later promoted to lieutenant general.

### Bad side

Christoph Bernhard Freiherr von Galen:

Prince-bishops Bernhard von Galen, bisschop of Münster, also 'Bommen Berend' due to his bomb tactics.

Extremely focused on getting power, prestige and converting people (back) to catholicism.

## Map Groningen 1672

This is a map of Groningen and the surrounding fortresses in 1672.

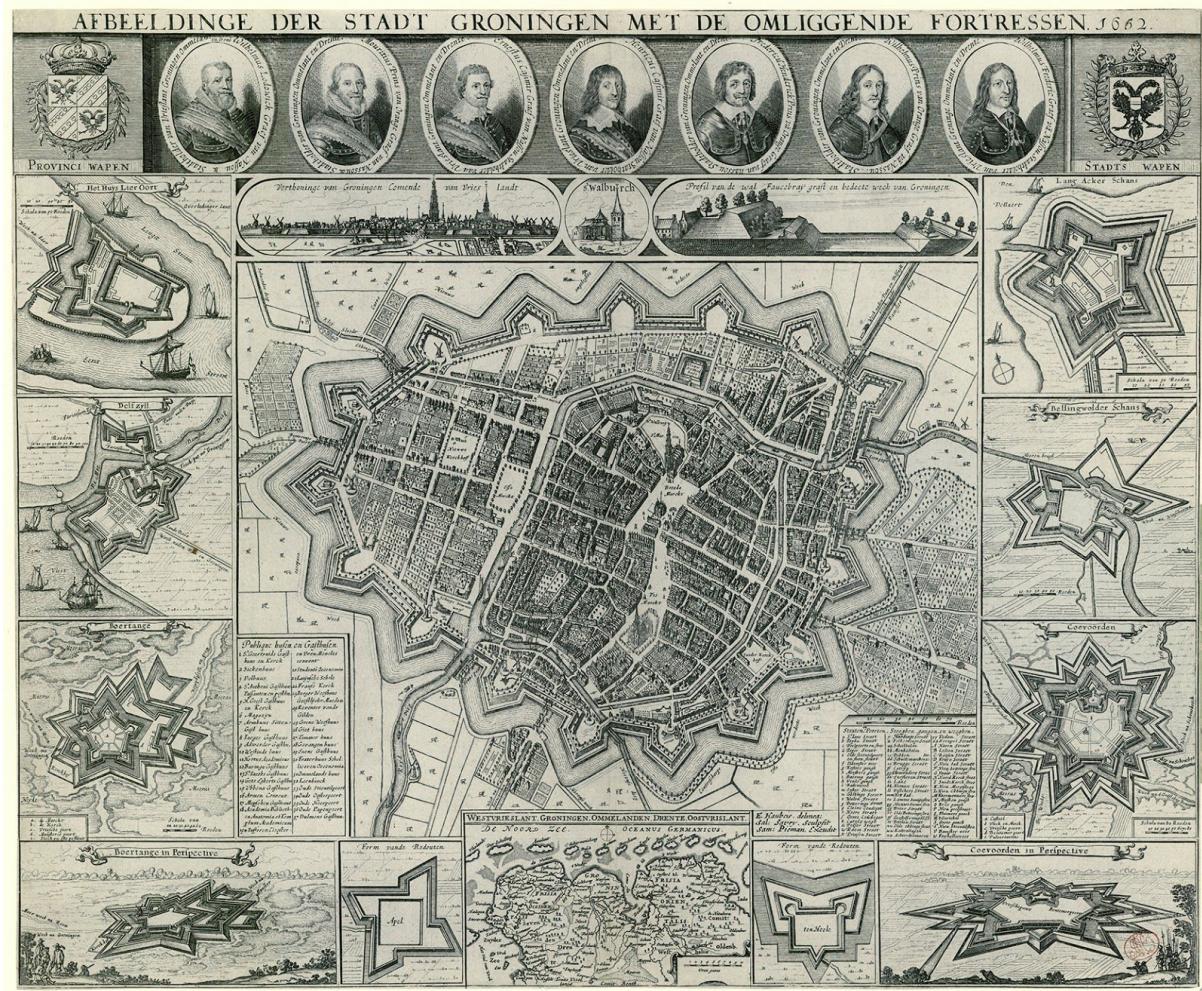


Figure 1. *Map of Groningen* (1652 and/or 1672).

## Sources

### Figures

Figure 1. S. Savery (Print maker), E. Haubois (original creator). (1652 and/or 1672). *Map of Groningen*. Retrieved on March 21, 2019, from  
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<https://hier-is-iris.nl/2018/08/28/bommen-berend-28-aug-1672-tijdvak-6-regenten-en-vorsten/>

## B. Tutorial Details & Story

**Main Objective:** introduce player to story and explain functionality

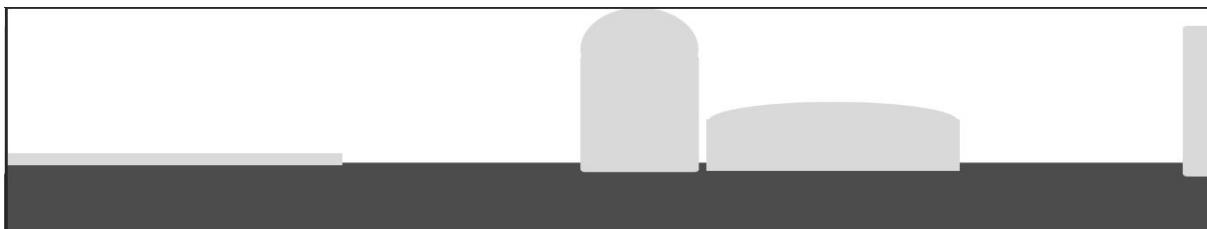
**Player:** has backpack/shoulder bag with a few things with them, so that the interface makes sense.

**NPCs:** Jacob, Jacob's sister and mother. [Jacob's uncle perhaps] Potentially an NPC for the puzzles. [we can first use Jacob as NPC for the puzzles]

**In short:** Get sent to past, get introduction kid from that time, get to Groningen

**Location map:** The first map location should be one on the edge of the map. The actual map should start at farm lands, then move onto nature, a small mill or such and then the start of groningen.

**-Temporary- sketch area grey area:**



\*This will be altered after the puzzles, so they can fit in and so we can better formulate what those exact places need to be.

The size should be 1x the height of the normal resolution but 3x the width of the normal resolution. So, if it is 1280 by 720, it should become 3840 by 720.

### Important moments:

- Introduction clips/movie/pictures
- Explanation functions
- Puzzles/minigames in the route to Groningen
- Small clips/npc interaction at the end of the tutorial part

### Short version dialogues

#### Conversation 1:

Jacob: Hey, are you alright? It must have been those soldiers...

Player: ....?

J: Hey, you, come on, there's no time to be laying about. We need to get going before the soldiers come!

We should be able to reach Groningen by nightfall, mother guesses

P: Where are we?

J: They must have hit you pretty hard. But that's fine, you'll be fine again.

We're in Drenthe right now, taking the nature route to Groningen, so it's less likely we'll encounter soldiers on our way.

[Player receives map, so map icon appears on interface]

J: Here, you can have this. Sister has another one, so it's fine. And don't worry about the date. Not that much has changed between 1665 and 1672 according to Mother, the map is still fine to use.

<map screen opens up, the current position of the player is marked and the position of groningen lights up as Jacob says "We're going here!">

**Conversation 2:**

J: Hey, are those your things on the ground?

**Conversation 3:**

J: Let's get going!

**Conversation 4:**

J: Hey... we seem to be going the wrong way?

**Conversation 5:**

J: Look! It's Groningen!

**Conversation 6:**

Uncle: Welcome stranger. Any friend of Jacob, is a friend of ours.

**Conversation 7:**

J: So where are you from?

P: I'm from Groningen.

J: You're from Groningen? Then why were you in Drenthe?

And why were you dressed like that? I have never seen clothes like that before!

P: Well... I followed someone and got here

J: Oh? But that still doesn't say anything about your clothes.

P: I'm from 2019, we dress differently there.

J: Wow! 2019? That is so cool! Look, these are the clothes we have!

**Conversation 8:**

J: Hey.. you're from the future. Do you know what the future looks like?

P: A bit.. I know what it looks like but I don't know everything about it.. I don't know how to get back home either.

J: How about this... I'll help you get back to the future, and you'll help me end this war, so we can both go back home!

P: Alright, let's both get back home!

**Long version:**

It was a bright and sunny day when Player went into their garden. The player wanted to invite the neighbor's child, called Morgan. Though the player considered Morgan as a bit strange, the player wanted to invite Morgan anyway. How was Morgan going to get used to this neighborhood, if Morgan never joined them for play? The player had seen Morgan tinkering away at some weird machine in the shed quite some times now, always declining to play with them. Who knew, maybe today would be different? At least the weather was gorgeous!

The player hopped over to the back of the garden, where the fence was lower and they could just peak through the window of the shed to see what Morgan was up to. The player reached out to knock on the window, as Morgan seemed to be immersed in his project. Just

as the player's hand touched the window a bright flash came from the machine. Shocked the player looked at it. Morgan just stepped into the bright light! What?!

Anxious about Morgan's wellbeing and curious about where Morgan could have gone, the player dashed over the fence and charged into the shed. The bright light almost looked like a mirror with the swirling colours of soap being dropped onto a water surface. Amazed by the sight, the player moved over and gently reached out to touch the odd light. As the player did, the light sucked the player in. Everything grew dark for a bit as the player began to feel rather dizzy and disorientated.

Moments later, which could easily have been hours or days later, the player heard a kind voice speak to them.

"...Hey... Are you alright?" the voice asked hesitating. "...It must have been *those soldiers*..." Slowly the player opened their eyes, taking in the new environment. The player guessed it had to be a dream. The last moment they remembered, they had been in the shed with the weird light... Not on a farmland in the middle of nowhere? And that beautiful bright and sunny weather, nothing had remained of it. Just a bleak sky with grey plumes of smoke. The air smelled like a barbecue, but the player was sure there hadn't been a barbecue in the neighborhood just now. As the player looked at the source of the voice, the player saw a young boy standing partially over him, watching him with some concern. A small smile seemed to come on the boy's face as he realized the player was conscious again.

"Hey you, come on. There's no time to be laying about, we need to get going before more soldiers come!"

Before the player had any time to ask questions, the boy helped the player up on his feet and dragged him along to what seemed to be his older sister and mother, who had quite a bit of luggage on them. "We should be able to reach Groningen by nightfall, mother guesses" the boy told him.

As the player tagged along with the small family, they wondered curiously "Where are we?". The question surprised the boy a bit, but he recovered quickly. "They must've hit you pretty hard.." the boy guessed. "But that's fine. You'll be fine again" the boy said, patting the player's shoulder. "We're in Drenthe right now. We're taking the nature route to Groningen, so it's less likely we'll encounter soldiers on our way." The boy pulled a map out of the shoulder bag he had on him, giving it to the player. "Here, you can have this. Sister has another one, so it's fine." the boy stated, as he opened up the map for the player and pointed out their direction.

#### [ hidden object puzzle]

Curiously the player observed it. Not only did this look like one of those maps from the museum, or perhaps even those treasure maps of television, it also said something very odd: 1665.

"1665?" the player asked. It seemed to be the year of the map.

"Oh, yea.. Though it's 1672, the map is still pretty accurate, so don't worry about it" the boy answered.

The idea that the player had time-travelled felt rather odd. Though it was a marvellous idea that such would be possible, it felt like this could not be real. The differences were obvious, yet it felt more logical that he had hit his head and this was just a dream.

[ The story part for the puzzles/minigames will come after the creation of them. They will fill in the hole of meeting and arriving in Groningen. These puzzles/minigames will help explain

the functionality of the game. Jacob will be near to help explain the puzzles/minigames at all of these as this is the tutorial part]

**[ puzzle city gate]**

As time passed, the boy had introduced himself as Jacob, and they had arrived in Groningen in the evening. In Groningen they managed to take refuge in the house of Jacob's uncle. Though it was a small house, it was big enough for them all to fit. Jacob's uncle lived there alone, which meant that he had a spare room and a small attic available for his guests. Jacob and the player ended up in the small attic room, as the family was more than willing to provide the player with a place to stay as well. In these rough times, it was best to stay together, Jacob's family believed.

**[clothing puzzle]**

While lying on bed, Jacob couldn't contain his curiosity about the player anymore.

"So where are you from?" Jacob asked softly, as they were supposed to be sleeping.

"I'm from Groningen" the player answered.

"You're from Groningen? Then why were you in Drenthe? And why were you dressed like that? I haven't seen anyone in those kinds of clothes before" Jacob mentioned.

The player remained silent for a moment, wondering if they should be honest about it or not. It was a rather weird story, honestly.

"Well.. I followed someone and got here." the player tried.

"Oh? But that still doesn't say anything about your clothes" the boy remarked.

"Well... I'm actually from 2019.. Morgan, my neighbor made a machine and it got me here.

I'm not sure why, but I travelled back in time" the player stated, watching Jacob closely.

A moment Jacob remained quiet as he was visibly thinking about this.

"Wow! That is so cool! So you know how this all goes? You know what the future will be like?" Jacob wondered.

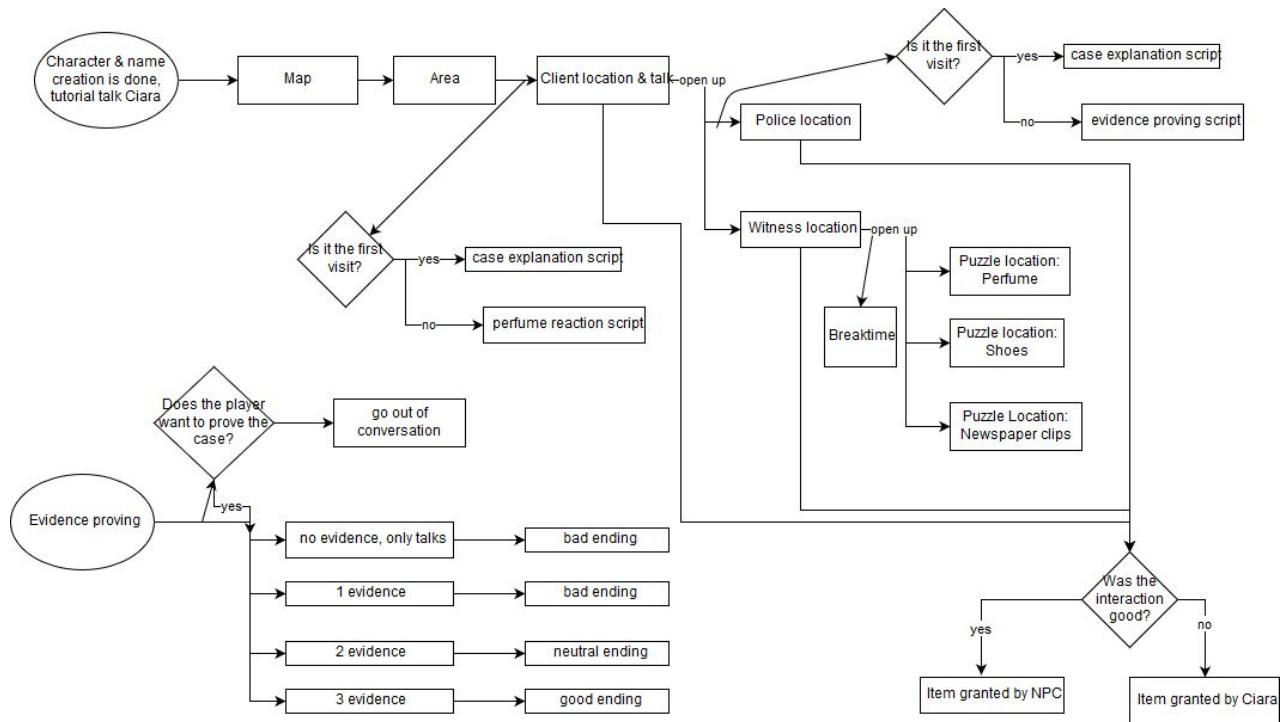
"..A bit. I mean, I know what the future looks like.. but I don't know everything about the future.. Honestly.. I just want to get back to my own time.." the player admitted.

"..Yea... I get that... I want this war to be over so I can go back home... and so dad will be back too.." Jacob sighed. "I know! How about this? I will help you get back to the future, if you help me stop this war" Jacob suggested in a fit of enthusiasm. It seemed Jacob had great faith in the abilities and knowledge of the player.

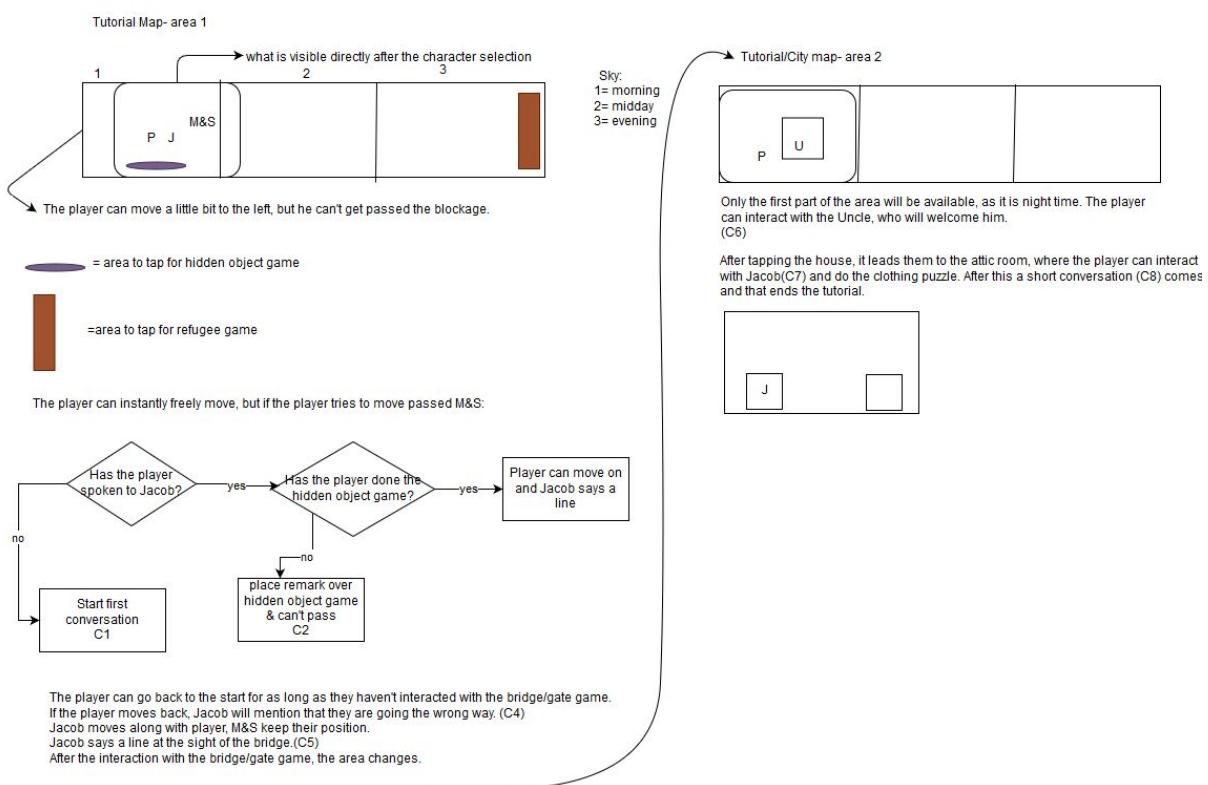
"Okay" the player answered. "Let's get us both back home!" the player agreed, making a pinky swear with Jacob.

[this marks the end of the tutorial. As the morning begins, the first spot on the map in Groningen will be available for the player to go to and Jacob will suggest the player that they'd look around to see if they can help people, so that those people might help them in return]

## C. Tutorial Level Flowchart

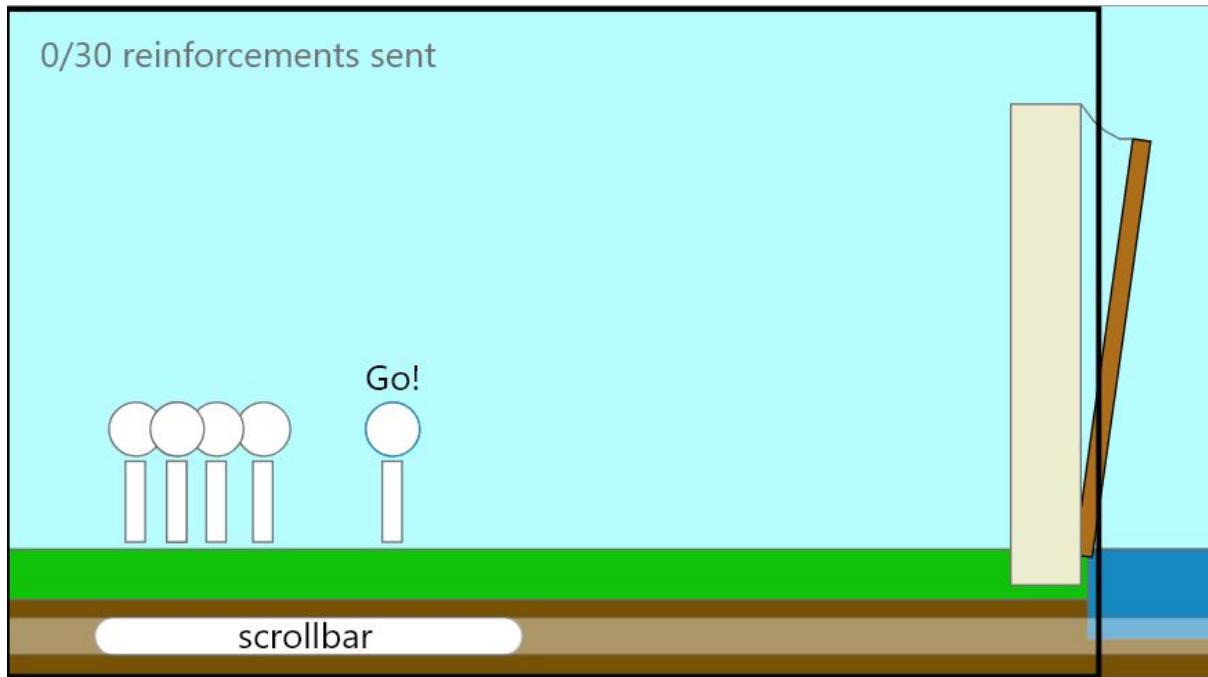


After initial introduction and character selection:



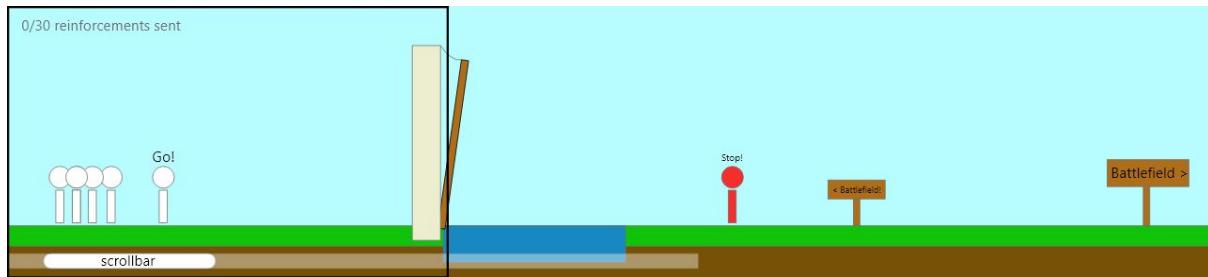
## D. Puzzle ideas

### Military management puzzle



The town is getting sieged and the grounds troops need to reunite on the battlefield. The neighbor however is sabotaging the armies' arrival at the battlefield, and the player needs to make sure the troops get there properly.

This stretches out over an entire battlefield and the player can scroll from left to right. Left is where the troops run in, and right is where they need to go. On the way there are hindrances to the troops and the player needs to make sure they get there in time.



Example of the entire battlefield (probably shorter than final version), with the black bars indicating what the player can see. The purpose of the game is to manage multiple aspects at once, as the soldiers will be at different points of the track at once. Score could depend on how many soldiers the player managed to get to the proper site.

#### How it'd control:

The player scrolls from left to right and back using their finger to drag the screen. The player can hold and drag at any place on the screen to move it, not specifically the bottom. The

player interacts with the objects by clicking on them. This will open a small pop up screen for the player revealing some choices (e.g “open” and “close” for a gate).

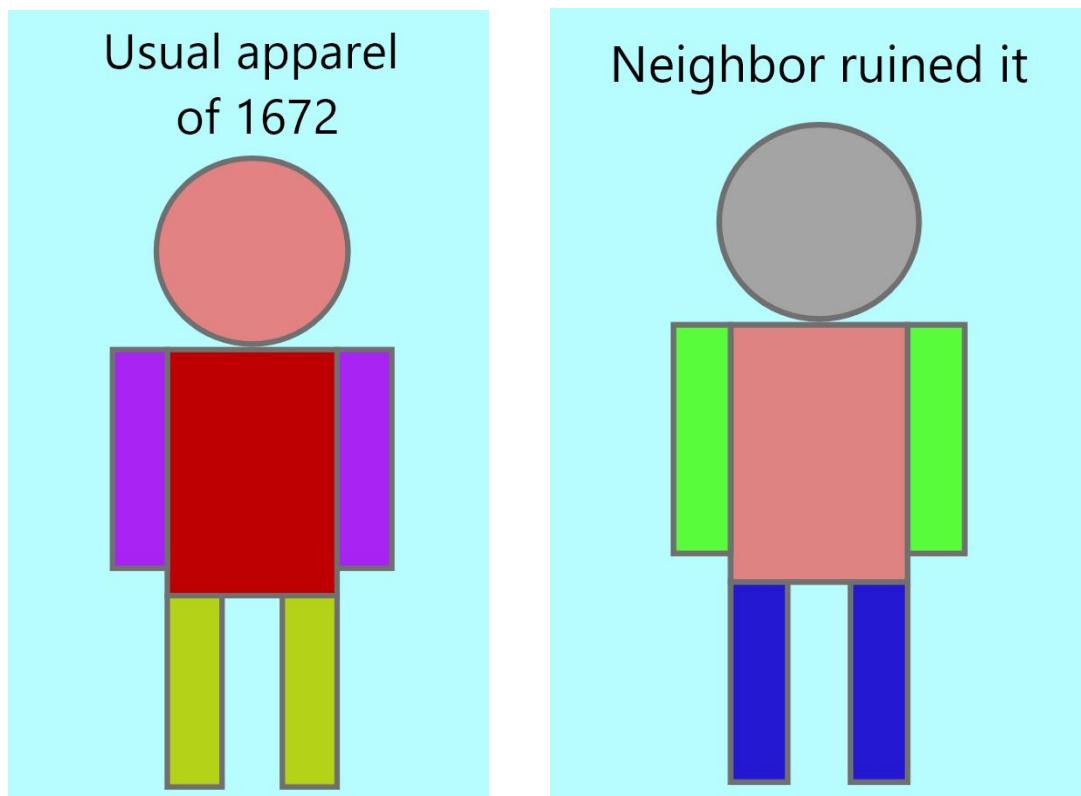
Over time, objects will change from status so the player has to constantly manage the objects to make sure they’re still performing the correct action (e.g the gate closes automatically after a while).

The player is informed about amount of people that have passed through the level at the top left of the screen. The game timer is at the top of the screen as well, either center or right.

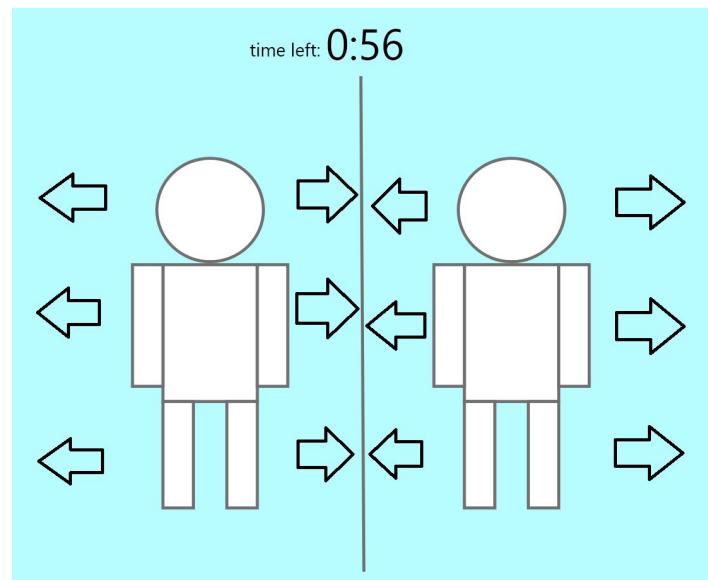
The game ends when the time is up or the goal is reached. If players don’t fully complete the goal they could still end up gaining points based on how many characters passed through the level. If they do complete the goal they get full points.

Maybe a gate game here? Trying to measure how much weight is necessary to close the gate?

### Clothing puzzle



*Player gets to see what people of the time usual wore, typical style of clothing. Then the player sees how the neighbour ruined it and gets to the play state.*



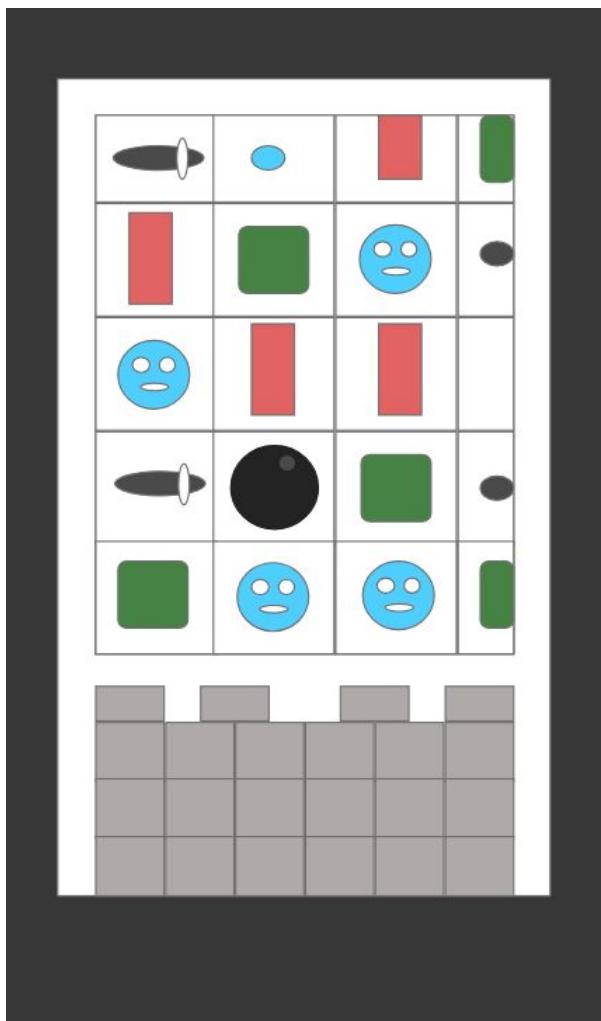
*Clothing puzzle concept.*



*Clothing puzzle in-game screen.*

A short “puzzle” game where the player gets familiar with the clothing of that time. The artists can choose certain looks from certain time periods, like 70s, 80s or medieval for example. To make it interesting there should be many styles to choose from. Even if the player doesn't get everything correctly, they could get points based on how many clothes they did pick correctly.

## Bomb puzzle



The Bishop of Münster was and is often called Bommen Berend due to his eagerness to use cannons with bombs. His main tactic was to bomb places until people would surrender.

### *Possible lay-out for the bomb game*

“Bejewelled” style game where the player must prevent the bombs from hitting the wall by sliding the tiles correctly. The other items are typical imagery from that time period, like horses and family weapons and such. If you let too many bombs hit the wall, the city will be pillaged and it will all be your fault. I guess that might be a little much for a 10 y/o to bear, but they’ll get over it.

### **How it'd control:**

The player has a grid in front of them with different kinds of tiles. The player can move the tiles by dragging them by their finger. If the player lines up three or more they “break” those tiles, causing every tile above that to fall down. This rewards the player with points, but runs the risk of making the bomb hit the wall. When certain tiles break next to the bomb, they remove the bomb from the map.

The game is completed when the player has achieved enough points or when too many bombs hit the wall.

## Endless Runner to Groningen

The player has to move up and down to evade trees, lakes, enemy soldiers, fires and such to get to Groningen safely. They do so by swiping which way they want to go. It would be a three-lane endless runner. Potentially easier played from top down (so vertical) than from left to right (horizontal). The player would have to survive for a certain amount of time to beat the game. The player would have 3 lives, if they have no more lives left, they would fail the minigame and have to redo it.

## The Right Way

The player has to turn and twist connections to form a path to the end destination. In many hidden object games this is done with pipes that need to connect, however, in our case it would be more suitable to do so with paths on a map. A bit as if the player is masterminding the best tactic.

## **Get My Stuff**

A hidden object game just after the introduction video, so the player scavenges the ground to see if any of his stuff dropped on the floor before leaving. They could have to get their backpack, pen, diary, find the schematics of the time machine, a mirror and some trivial things? (basically, find some fluff and the things of the interface) No maximum time, but a score based upon the time and amount of clicks taken. Hint button present, which recharges every 20/30 seconds.

## **Close the Gate**

A game in which you drag and drop weights to get the perfect amount of balance to get the door up without putting too much weight on the chains. The player would tap the item and then the location to get it there, or tap-drag the item to the right location. It's about the logic of the maths behind it.

Alternatively, it could be that the gate gets closed by cogwheels but someone has sabotaged it, so the player needs to put the right cogwheels in the right position for the mechanism to work again. This would have the same tap-mechanics.

## E. Style Guide

### Overall style & inspiration

The overall look of Morgan Reist Door De Tijd is inspired by games such as Spy Fox, Putt-Putt, Pyjama Sam, Paper Mario & other children media.

The style will be “simple”, although further specifications for each aspect can be found in their dedicated sections. The game will be in 2D, with a parallax effect to add the illusion of depth to the background.

The setting of the game is both historical and fantasy: most of the game is set in Groningen in 1672, but in an alternate fantasy reality where everyone is an animal.

For further historical details about the setting, a [research document](#) has been set up to contain the information necessary.

### Style

Characters & environment are seen in a top-down view. The character can move left and right and (with a lot less freedom) up and down the walkable path.

### Environments

To keep things simple and readable on mobile devices, we are going for an artstyle with minimal detailing. Characters, items and background will consist of line-art + flat color + 1 layer of cell shading. We will aim to keep the point-sizes of the line-art consistent throughout our project.



Always make it clear where you can and cannot go, for this there will be a clearly defined walkable path:



The target platform for this game consists of mobile devices such as phones and tablets, with resolution 1280x720 (2560x1440).

The main light source in open areas comes from the top right, therefore the shadows fall on the bottom left. This applies at all times save exceptions (for example, for dramatic reasons). The colours used will be generally browns, reds, yellows and contrasting colours. Colours have been chosen both inspired from paintings, reenactments from Bommen Berend, and due to their warmth.

Colours used will be chosen taking into account readability of the interface and scenes to all viewers, including colour blind people. Following these [guidelines](#):

1. Use both colours and symbols
2. Minimalistic design
3. Patterns and textures to show contrast (when applicable)
4. Contrast with colours and hues
5. Avoid bad colour combos (red/green, green/brown, blue/purple, green/blue, light green/yellow, blue/gray, green/gray, green/black)

## Character design

Lighting and shading for every character remains consistent with the background (light: top-right, shadow: bottom-left).

### Main Character

Have a standing sprite in the scene and a dialogue sprite for dialogues. The MC can move left, right, up and down but the sprite only shows left and right movement. The sprite for the dialogues appears to be facing right and is slightly bigger and more detailed than the walking sprite. The dialogue sprite can change expression. The MC is customizable.



*Example of available options for character customization*

### Side Characters

Like the main character, the NPCs have a standing sprite in the scene and a dialogue sprite for dialogues, that looks to the left during dialogues. NPCs generally stand still. This will not apply to Jacob, who might accompany the MC. Character may in the future be able to change expression during the dialogue (show surprise, shock, anger,...)

### Items, as they appear in the inventory

The style remains consistent with the characters and settings. The same light and shading applies. The size used so far was 200x200px, which takes into account both the size of the item itself and a transparent portion left for the background.

## Background

### Initial scene

An animation of some sort for the introduction to the game to explain the premise of the story.

Other backgrounds needed will be: a map (interactive via mission points), described further ahead, and the settings of each scenes. Each setting is longer than the camera view and therefore the player will have to swipe left and right to explore the scenes. A more specific description will be added when the story is more defined.

## UI

### Scene view



*Initial look of the prototype*



An example of a background from the tutorial with a character reference for size.



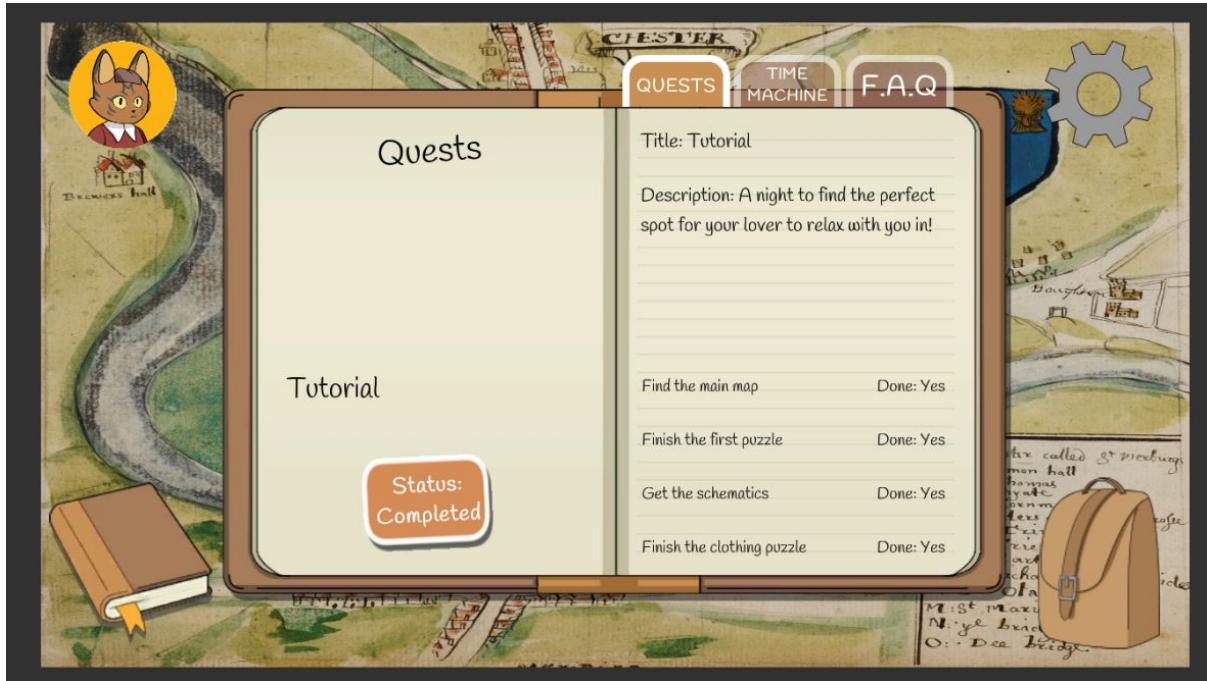
The map view with a placeholder map..



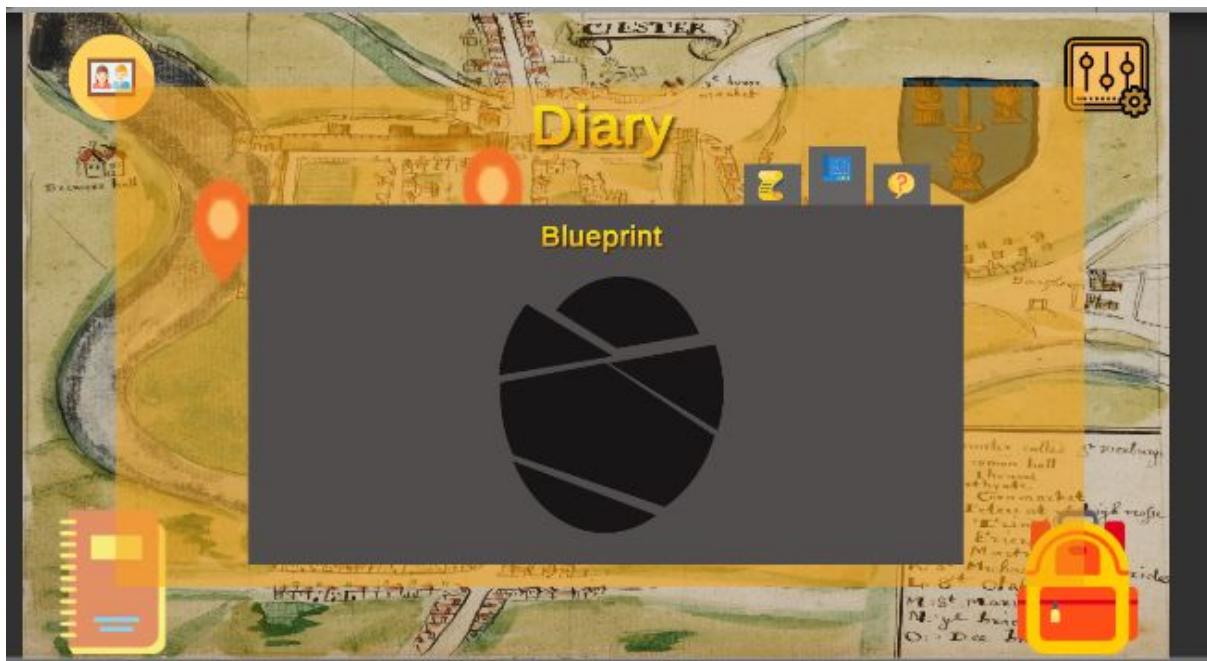
Diary set up on-screen prototype.



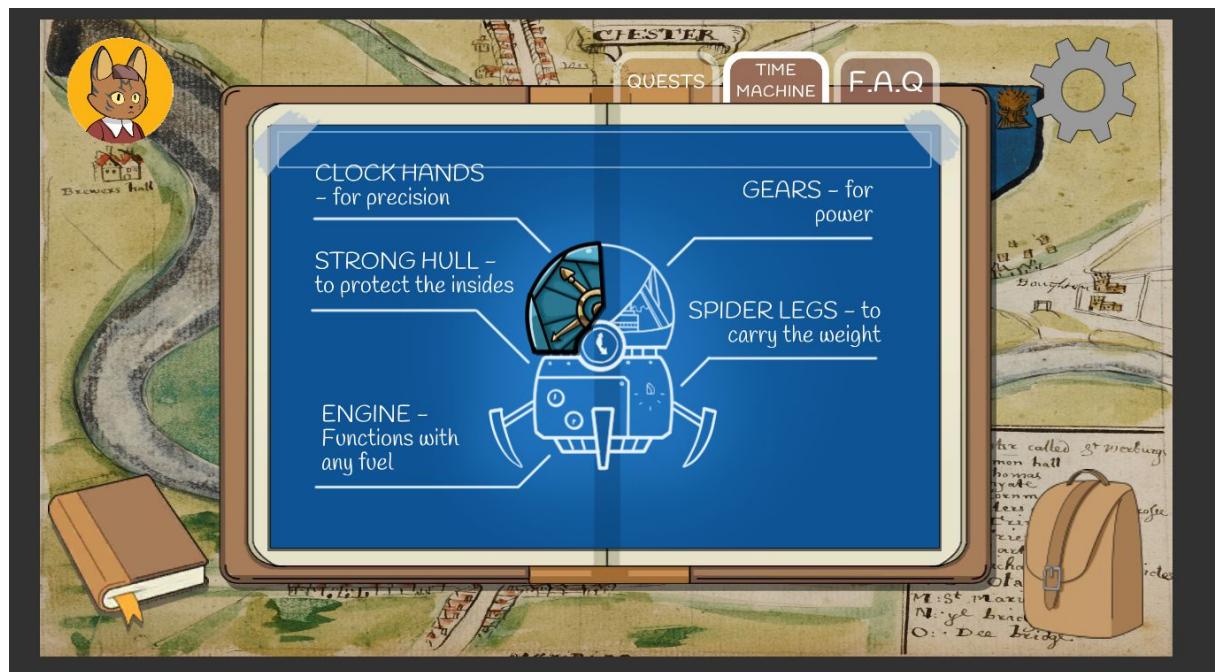
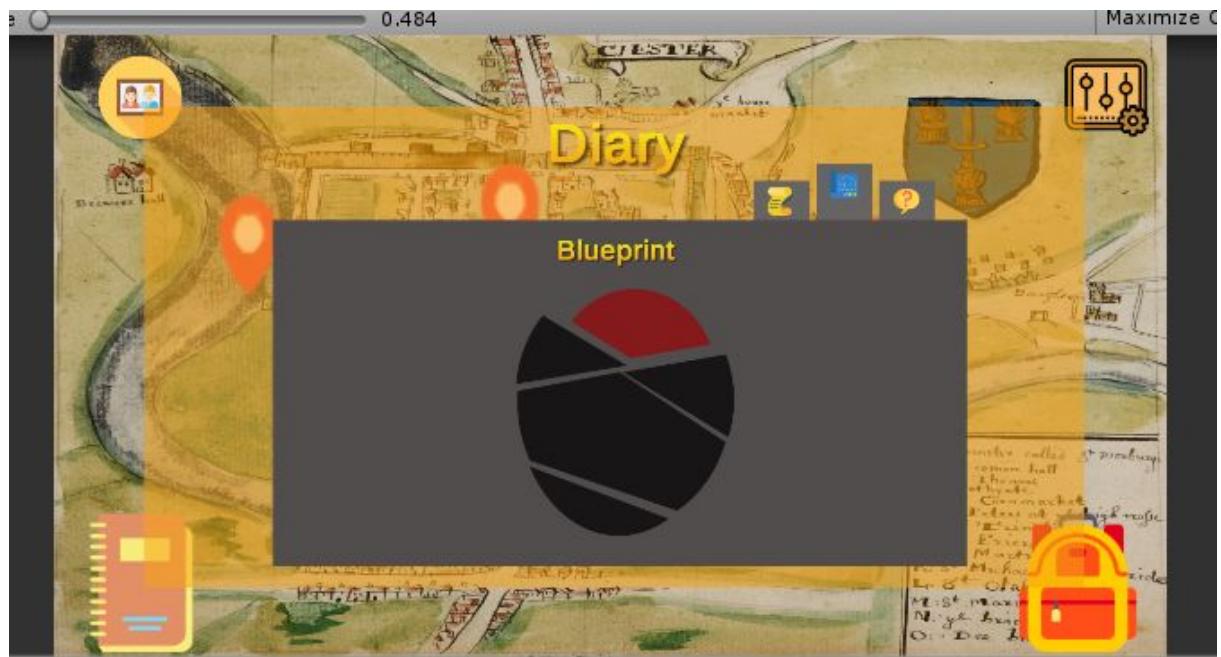
Diary interface set-up.



Quest completed panel.



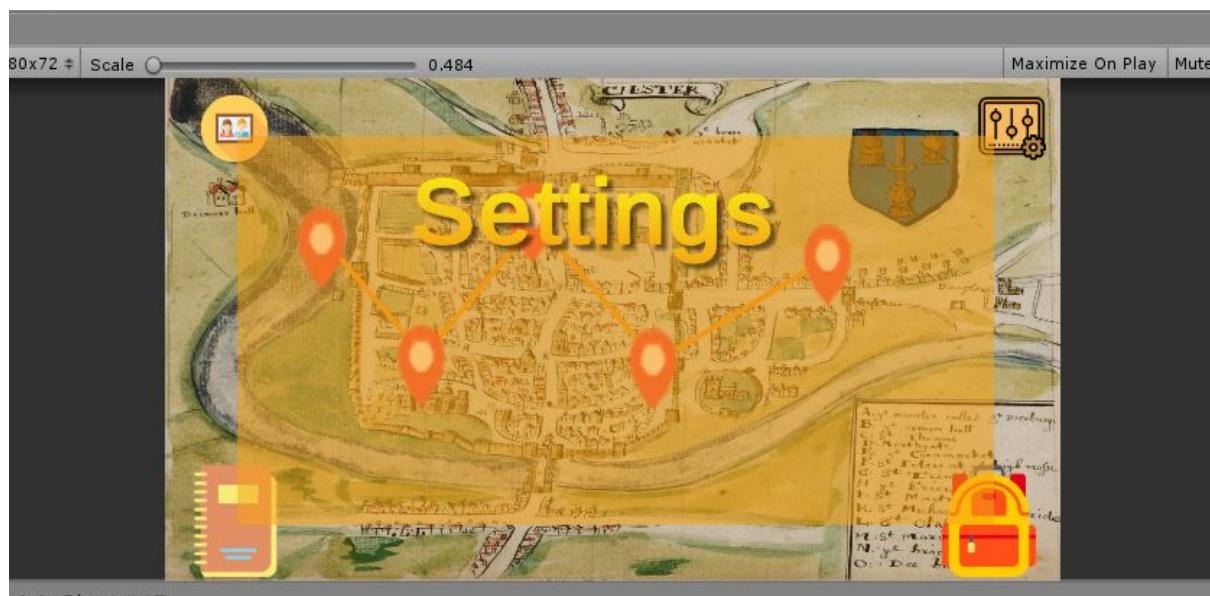
Blueprint prototype.



*Final blueprint interface.*



*Inventory prototype*



Settings interface prototype



Initial prototype of the customization page



*The prototype of the customization page*

## Puzzles

Puzzle interfaces may vary according to type of mini game or puzzle.

## Panels

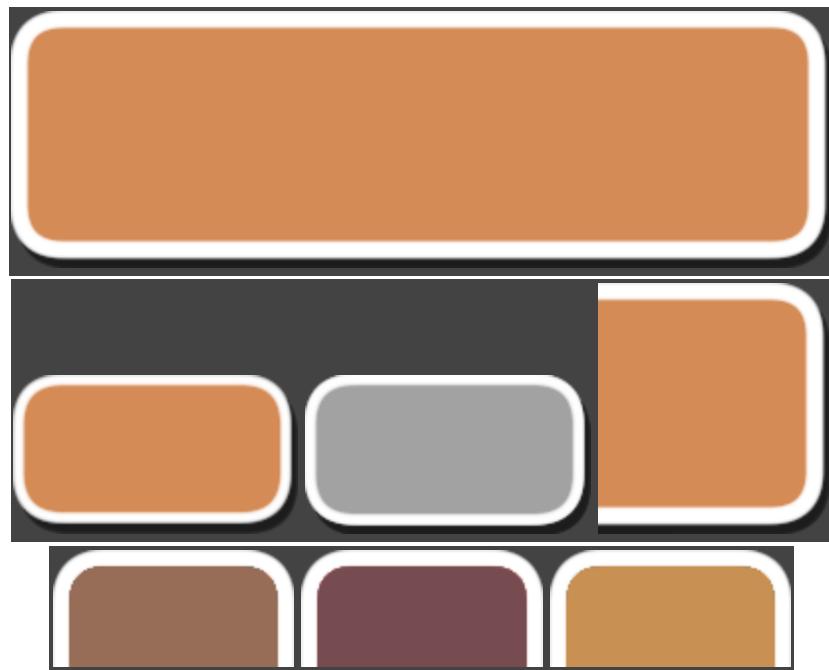
Panels will consist out of 9 sliced UI-background elements. Placed on top of the background image, text and icons can be placed.

Settings panel background:



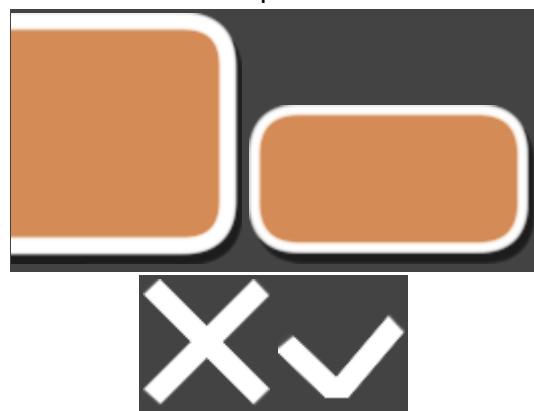
## Buttons

Buttons should be reusable. This means we will apply the 9 slice technique.



*Buttons*

The decline and confirm buttons and their respective icons.



## Icons

Diary icon:



Settings icon:



Bag icon:

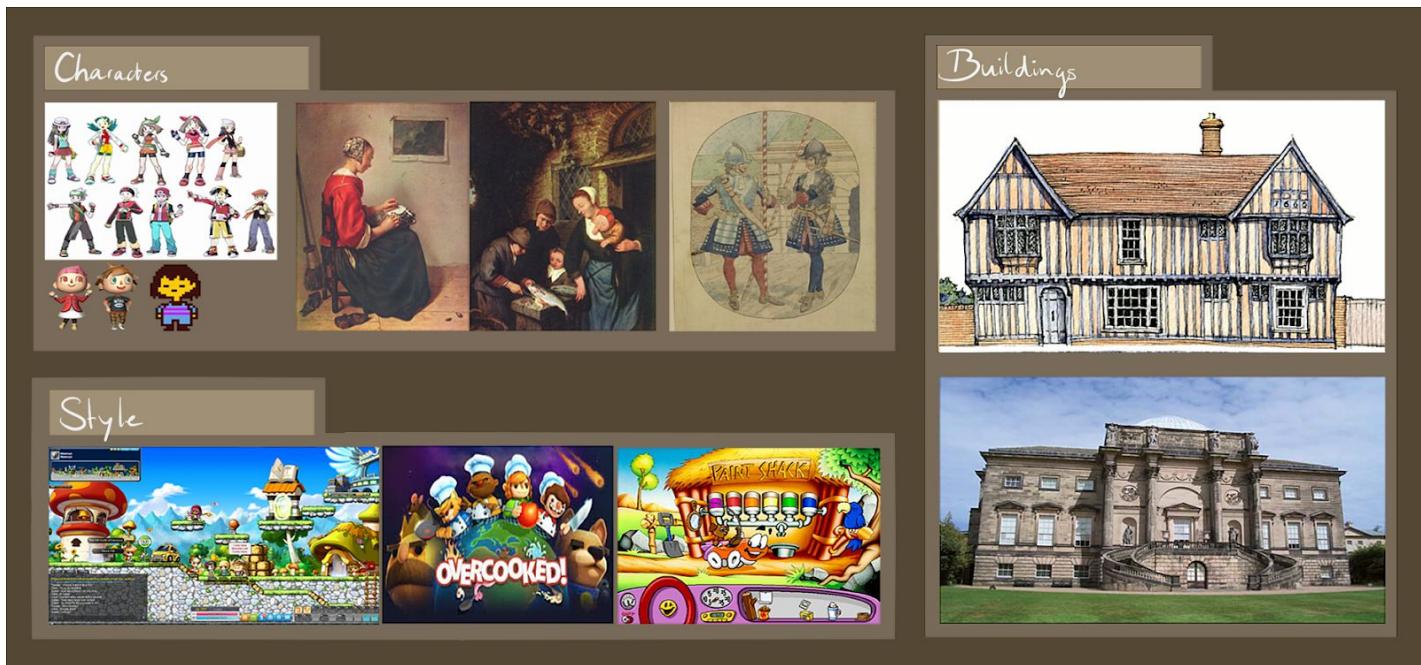


## Font

<https://fonts.google.com/specimen/Handlee>

Some interface elements might later be replaced with custom fonts (for example, for titles of interfaces such as the diary quest page, it would look cuter and more relatable if the handwriting looked like it was made of pencils or crayons)

## F. Moodboard



## G. Planning

# MORGAN & BOMMEN BEREND - Planning

<b>Sprint stand ups:</b>		Monday, Wednesday, Friday					
<b>Group meetings:</b>		Twice a week			Extra meetings as needed		
<b>Goal for demo:</b>		Tutorial, level 1			<b>Goal for next block:</b>	Remaining levels, refining	
Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
Case choices	Gate 1	Research on target audience(s) & setting requirements	Meeting with clients (KVVV, O2G2)	Gate 2	refining tutorial, where needed:	playtesting with target audience	Gate 3
WhatsApp, Discord, Drive set up	Create Game design document	Market analysis	Attend lecture on history of Groningen	Implementing the tutorial level	fix bugs	implementing level 1:	Business pitch
Set up contract	Create style guide and moodboard	History research (fashion, buildings, weapons, history of the siege)	Interface backgrounds	MVP missing art assets	character animation (idle, walking), missing sprites	puzzles (coding)	iterate on design on feedback/research
Research	Refactor game files from prototype	Setting the goal of our game	Interface buttons & icons	MVP updated art assets (after feedback from Niek)	refine background and props	puzzles (art)	refining level 1
Pitch preparation	Team canvas	Value proposition(s) and business model	Art assets - NPCs	MVP document	complete interfaces	npcs - sprites	fix bugs
Concept art	Create initial icons for testing menus and initial look	Finalize game concept	Art assets - backgrounds 3D	Updated style guide	defining level 1 story, puzzles, and assets needed	backgrounds	character animation (additional, if needed)
Prototype			Updated style guide		Setting up playtesting sessions	props	refine background and props
GDD, game flow and wireframes			All technical information for tutorial puzzles complete		Implement sound	defining level 2,3,4 story, puzzles and initial list of assets needed	preparation for the demo (what will be shown, preparation of concept art & assets slides, marketing material (mascots & shit))
			Last story tweaks, dialogue control		Translate tutorial and interfaces in Dutch	Business pitch preparation	
						Intro animation	