Group Project in Interaction Design Project course

My role: Designer and Developer

## Task

Save the city from radiation is a game developed for an exhibition at the science center in Gothenburg called Universeum. The exhibition had the theme "Showing the invisible".

The target group for the game is teenagers age 13-16 years-old and the aim is to learn about radioactivity, both the different types of radiation and which materials are blocking which type of radiation.

## Core Gameplay

The game consists of five levels and the goal of the game is to, by dragging and dropping materials, block radiation before it reaches the city surrounding the radioactive source. If the radiation reaches the city limits it is game over and the player can start from level one again.
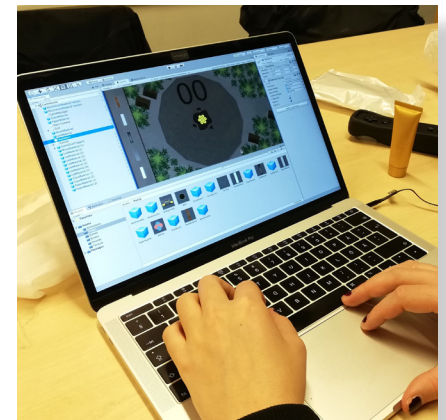
During the game, the player only has a set amount of materials that will disappear if used. Therefore, the player needs to be strategic and save the thicker materials for the more powerful radiation.

## Tools used

– Unity
– Adobe Illustrator

## What I did

– Programming
– Sketching
– Gameplay Design
– User Testing
– Graphic Design (Radiation)

# Design Process
## Ideation

**Initial brainstorming – generating the first three ideas**
The theme of the exhibition was "Showing the invisible", so to come up with an idea we brainstormed invisible things. From all these words we chose three of them that we found most interesting. For each of these three topics, we did mind-maps where everything we could think of about that topic was added. Then, for each topic, we did a Crazy 8, and from each Crazy 8, we chose one idea to present for the whole class to get feedback.

**Develop ideas more**
Skewing [1] was used to develop the ideas further by using the framework "Designing Mobile Experiences for Collocated Interaction".

**Choose one idea and develop it**
We then had a technical supervision session where we talked about how we could realize these three ideas. After that supervision, we decided on the idea that would later become "Save the city from Radiation". But at that point, it was an electronic table where the radiation was supposed to be shown with LED lights. We later went with a game that was controlled with a Wii-mote since the visualization of the radiation would be more clear with a digital representation.
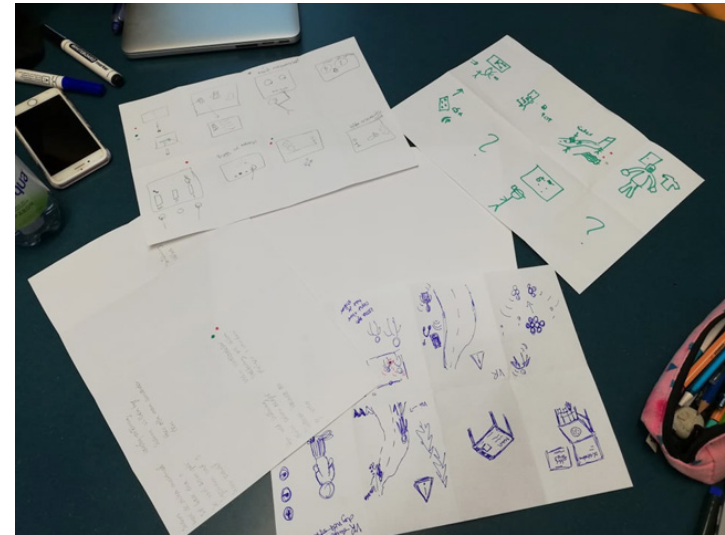

Crazy 8's sketches
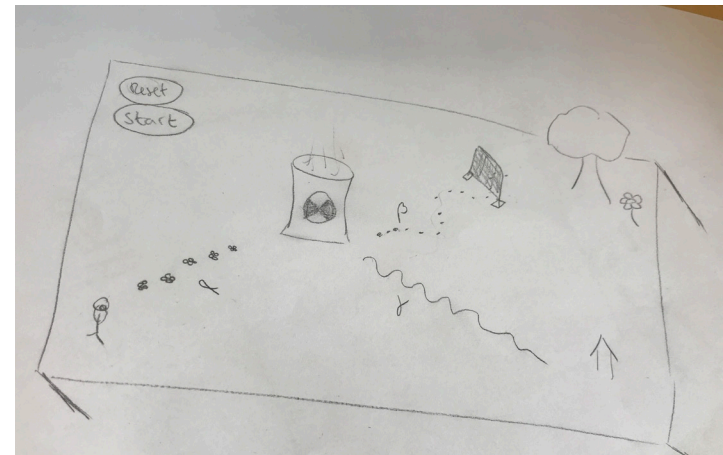

Sketch of the initial idea of "Save the city from radiation"

[1]Lundgren, S., Fischer, J-E., Reeves, S., Torgersson, O. 2015. Designing Mobile Experiences for Collocated Interaction. In Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing (CSCW '15). ACM, New York, NY, USA, 496–507. DOI: http://dx.doi.org/10.1145/2675133.2675171

## User Research

To find out how much our target users would know about radiation, we researched the study plan for students ages 13–16 years. We found out that the students will learn some basic skills about the types of radiations, but not what they can penetrate. Therefore we thought our idea would be on a suitable level for our target group.

## Prototyping

A paper prototype was made to be able to test our concept and the rules we developed.
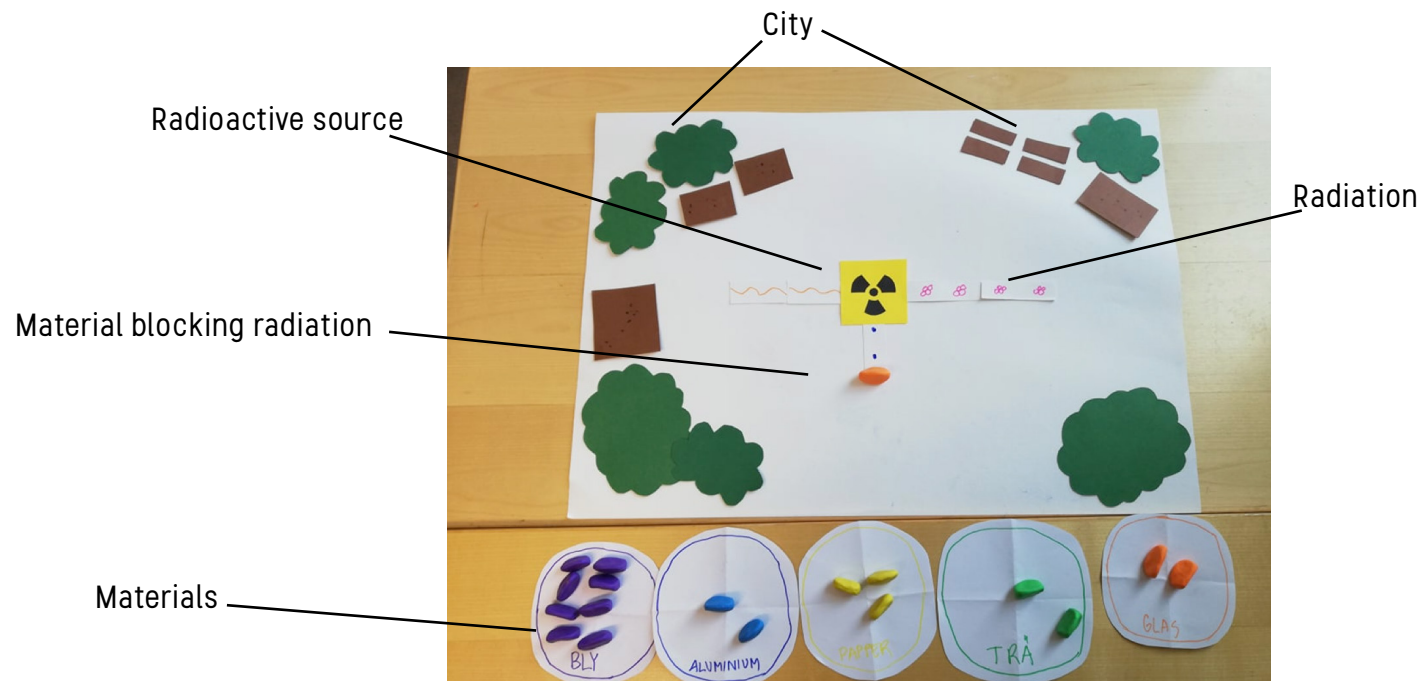
# User Testing

## Test on classmates
The paper prototype was first tested on classmates in the same course. These tests aimed to see if the concept were understandable and our gameplay worked. The participants tried the prototype and after a few questions were asked.

## Test with the target group
A user test with the target group at Universeum was also conducted. At this test, a group of 3–4 teenagers tested the paper prototype and afterward a few questions were asked. After the questions, the participants could try the first level of the digital game.

In total 5 groups tested our prototype with an overall good response to our gameplay. They gave some useful feedback about the digital game, for example, to have a countdown before the radiation started to spread. These changes were implemented after the user tests.
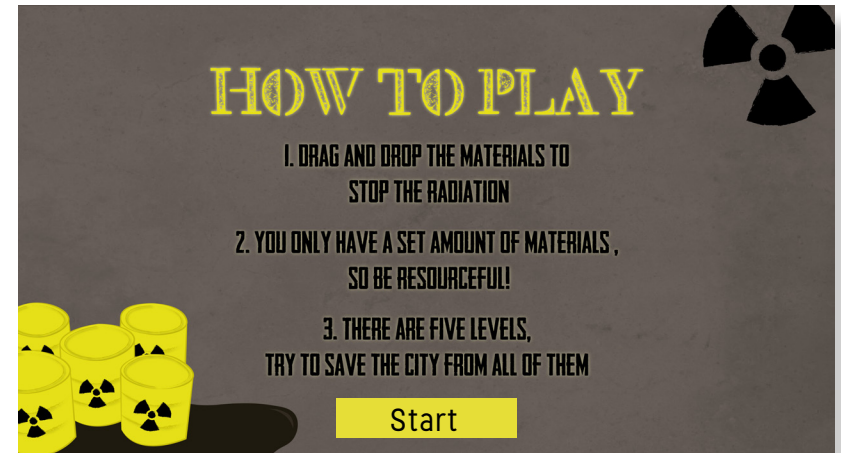
# Final Design

The start page where the user can start the game or see instructions for how to play the game.



The how to play screen.



Between each level, a splash screen was implemented to show which level the user was on and what new element the level introduced.



The game screen.

# Look and Feel of Final Design

We wanted the design to look a little bit rustic, mysterious and dark to show the effect of radiation. The aim was to make nature look abandoned and the radiation source stands out together with the buttons. To make them stand out we made them bright yellow so that it also can be associated with the radiation warning symbol, which is also included in several places.

# Key Takeaways

- Target group not present at Universeum
- Too complex for younger children
- Visitors do not spend a lot of time at each exhibition
- The game needs to be easier to understand
- Not a lot of people read the "How to play"
- The game was too fast, the radiation should spread slower

# Exhibition Set-up



Information posters

Game screen

Mouse and Wii-mote to control game