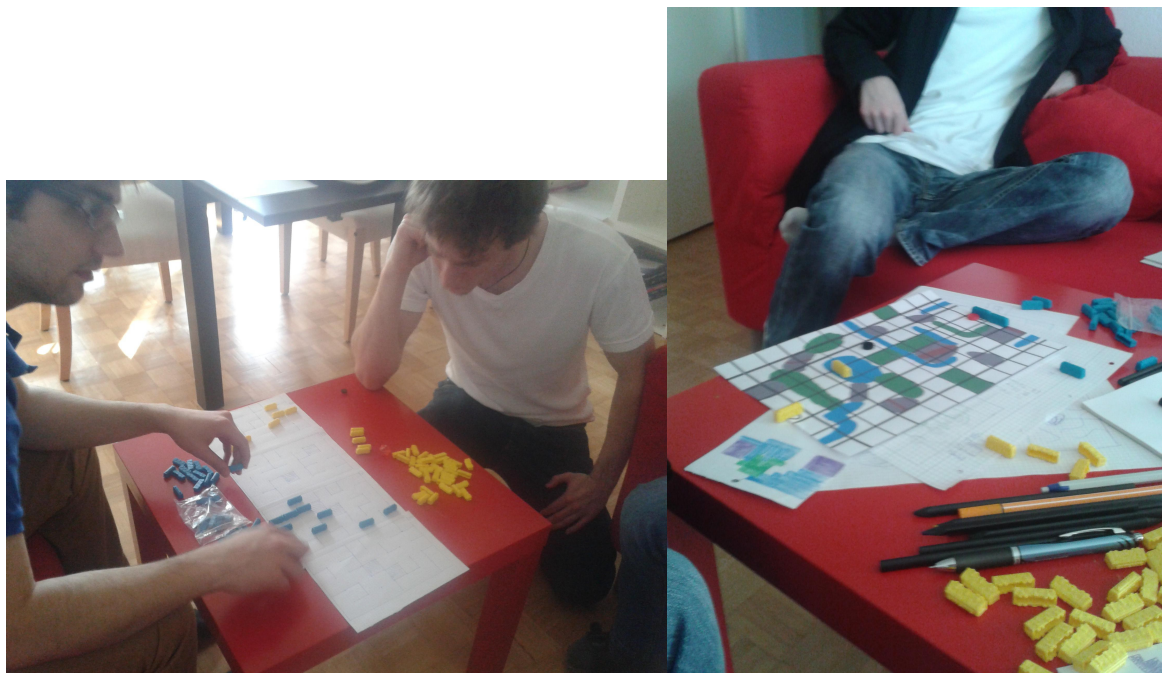


Prototype

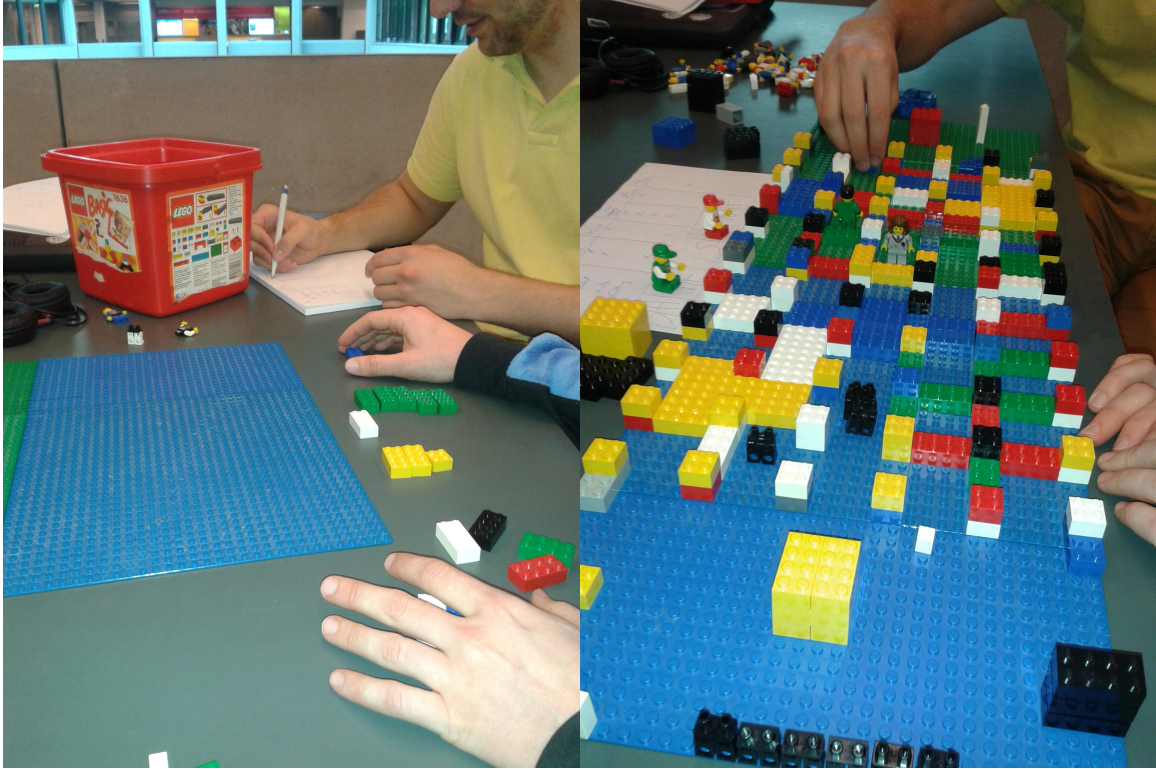
First approach: Pen and Paper

Our first approach for the physical prototype was to play on hand drawn maps with some sort of toy bricks as alternative to worms. Quite quickly we switched to printouts of photoshopped game maps since it was hard to imagine the terrain and the corresponding walking paths in the different seasons.



Second approach: Legos

We realized soon that for our dynamic map Legos would suit perfectly. With the Legos we can easily represent the map of our game. The dynamic parts can be simulated by simply replacing the legos. For worms we decided to use the legs of the Lego-men. For the energy of the player's we use black lego bricks. As the player flags we use complete Lego-men (with upper body).



We defined the following playing rules for our prototype:

Lego Prototype Playing Rules:

The game is turn-based. Each player acts after the other. At the begin of the player's round, the player receives 1 Energy. The player can then place his or her flag somewhere on the map. Then the worms are moved towards the player's flag. Additionally a worm spawns on the player's side of the map. Furthermore the player can now decide if he or she wants to change the season or the terrain. (both can be done at the same time if enough energy is available)
It is not possible to change the terrain with worms on it.

Energy

Player receives 1 energy per turn.

Player actions

- Change season. Energy costs: 6 (+X extra energy if the season on this side had just been changed before. $X = \max(5 - \text{number of turns since the last change on this side}, 0)$)
- Change terrain tile. Energy costs: 3
(Changed terrain tile can not be changed again for 3 rounds)
- Place flag.

Tiles

(A tile is a 4x4 region on the map that is covered by the (2x2) blocks of size 2.)

Water (blue): Accessible in winter

Forest (green): Not accessible in summer and spring
Desert (yellow): Not accessible in summer
Mountain (white): Never accessible
Mountain path (red): Not accessible in winter

Seasons

Winter
Spring
Summer
Fall

The seasons of both sides of the map change automatically all 10 turns. If a season was changed by a player, the counter for that side is reset and it takes again 10 turns until it would change automatically to the next season.

The seasons change naturally in the following order: spring -> summer -> fall -> winter

Worms

Walk shortest possible path to the flag.

Spawnintervall: 4 Runden

The worms spawn at one of the five entries, starting with the first entrance. In the next round the next worm spawns on the next entrance. ($\text{Entrance} = \text{Turn} \% 5 + 1$)

Goal

Get a single worm to the end of the other side.

Consequences

When we played our prototype with the previously defined rules, we realized that it was far too complicated. It was too hard to predict what was going to happen next and it difficult to see what effect a change of a season would imply or how it would affect the worms.

Furthermore there were imbalances in the seasons. So for example the players realized soon that the summer was an absolutely blocking season. In contrast most paths were open in winter. There were also some “dead regions” on the map where no traversal was ever possible.

Because of the player’s lack of understanding of the game, it was not really possible to do a strategic decision and therefore it was not fun to play.

As a consequence we realized that we had to strongly simplify the game presentation and complexity and noted that this will also be important in the final real game.

We came up with a third prototype approach.

Third approach: Simplified, playable board game

The goal of this approach was to have a playable and enjoyable version of our game in order to test the core gameplay.

To improve the clarity of the game we homogenized the colors of the game elements. The representation of the playing grid is now simulated by only white Legos on one side and only

black Legos on the other side. Like this they do not confuse the player since they are obviously not part of the terrain.

The second step was to increase the level of abstraction even more. The seasons are now not winter, fall, spring and summer anymore but simply blue, green, red and yellow.

A terrain is now only blocking if it has the same color as the season. Like this, a player does not have to think anymore that the blue Legos are water and that therefore it is only accessible in winter since in winter water is frozen. Instead the player immediately sees if it is blocking or not. This aspect will also be very important in the digital game. The player should be able to recognize the optimal path for his worms easily. (Exact rules of the game are given in the next chapter.)

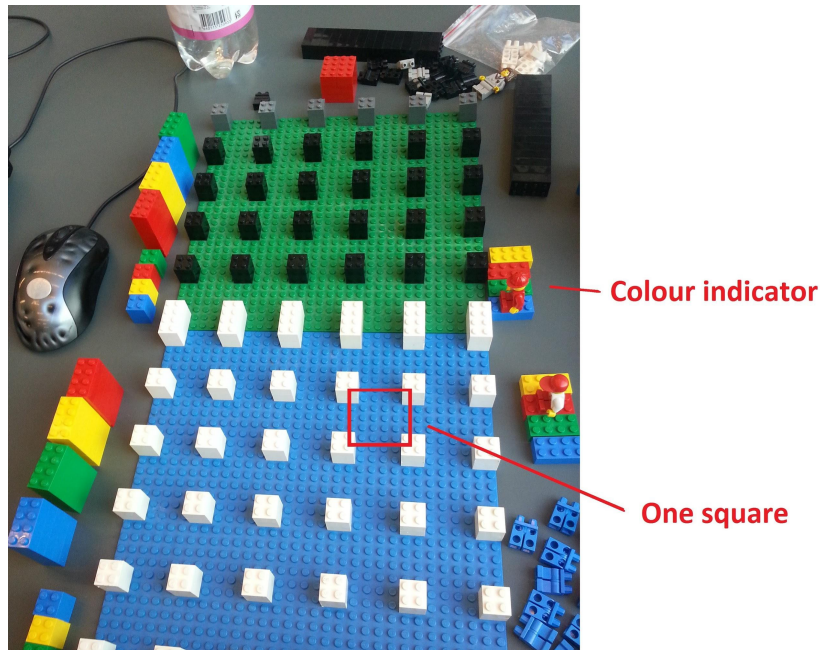
This approach allowed to explore the core gameplay in more details. The main question we had was : Is our gameplay idea (change the map and the seasons to affect the path of the worms) fun or not?

After a couple of games inside of the group and with two testers, we are quite confident that the core gameplay is fun and that it has a lot of potential. Of course we can't find out a perfect balance for our game with this prototype, but we have a good starting point for the digital version of the game. We know the different components of our game and we were able to draft the basic structure of the digital game.

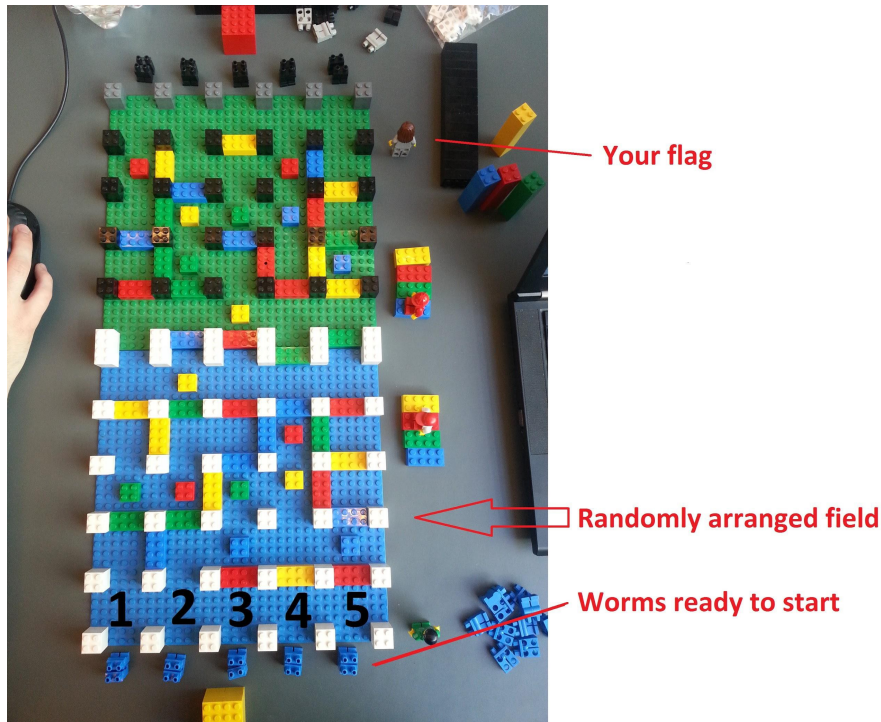
Rules : simplified board playable version

Game preparation

- Set up the playground by placing the obstacles on the playfield according to the picture
- Set up the color (season) indicator according to picture



- Each side is now divided in 25 big squares (5x5)
- Randomly place two 2x2 little squares of each color in the middle of a random field of your side, but not on the first row. Those squares are called surface obstacles.
- Randomly place five 4x2 pieces of each color on an random square boundary of your side. Those rectangles are called borders.
- Place your worms in starting order and place your fruit (big colored cube) in front of you



You are now ready to start !!

Game rules

This is a turn based game. Each player plays his turn, then the other can play.

The goal of the game is to bring 3 of your worms across the map so that they can steal the enemy's fruit !

Each side of the map has its own dominating color (season) indicated by the figure sitting on the color indicator.

When a side of the map is dominated by a specific color, the worms can not walk in or over any surface obstacle or border of the dominating color. (Example : if my side is dominated by green, no worm can go on a green surface or cross a green border.)

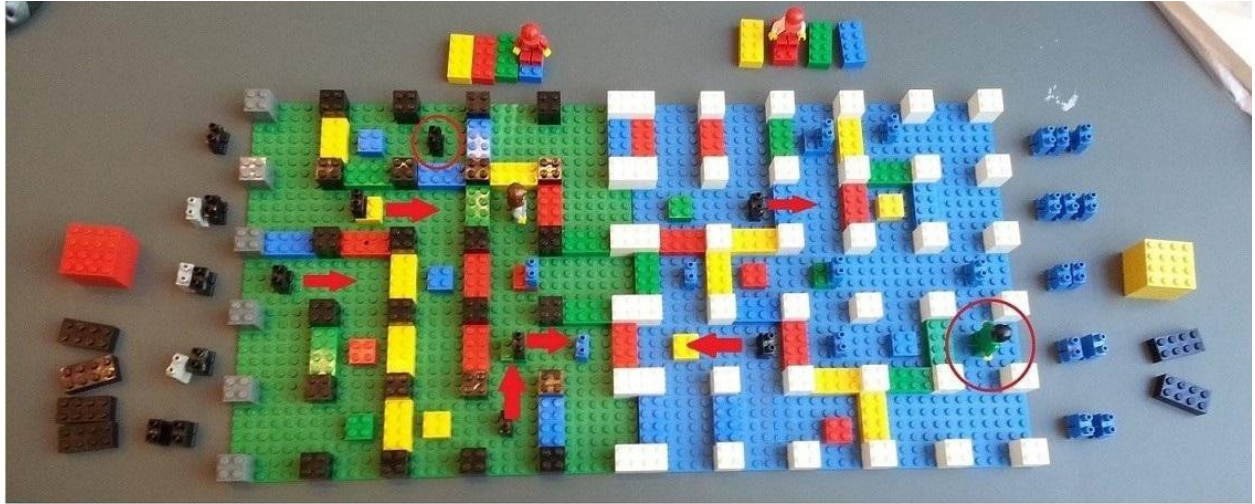
Turn structure

On your turn, do the following actions.

- 1) place your flag somewhere on the map
- 2) each of your worms moves by one square (see how in the next chapter)
- 3) One new worm spawns
- 3) receive one energy (a black 4x2 piece)
- 4) change the dominating color of a side (optional, cost two energy)
- 5) change a border or a surface obstacle (optional, cost two energy)

Worm movement

Your worms move automatically each turn. They take the shortest path to your flag, so place your flag where you want your worms to go. If a worm can't move, he stays in place.



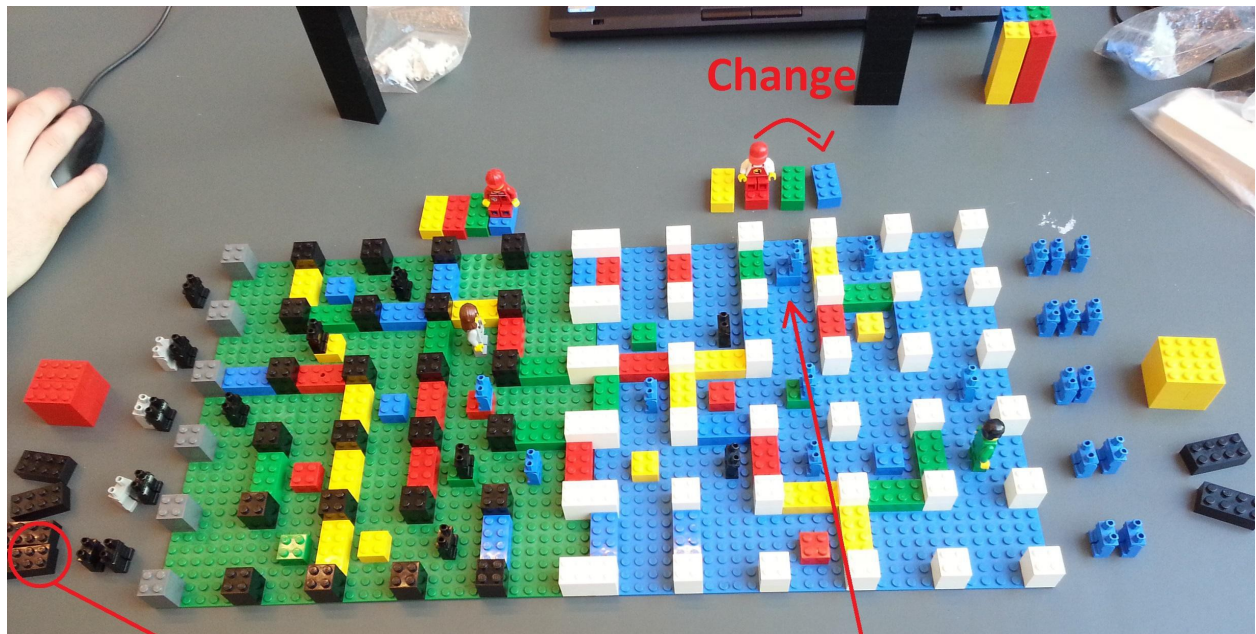
Black's movement. The worms try to reach the green flag. One worm is unable to move because he is surrounded by blue color.

Worm spawning

Each turn, a worm spawns on your first row. It alternates from column 1 to 5.

Change the dominating color (season) of a side

You can change the dominating color (season) of any side by paying two energy. If a worm finds itself on a colored square and the dominating color changes to this color, he dies.



Black pays two energy to change the dominating color to blue. This worm dies.

Change a border or surface obstacle

You can change any border and any surface obstacle by paying two energy. You can only change from one color to another. (You are not allowed to remove a component or add a new one). It is impossible to change a surface obstacle when a worm is sitting on it.