

# Physical prototype

The physical prototype consists mainly of a game board which will have all of the elements we intend to have drawn on the actual game screen. The water surface is divided on the horizontal plane into 20 cells. We use these cells to determine the position and movements of the attacking units during the game. Even though the actual game will be in real time, the prototype is turn-based. The game is still played by 2 people, but now there is a third person called the game master which will do the part of the computer. A player wins the game when his opponents lives are depleted.



Figure 1

Each round both players (one after the other) will be able to decide whether he wants to shoot a single fireball (of which he has unlimited supply of) or use a special ability (if he was able to collect magic power earlier in the game). If he decides to shoot a fireball he has to specify at which cell he wants to shoot the fireball at. When one of the players decides to use a special ability he will select the cells on which he wants to use the ability.

Once both players have decided what they want to do, the game master will take over and determine how the units on the board were affected.

If a player decided to shoot a fireball, the player will put the aiming ruler on the specified cell and use a die to decide where the fireball will actually hit. The aiming ruler (shown in figure 1) is centered on the cell that the player decided to shoot at and gives a number from 1 to 6 to each cell it's under. The player will then roll a die to see where on the aiming ruler the fireball will actually hit. The hit of a fireball has different effects depending on the cell that he hits:

- If there's one or multiple ships on the hit cell, they are all destroyed (friendly and enemy ships) and the fireball has no further effects
- If the cell that is hit is empty it creates waves which will affect the neighbouring cells:
  - If the  $n$ -th cell is hit then for each ship (friendly or enemy) that is on the  $(n+1)$ -th cell and the  $(n-1)$ -th cell, the game master rolls a die to decide in which direction it is pushed (if the die returns a number between 1 and 3 it will be pushed two cells to the left of the board, and if it's between 4 and 6 it will be pushed two cells to the right of the board)
  - All ships that are on the  $(n-2)$ -th cell are pushed one cell to the left and all ships that are on the  $(n+2)$ -th cell are pushed one cell to the right

All these rules are acting as a substitute for the fluid simulation that will be used in the actual game.

If a player decides to use a special ability the game master applies the special ability that corresponds to the season that the players castle is in:

- In winter the player can freeze 3 adjacent cells. All ships that are on these cells are killed and the cells stay frozen until all of them are no longer in winter (no ships can pass the frozen cells)
- In spring you're able to select 3 adjacent cells, which will give all friendly ships on those an extra life so they can resist one fireball (the special abilities are all ways a one hit kill). They are marked with stars as seen in figure 2.
- In summer the player can select two adjacent cells (cell  $m$  and  $n$ )
  - All ships that are on those cells are killed directly
  - All ships that are on the  $(n+1)$ -th and the  $(n+2)$ -th cell are pushed to the  $(n+3)$ -th and the  $(n+4)$ -th cell respectively (two cells away from the impact)
  - All ships that are on the  $(n+3)$ -th and the  $(n+4)$ -th cell are pushed to the  $(n+4)$ -th and the  $(n+5)$ -th cell respectively (one cell away from the impact)
  - All ships that are on the  $(m-1)$ -th and the  $(m-2)$ -th cell are pushed to the  $(m-3)$ -th and the  $(m-4)$ -th cell respectively (two cells away from the impact)
  - All ships that are on the  $(m-3)$ -th and the  $(m-4)$ -th cell are pushed to the  $(m-4)$ -th and the  $(m-5)$ -th cell respectively (one cell away from the impact).
- In fall the player can select 3 adjacent cells at which he wants to shoot a lightning. The lightning only hits and destroys the enemy ships

At the end of each round, each castle creates 2 units and the game master pushes all other units two cells towards the enemies castle. For each unit that hits an enemy's castles, its life is reduced by 1. Each player starts with 5 lives.

Before the start of each season the game master changes the seasons on the board as follows:

- In the first round it is summer on both sides
- After two rounds the right half of the board is in fall and the left side is still in summer
- From now on each seasons completely occupies the board for three rounds. After those 3 rounds, there is one round where the left half of the board stays in the old season and the right half changes to the next one
- The order of the seasons corresponds to the natural order of the seasons:
  - Summer
  - Fall
  - Winter
  - Spring

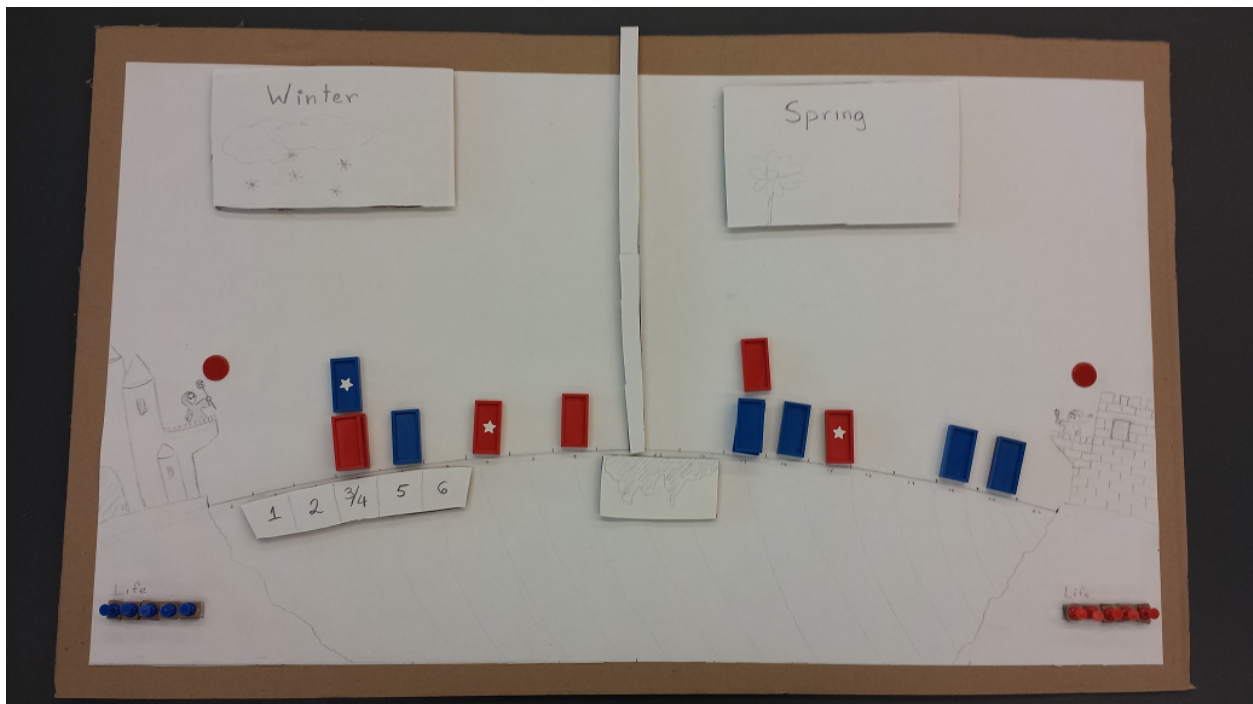


Figure 2

Before the second round with a full season starts, both players need to roll a die and the one with the higher number will be given a special ability token, which he can use in any of the following rounds. A player can only have one special ability token at a time. If a player wins a token and hasn't used the old one yet he will not get a new one.

## Revisions

When we played the first version of our game, we thought it was a bit slow, and took too long to win, so we made the ships move faster. Still, almost no ships would survive to the other side, so

we made each castle send out more ships per turn. Some of the other details we played around with were:

- Amount of cells on the horizon
- The effects of a fireball
- The effect of each special ability
- The amount of turns in a season
- How often a special ability shows up

## Experience

We found that our game allowed our players to have a fun competitive experience against one another. While playing the game, players faced strategic decisions on where to aim the fireball or when to use a special ability. We wanted these actions to sometimes backfire, fireballs can sometimes hit friendly units for example, so we incorporated the die to give an unpredictable factor to the game. We believe this made the game more entertaining.