

# Futuclass AR

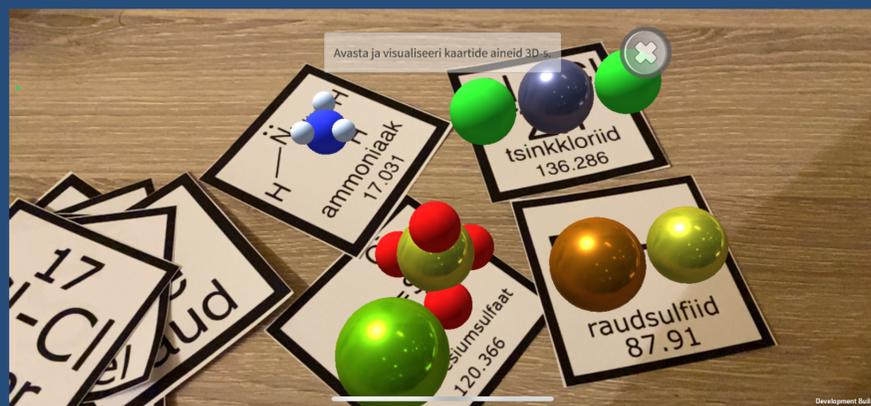
Learning through AR



It is a mobile AR game prototype based on the current VR game Futuclass Hub — an educational virtual reality (VR) game available on Steam developed by Futuclass OÜ. The current game content is based on the DLC module Reaction Balancing I. It was a side project to them targeting the mobile AR market. The target audience is 7th to 9th-grade students.

## The Game

It lets the player learn and rehearse chemistry topics through the interactions between the player and the Chemical Cards - AR Markers designed for this project. All of the markers are designed as learning materials. The 3 different game modes provide different playing styles to the player.



## Design

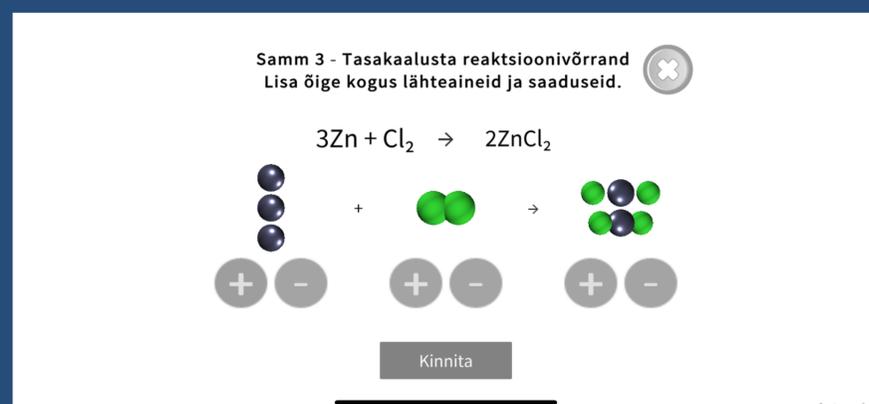
There are different groups of cards designed. The chemical symbol, chemical name and the characteristics of the chemicals have been used as elements on the cards. Total 33 cards are available by now.

## Testing Result

2 usability testing sessions had been conducted. They were one virtual class and one physical class. Bugs were found and solved. In general, the pupils gave positive feedback and they liked the game. The teacher said they would like to use this app in their teaching when the game is available.

## The Development

The development of Futuclass AR was carried out in a team of 3. These members include members from Futuclass, who provided professional educational content. Unity game engine with C# scripting language was used for speeding up the development. AR Foundation framework of Unity was used for developing image tracking functionality on iOS and Android platforms. The curse of image similarity was the major challenge of this project. A lot of internal testing sessions and optimisations have been done to strike a balance between the number of cards used per game task and the numbers of the image being tracked per AR session.



## Conclusion

It is a working prototype full of potential. It has made use of the AR markers and AR contents. The development continues in the future. Please contact Futuclass for a testing session.

[info@futuclass.com](mailto:info@futuclass.com)

### Author

**Hei Chun Shum**

Computer Science, Msc  
Faculty of Science and Technology  
Institute of Computer Science

### Supervisors

**Raimond-Hendrik Tunnel**

**Kristen Tamm**



UNIVERSITY OF TARTU  
Institute of Computer Science



Study IT in .ee  
sponsored by Skype™

