

# HEALTH GAMIFICATION



Community Project Outcomes and  
Health Platform Integration Concept Paper

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VERSION 1.0 5<sup>TH</sup> AUGUST, 2017

## CONTACT US

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## THE PROJECT

In 2014 a group of young and not so young games designers, developers and health professionals initiated a project to put the fun in to learning about the food plate, an otherwise not particularly engaging activity.

This was done through the development of an action game to gamify the learning of healthy food principles (the food plate). Variants of the game have been named the 'Heart Game', where it was used in a rehab program, and 'Freddie Foodster' where younger audiences were involved.

The objective was to substantially increase the levels of engagement and food plate learning outcomes.

The game was extensively tested through individual playtesting, recall testing, and through community health promotion activities in conjunction with local health service providers, food retailers and restaurants in Glen Huntly.

## THE RESULTS

- The game is a lot of fun and is very engaging.
- Tested recall of food groups was excellent. Further game extensions are required to increase recall at the individual food item level (see below)
- The interaction with the game varied significantly according to the participants' game playing skills
- The game was included as a core feature of a community promotion. This was particularly effective at bringing healthy food concepts to the local food community (restaurants, retailers, community groups and individuals). Healthy choices were included in restaurant menus and promoted by retailers.
- It also featured very successfully as the centre of interest for fun community events, particularly a trivia-night style event.

## WHAT WE'VE LEARNED/CONCLUSIONS

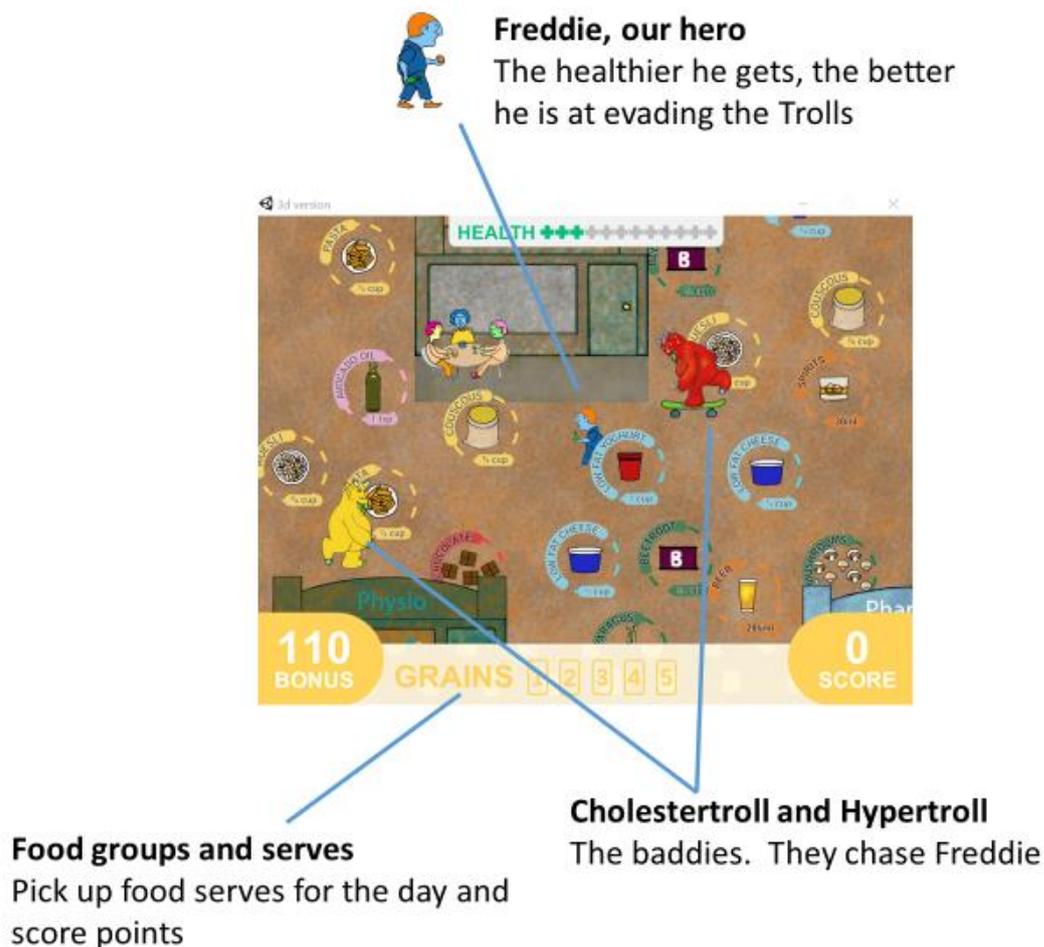
- To be effective, a game level needs to be simple, medically accurate, engaging
- Tight alignment between the game principles and the health knowledge is critical.
- Testing and iterative development is essential. This includes playtesting, usability testing and recall testing
- Through this project and other promotion/community projects it is apparent that gamification works at a number of levels:
  - Engagement at the individual level, both in-game, and to achieve health objectives and milestones

- Competition and social learning at the group level. This is very powerful
- Whole of community participation and competition.
- The game performs a role, it's not a solution. It works best when integrated to an overall health program.
- Health games will work best when integrated to an overall 'health platform', which integrates the elements to support a holistic approach.

## HOW THE GAME WORKS

It's very simple (It has to be):

Freddie (our hero) does his best to evade the trolls (Cholestertroll and Hypertroll). He gains health (and speed) by picking up food items in quantities according to the food plate recommendations.



Point scores are sent to the Leaderboard, which is available in the game, as well as online.

The game is designed to be self-calibrating to encourage players to stay in the game and repeat plays. A slow starting pace increases rapidly for skilled players to keep them challenged and interested.

On collecting a food serve, the item's name pops up and is highlighted to draw attention, and to help commit the name to short-term memory. Future versions may include voice-over to create reinforcement.

On completion of the level, the groups and items are displayed to provide reinforcement. Future versions are likely to include a challenge with bonus points to create recall, and to generate an in-game behaviour to consciously remember each item.

## ROLE OF THE GAME

The role of the game is very simple:

1. Learn the food groups
2. Learn the specific food items in each group

At this point in time there no other objectives for the game.

The aim is for these learnings to provide a solid base for other components of a health program to take on the task of achieving behaviour and lifestyle change.

## EXTENDING THE GAME

During the development of the game, the need was identified to:

1. Improve food item recall through game challenges
2. Introduce age and gender-related avatar selection to increase identification and to calibrate food serve quantities
3. Adapt the game for different levels of game ability
4. Implement web and mobile versions. Currently the game is downloaded and played on a computer (Apple or Windows)
5. Generalise the game by taking out Heart Disease specific elements such as Cholesterol and Hypertension, and making specific variants for Diabetes and other conditions
6. Extend social and competitive elements of the game to encourage social learning and increase engagement
7. Create player profiles and journeys to support personalisation
8. Integrate the game to a Health Platform to provide a supporting role in health programs.

## OTHER GAMES

The potential exists to create other games, variants and game levels to support other health learning requirements, for example:

1. Learning healthy shopping and how to read food labels
2. Learning about good health habits
3. Learning about Heart Disease, Diabetes and other conditions.

# INTEGRATING TO A HEALTH PLATFORM

Integration to a 'Health Platform' would substantially increase a Health Promoter's ability to implement community and population-wide health initiatives. 2-way communication between the game and the platform could include:

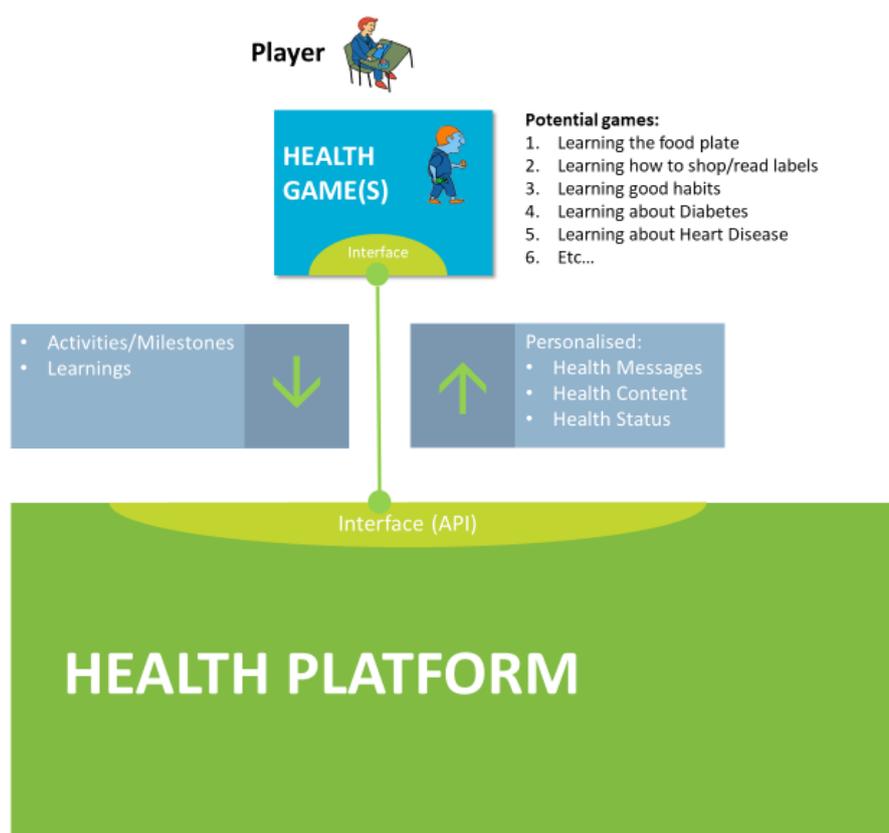
## Game to Platform

- Milestone and activity completion, such as playing the game, completing specific levels and tests
- Health learnings achieved, such as levels of knowledge recall, collected in-game, or through tests.

## Platform to game

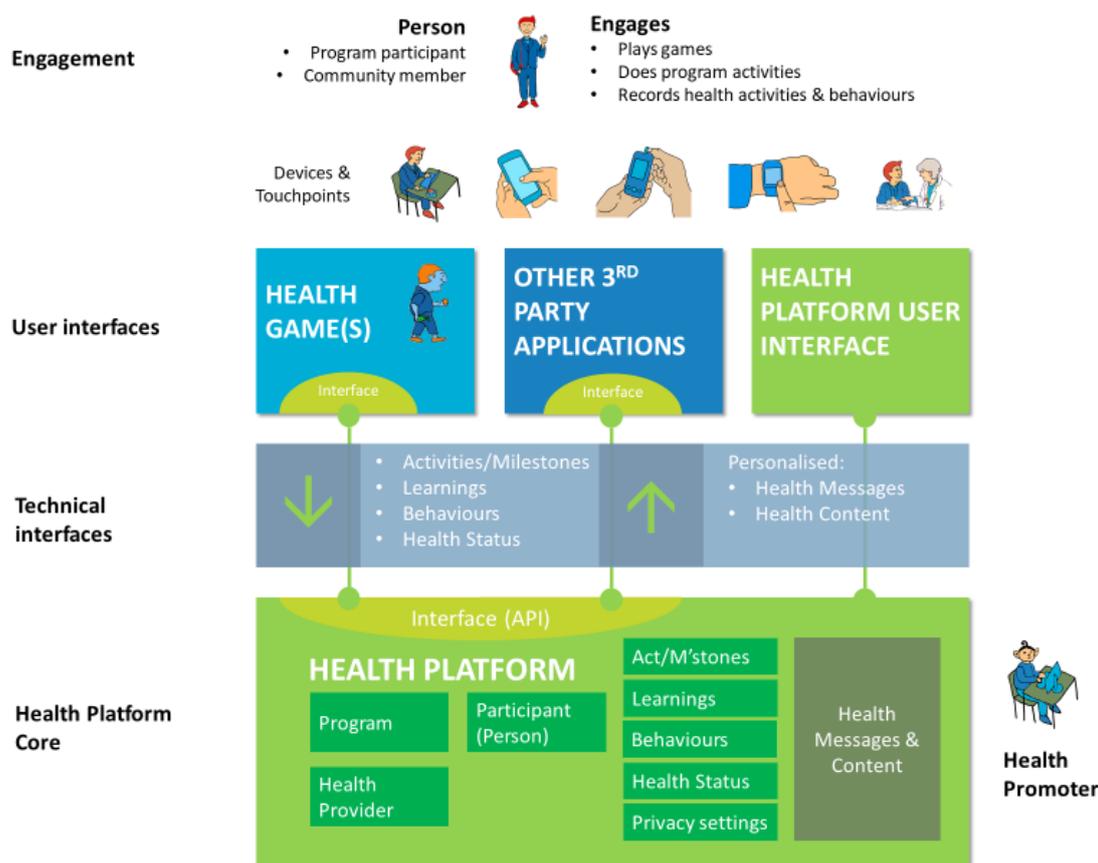
Personalised messages and information could be sent back to the game, including:

- Relevant health messages and content
- Links to other supplementary activities, or next steps



# HEALTH PLATFORM SOLUTION

In a broader Health Platform solution, the Game(s) would be just one of the interfacing components, where the 'Person' participates in and records activities (directly, or indirectly via the game, medical devices, wearables).



## WHAT EXACTLY IS A HEALTH PLATFORM?

The Health Platform as defined above is an abstract concept. In practice, there are many ways it could be created, including:

1. Extension of a CRM
2. Extension of a CMS (Content Management System)
3. Custom built solution
4. Existing health system or cloud solution
5. A combination of the above.

The key requirements are:

1. Repository for profile and health information, including personalisation
2. Designed to integrate to a variety of health apps, wearables and platforms such as Apple Healthkit
3. Functionality to support health promotion and health programs.

## **TECHNICALITIES**

The game has been developed in Unity 3d, a leading game engine, and C#, a Microsoft programming language. Game Sparks was used as a backend to manage the Leaderboard.

## **STATUS OF THE PROJECT**

The project is currently on hold. We are interested in partnering with interested organisations to take the concept further.