

Jirafa World
Mathematics Game
for Primary Education

“Kunskapens träd”

Background

- The project is mainly financed by Vinnova – the Swedish authority for innovation
- Three parties: Jirafa AB (game developer), Malmö University (pedagogy and didactics) and Björnbodaskolan (primary school)
- A development process that is user-centric and based on existing research on educational games

Mission

- Our mission is to develop an educational game in Mathematics for kids in school years 1 – 3, that will mainly be used outside of the classroom
- The Mathematics content is based upon the Swedish national goals for Mathematics in year 3
- Measurable results: the fun factor and how much they actually learn from the game

Development challenge #1

- Design a game where the educational content is truly integrated with game play
 - Close cooperation and mutual learning between scientists, developers and teachers
 - Designed from the ground up as a learning game including game engine, game play, story

Development challenge #2

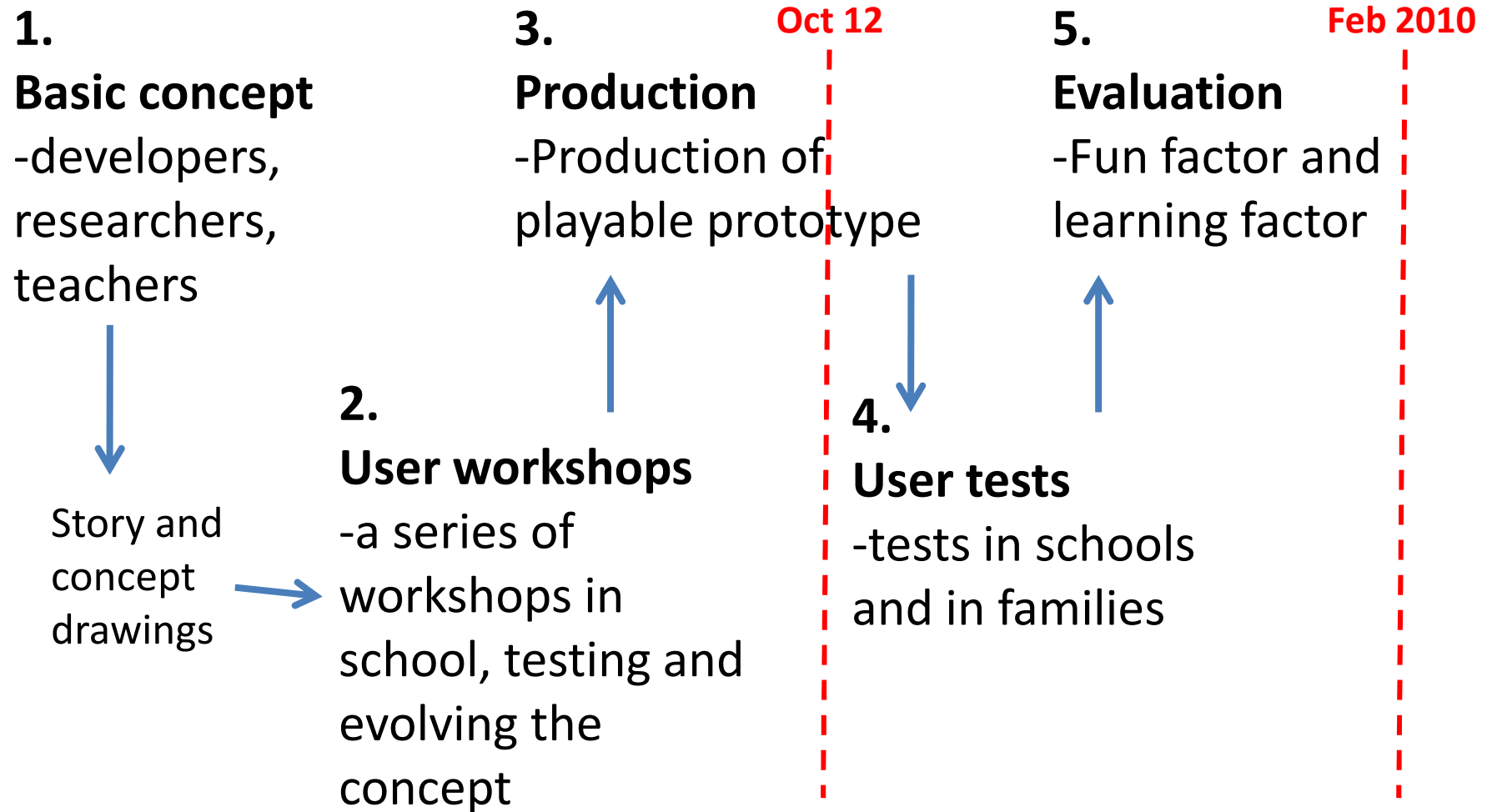
- Involve the users in the game design
 - Workshops with children at an early stage in the development process
 - In the first workshops, developers and scientists presented the basic concept in words and pictures and got feedback from the children
 - In later workshops, the children could play an early game prototype

Development challenge #3

- Involve the parents in the game
 - A level of difficulty in some parts that will require the help from the parents
 - Communication from inside the game to parents outside of the game through email/sms (example: results can be reported to parent that can respond to the player in the game)

Development process

Feb – Dec 2009



Concept

- The game-play is based on an adventure quest with role-playing, missions, math challenges and math training through mini-games
- Progress is rewarded through acquiring new skills and tokens that will help save the tree
- Progress is measured and made visible through the avatar

Outline of game play

- 1** Players arrive to the village in the tree.
- 2** The players have a home where basic instruction is provided
- 3** The first mission is a single player mission where the player's skill level is measured
- 4** After the first mission, the players can join a team to play together with others
- 5** Various tests must be passed where the players can help each other
- 6** Minigames that are accessible from the player's home provide math training on demand

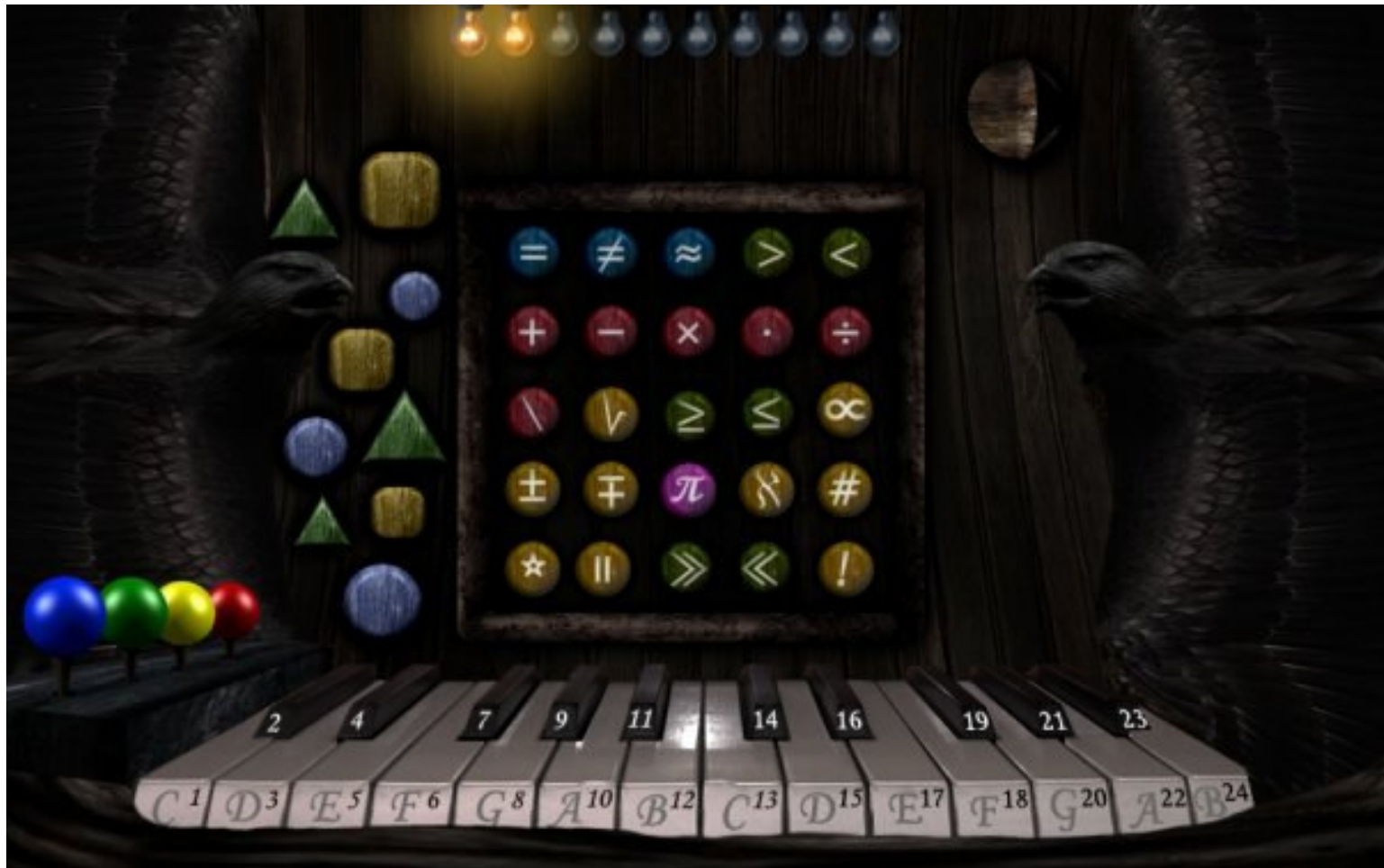
The avatars



The avatar home is the lab where the player can practice specific Math skills



Part of first mission, test of ordinal numbers, location, shapes, symbols



Magic marbles are rewarded to the player after completing a mission



Certain marbles can be sacrificed to
the tree to restore its health



Video clip featuring game play

The image shows a screenshot of a YouTube video player. At the top left is the YouTube logo with the text "Broadcast Yourself™". To its right is a search bar containing the text "jirafa world" and a blue "Search" button. Below the search bar are navigation links for "Home", "Videos", and "Channels". The video title "Jirafa Gameplay" is displayed in bold black text, with a full-screen and share icon to its right. The video player itself shows a scene from the game "Jirafa World". On the left side of the video frame, there is a vertical banner with the text "Jirafa World" and "a new way of learning" above an illustration of a giraffe whose head is a tree. The main video area shows a dark, atmospheric environment with large, gnarled tree trunks. Two small, colorful characters (one red and one green) are visible on a ledge. A white text box with the word "Beeee" is overlaid on the scene. At the bottom of the video frame, the text "cooperative gaming" is visible. The video player's control bar at the bottom includes a play button, a progress bar showing 0:10 / 1:13, a volume icon, a quality selection icon set to "HQ", and a full-screen icon.

Research questions to evaluate

- Can children have fun and learn Math through the game?
- How can a learning game be designed to suit both boys and girls and gamers and non-gamers?
- How can parents be engaged in the game?

Next steps

- Testing on 50 - 100 children in and out of school will start Nov 1
- Evaluation will be published next year
- We seek funding for further exploration and action research
- Release of commercial version of the game in August 2010