

STARARCHITECT

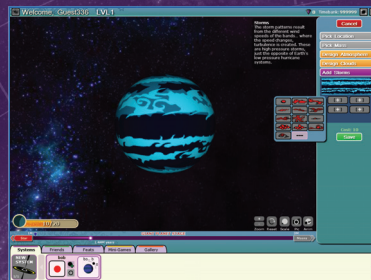


Making Space Social Exploring the Educational Potential of the Facebook Social Network

Overview

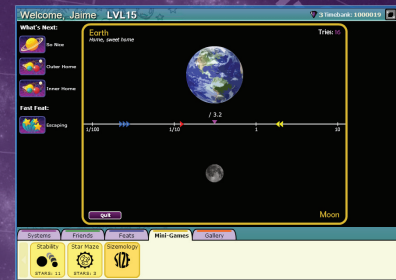
We are developing an end-to-end stellar and planetary evolution game for the Facebook platform. We're focusing specifically on the "sporadic play" framework popularized by games such as Farmville, where players may only take actions a few times a day, but may continue playing for months. This framework is an excellent fit for teaching about the evolution of stars and planets. Players select regions of the galaxy to build in, then watch as the systems evolve in scaled real time over days to weeks. Massive stars will supernova within minutes, while lower mass stars like our sun will live for weeks, possibly evolving life before passing through a red giant stage and ending their lives as white dwarfs. Successful systems will advance players, allowing them to create different types of stars and planets, seed life, and customize their worlds. As players progress in the game they will explore concepts including stellar lifecycles, habitable zones, and the roles of giant worlds in creating habitable solar systems.

Flexible Design in a Science Sandbox



- Design process vests people in their systems... the ability to photograph and post pictures of your system is built in.
- Science content is embedded in multiple ways... colors, terrains, atmospheres are functions of star type, planet location, planet mass, etc.

Mini Games to Address Other Content



- Focus on content not well addressed by the overall game.
- Gives players something to "grind" on.
- Can still tie back to the game: this scale game unlocks the ability to "fake" the scale of your solar system.

Key Game Elements Build Stars. Create Life. Profit!

Persistency: the game runs on a server in the background so that systems can evolve while the player is offline.

Time Scales: Events occur on a timescale of one million years per minute. Giant worlds can be built in a few minutes; terrestrial worlds a few minutes after that. Single cell life can arise within an hour, but complex life can require several hours. Star lifetimes can range from seconds (for supergiants) to weeks (for sun-like stars).

Energy and Unlocks: Game flow is controlled through a combination of energy (consumed to create worlds, but replenished over time) and locks, which lock out features until appropriate certain conditions are met.

Achievements: The game encourages certain actions through "Feats": accomplishing each task earns currency and titles and unlocks more features (e.g., moons).

Learning Goals: the structure of the game lets us directly address stellar lifecycles; their dependence on initial mass; their relative timescales; as well as some conditions relating to life including both galactic and stellar "habitable zones."

Connections to Deeper Content



- Daily News links to current stories at other sites.
- Feats include "factlets" that can link to other sites.
- Star backgrounds can be based on all-sky maps, with links to the mission pages (below: a star field based on data from the Fermi Gamma-ray Space Telescope).

"Feats" to Guide Players



- Feats range from simple tutorials ("animate your system") to complex tasks ("recreate our solar system").
- Feats scaffold: from "create a terrestrial world", to "create a terrestrial world in the habitable zone of an M0 star".
- Feats can unlock options. Above: the ability to create "fake" scales for your own system is unlocked.

Project Goals

- To create an online activity that communicates the fundamentals of stellar and planetary formation and evolution in an integrated, engaging fashion.
- To use this activity to explore the educational potential of casual, sporadic play gaming inside social networks.
- To determine whether this game framework can successfully engage a spectrum of players and learners, improve their understanding of the target content, and encourage them to share their results and seek additional information.

Audience

- As a Facebook embedded activity, the content is available to a broad spectrum of ages, from teens to seniors.
- The content educational level is targeted at late middle school early high school.
- The activities themselves are specifically designed to be lightweight and "sporadic" in order to engage people who may not be willing to commit more than a few minutes at a time.

Where we are, evaluation, next steps

- Currently in closed alpha: game is live but passworded to manage the number of players. "Viral" elements are also disabled.
- Game is instrumented to collect information on Feat accomplishments, repeat visitation, duration of play, links followed, and more. Facebook adds to that with basic demographic information (player age and gender).
- Formative is in process, using phone interviews with players while they work through the initial stages of the game.
- Summative will be scheduled for late 2014/early 2015.

Want to Play?

- Log in to Facebook and search for **Starchitect**.
- If the game asks for a password, give it **4mystar**
- Feel free to hand this information around: the password just gives us some control while we monitor the server performance.

Questions/comments?
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And of course...
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