“Blind Mouse” on Mars and on the Moon – a Map Game for Disseminating Planetary Topographic Knowledge

http://terkeptar.elte.hu/em

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Outline

- Edutainment in geography
- Designing concepts
- The roots:
  - the original „Blind Mouse” mute map game
  - „Blind Mouse 3D”
- The game
- Overlay map, relief representation, toponyms
- Further plans
Edutainment in geography

“Games and puzzles can provide students with a context in which to exercise learned skills, apply knowledge and generate curiosity.”

AGameAday.com

people’s best learning experiences come when they are engaged in activities that they enjoy and care about...

Edutainment („education” and „entertainment”): a method of amusing teaching and learning with multimedia applications
Designing concepts of “Blind Mouse” on Mars and Moon

- On-line neo-cartographic game
- Easy usage
- Increasing students’ interest in planetary cartography
  - Making planetary toponyms more familiar to students
- Displaying basic features and landform types of the Moon and Mars
  - Based on the multilingual planetary map and globe series published by ICA Commission on Planetary Cartography
- „Top list” in order to create an air of competition
- Multilingual (Hungarian, English and German)
The original Blind Mouse mute map game (http://vakeger.elte.hu)

A mute map game for entertainment and education – originally prepared as part of an MSC degree thesis in cartography

- On-line game for increasing students’ interest in cartography
- Learning and teaching aid
- Levels corresponding to the Hungarian national curriculum
- Various themes
- „Top list”
- Multilingual (HU, EN, DE & TR)
- Geographic maps with variable layers similar to the maps in the schoolbooks
The Blind Mouse 3D game
(http://vakeger.elte.hu)

A new variant of the Blind Mouse game

• Map based on Google Earth Plugin
• New themes – global datasets:
  - World heritage
  - 100 wonders of the world
  - Capitals of the world
• Photos and descriptions for each object
• Time limit
The Blind Mouse on Mars (http://terkeptar.elte.hu/em)

The combination of the 3D mute map game with planetary maps

• Extending the game to the two best-known planetary bodies: Moon and Mars

A tool of popularizing planetary topographic knowledge and improving the astrogeological knowledge about other planets

• The general knowledge is rather scarce about the nature of the surface of other planets, which is partly a result of the lack of these subjects in elementary and middle to high school education
Overlay Maps

Google Earth (Mars, Moon) is impressive, and gives a detailed view of these bodies

• Lunar and Mars globe overlays were produced in a parallel project supported by the ICA Commission on Planetary Cartography as part of the series “Multilingual maps of the terrestrial planets and their moons”
  ➢ reasonably good quality topographic data
  ➢ and size-dependent labels of selected surface features
• These globe maps can be draped to the surface of the planets and users can turn their visibility on or off.

middle or high school children need simplified / generalized, easy-to-understand and yet visually attractive maps
Relief Representation

• hypsometric relief representation
• using colour schemes designed specially for the given planet
• based on digital elevation models of the planets:
  ➢ MOLA for Mars and
  ➢ LRO WAC DTM for the Moon.
Toponyms

Special emphasis is placed on the language and the selection of official and informal planetary place names

- **Font size** of place names is related to their true geographic dimensions
- All major **landing sites** are shown.
- No coordinate grid (only the equator)
- The maps are **no longer “mute”** (i.e. without toponyms)
  - The planetary feature names are rather unknown for the general public or the students
  - The most important role of this game is to disseminate this knowledge
- Nomenclature of the Lunar map is **bilingual** (Latin and English)
The Game

The aim of the game is to check our knowledge of positioning and identifying map features in two categories – Mars and Moon.

Two types of game can be played on each of them
1. In the first one, players have to place ten points (defined by a short description) on the globe.
   - The score is calculated from the average misplacement of the points and the time used to finish the game.
   - Due to the educational nature of the game, a short animated virtual trip ends the game.

2. The second one is a “planetary quiz”: four answers are given to each question; players have to select the right one with the help of the digital planetary globe.
The Blind Mouse on Mars
(http://terkeptar.elte.hu/em)
Further plans

• Introducing the game as a tool in education into the courses on planetary morphology, astrogeology and astrobiology at Eötvös Loránd University and astronomy clubs. New target age groups (e.g., 6-10 years) are also to be added.

• Enabling users to modify the data – teachers can create their own tests

• Applications designed for tablet computers