

## EDUCATIONAL SOFTWARE FOR MATH AND SCIENCE

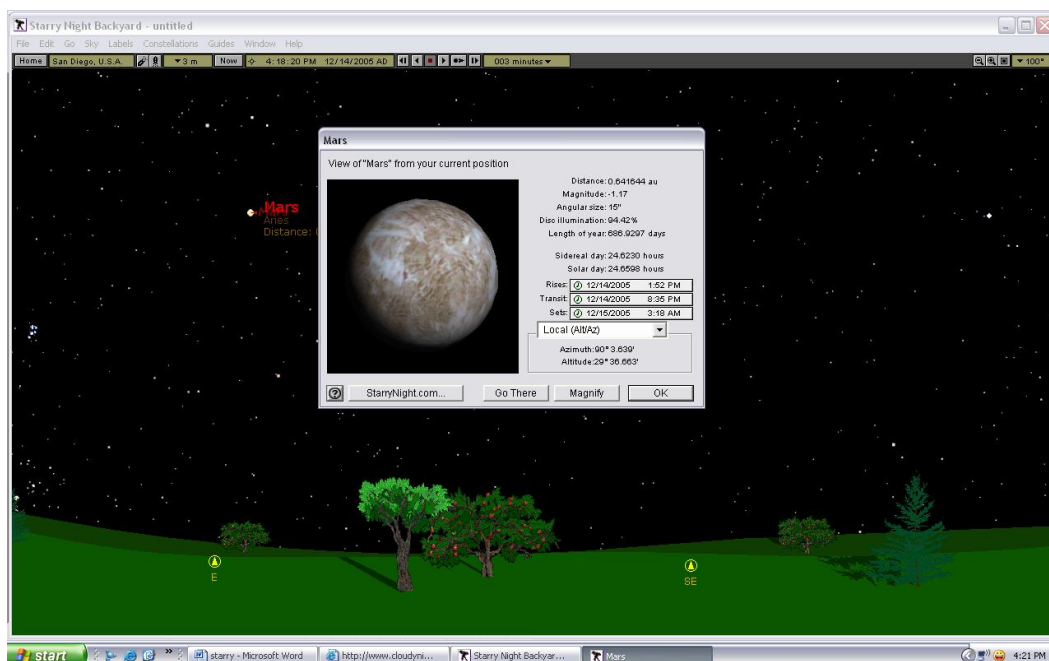
### SOFTWARE REVIEW

## STARRY NIGHT BACKYARD

By  
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### (1) DESCRIPTION OF PROGRAM:

Starry Night Backyard is a versatile, comprehensive and interactive software program designed to allow the user to explore and learn the basics of astronomy. It is easy-to-use and combines realistic, detailed depictions of the night sky with features that let the users roam the universe to view planets, comets, galaxies, and other objects. By double-clicking on any of the objects the user can open a descriptive window with links to related information (color, temperature, radius, luminosity etc.) Starry Night Backyard keeps track of time, so during the day the user will see a sunny blue sky on the screen. A click of the mouse blackens the heavens, revealing stars normally hidden by sunlight. The program has the ability to view the sky from different points in time, both in the past and in the future as well as from different angles, (i.e. altitudes from 0 to 90 degrees), directions, and vantage points. Starry Night Backyard is an ideal program for students to utilize in the absence of genuine star-gazing or as a very useful learning complement as they look at the night skies.



**(2) BASIC INFORMATION**

- (a) **Title:** Starry Night Backyard
- (b) **Publisher:** Imaginova Canada Ltd.
- (c) **Price Range:** Free to Try; \$30 - \$300, depending upon the package to buy
- (d)      shareware      freeware  commercial

**(3) TARGET POPULATION**

- (a) Is this designed for   X   teachers or   X   students to use?
- (b) If students, in what subject and at what grade level?
- (c) Where would this best fit into the curriculum?
  1. **Subject:** Astronomy, Physics, Earth Science
  2. **Grade level:** 5<sup>th</sup> and Up
  3. **Academic ability:** User Friendly, Above Average, Interactive
- (d) **Would this software maintain the interest of this population? Explain.**

I believe Starry Night Backyard will not only maintain the interest of this population, but will also help to generate many amateur astronomers. The interactive capabilities of this software will capture the attention of any novice users and hold the interest of any pro-astronomer. This software will certainly hold the interest of the teachers who want a realistic substitute of the night sky that students could work with in the classroom during the day. It is a great way to reinforce concepts learned in a textbook.

**(4) CONTENT GOALS**

- (a) **What, if any, concept(s) does this program introduce?**

This software introduces basic concepts of Astronomy, such as movement and identification of individual stars, planets, constellations and other celestial objects using a simulated computer sky.

- (b) **How effective of a job does it do at teaching these concepts?**

Even though this program has an above average effectiveness at teaching the concepts, it can generate motivation in students and reinforce various concepts learned from the textbooks.

- (c) **Compare with traditional techniques for teaching this concept(s). (What, if anything, does this software accomplish that traditional forms of instruction could not do as effectively. Explain)**

Unlike any traditional teaching techniques, student can view the constellations from any location on earth by simply selecting the desirable latitude and longitude (i.e. where they live). The sky above, as viewed on the screen, appears exactly as it would at the selected location at the date and time specified. Clicking the cursor over any star will identify it by name on screen, reveal the constellation it is found in, and show its distance from Earth in light years. Student can gaze outside at the stars overhead and then return to the computer screen to click away and obtain information on what was just seen. By simulating a changeable viewpoint of the sky so realistically, it is a nice replacement for the more timeworn tactic of using sky charts to locate astronomical objects.

**(5) PROCESS GOALS**

**(a) What type(s) of reasoning does this program encourage (rote memorization, comprehension, application, analysis, synthesis, evaluation, deduction, induction, etc.)?**

- **Comprehension:** It helps students to interpret facts and concepts about Basic Astronomy.
- **Analysis:** Students can classify and explain about various celestial objects.
- **Evaluation:** Students can measure and test various facts and information to justify many astronomical concepts.

**(d) Compare with traditional techniques for stimulating these reasoning skills. (What, if anything, does this software accomplish that traditional forms of instruction generally do not do as effectively. Explain)**

Unlike traditional techniques for stimulating these reasoning skills, students can evaluate various astronomical concepts by using the interactive tools and the virtual universe.

**(5) LESSON PLAN. Write three specific tasks, questions, goals, or projects that you would have your students accomplish or answer after using this software.**

**(a)** By analyzing past, present and future positions of various astronomical objects in our sky, speculate about the changes that are taking place in our galaxy and discuss the consequences of events that may happen in the future.

**(b)** Students will investigate one or more of the following topics and develop a plan for the future regarding it: lunar exploration, space travel, or Mars exploration.

**(c)** Students will:

- Describe the organization of the solar system
- Compare distances of objects in space
- Describe the characteristics by which stars are classified
- Compare the life cycles of stars of different sizes
- Explain, with examples, the relationship between astronomical discoveries and current understanding of the universe

**(6) SUMMARY: Assuming that you had access to this software; would you use it in your classroom? Explain why or why not**

I would use this software towards the beginning of the school year, to create excitement and motivation about Astronomy. From my evaluation this program has an above average effectiveness at teaching the concepts of astronomy, but can create interests among students.