

Case Details

Case Title:

The final frontier

Author(s):

Bethany Turner, Emory University
Dericka DeLoney, Columbia Middle School
Jason Haensly, Emory University

Date Published:

12/12/2008

Grade Level(s):

Middle School

Subject(s):

Earth Science

Summary:

The future is here: it's 2206, and humanity will soon begin colonizing new planets in the solar system. However, the government has only given NASA enough money to colonize one planet. Which planet should we colonize first? How will we go about doing it? Who should be part of the colonies? As NASA's top scientists, it falls on you to figure it out.

Adapted from:

Dixon, D. (2008). Know your galactic address.
<http://dixon8science.okaloosaschools.wikispaces.net/file/view/Know+your+Galactic+Address+Davidson.ppt>

Suggested Citation:

Turner, B. L., DeLoney, D. Y., & Haensly, J. W. (2008). *The final frontier*. Retrieved June 03, 2012 from Emory University, CASES Online Web site:
http://www.cse.emory.edu/cases/casedisplay.cfm?case_id=2566

Learning Objectives:

1. Describe in detail the physical characteristics of the eight other planets in our solar system, including distance from the sun and from Earth, size, atmosphere, terrain, climate, etc. and when applicable, evidence of possible life on other planets in the solar system.
2. Explain the characteristics of one planet (elaborated above) to the rest of the class in a clear and comprehensible way and using self-constructed visual aids.
3. Diagram at least one other planet in the solar system, scaled to Earth and the sun.
4. List the various hazards to account for in colonizing a given planet, including protection from heat, cold, low or excess gravity, toxic atmosphere, inadequate or excess solar radiation, transportation, delivery of water and deliver and/or production of food.
5. Compare and contrast the nine planets, including Earth, based on all of these characteristics.
6. Discuss the possibility and logistics of colonizing planets in other solar systems.

National/State Standards:

Georgia Performance Standards

S6CS1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science. (NSES Content Standard A)

S6CS5. Students will use the ideas of system model, change, and scale in exploring scientific and technological matters.

S6E1. Students will explore current scientific views of the universe and how those views evolved.

- b. Describe the position of the solar system in the Milky Way galaxy and the universe.
- c. Compare and contrast the planets in terms of: Size relative to the earth, Surface and atmospheric features, Relative distance from the sun, Ability to support life