



Sample Lesson: “Bringing Energy Back from the Moon”

Objective

Discuss the use of various energy/power sources on the moon (such as He3, hydrogen, solar energy, etc.) and the use of the moon as an energy source.

National Standards Met

NCSS 8–Science, Technology and Society

NSES 4–Earth and Space Science

NSES 5-Science and Technology

Bringing Energy Back from the Moon

Grade Level: 9-12

Introduction:

This lesson is designed to be part of a unit dealing with life in space and will focus on the various energy sources that can be mined on the moon. Some of these energy sources include He3 and Solar energy. There is still very little information concerning mining on the moon and as a result, this lesson will provide ample time for discussion and speculation.

How will you accommodate for family diversity or multicultural issues?

Discuss various people that have been involved with space exploration and how their culture affected their experiences.

How will you accommodate this lesson for students with learning disabilities or special needs?

Time will be designated at the end of the lesson for any questions or concerns that any student may have and time will be provided for any student to receive help from the teacher.

National Standards Met:

NSES 2—Physical Science

NSES 4—Earth and Space Science

NSES 5—Science and Technology

Materials/Resources:

Consult the following websites for more information on this topic.

1. <http://ares.jsc.nasa.gov/HumanExplore/Exploration/EXLibrary/docs/ISRU/06Energy.htm>
2. <http://www.americanscientist.org/template/BookReviewTypeDetail/assetid/50749;jsessionid=aad2gRtSA79nQ>
3. http://en.wikipedia.org/wiki/Colonization_of_the_Moon#Energy

Procedure:

1. Discuss possible reasons for mining on the moon (citing limited fossil fuels on earth, environmentally harmful fossil fuel extraction, a rapidly industrializing world, etc.).
2. Discuss why some are opposed to mining on the moon (citing a destruction of moon environment, limited funding, etc.).
3. Discuss He3 and explain the purpose of using it as energy...including things like how energy would be created, the resulting costs, etc.
4. Discuss the pros and cons of using He3 for energy.
5. Discuss using solar power for energy (how would the energy be collected, would it be environmentally friendly, how costly would the process be, etc.).
6. Discuss the pros and cons of using solar energy.
7. Discuss which option would be more efficient.

8. Conclude discussion.