

Crashed on the Moon

An Educator's Reference Desk Lesson Plan

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Endorsed by: These lesson plans are the result of the work of the teachers who have attended the Columbia Education Center's Summer Workshop. CEC is a consortium of teacher from 14 western states dedicated to improving the quality of education in the rural, western, United States, and particularly the quality of math and science Education. CEC uses Big Sky Telegraph as the hub of their telecommunications network that allows the participating teachers to stay in contact with their trainers and peers that they have met at the Workshops.

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Grade Level(s): 7, 8, 9, 10, 11, 12

Subject(s):

- Science/Space Sciences

Overview: This is a group activity that I found about 15 years ago. I use it in Earth-Space Science to make the differences between the environments on the earth and the moon more relevant, and to set the stage for our study of the basic environmental differences between the earth and other planets.

Purpose: Students memorize the environmental differences among the planets but usually do not develop a feel for how they might affect life in that environment. This lesson stimulates student thinking about what their life might be like on the moon and sets the stage for a brief study of the environments on other planets.

Objectives: Students will be able to:

1. Compare and contrast the environments of our moon and the earth.
2. Give practical examples of how these differences might affect one's daily activities on our moon.

Materials:

- pencils
- paper
- list of survival equipment and answer key (see **Internet** sites below)

Activities and Procedures:

1. The teacher or students who have done the necessary research compare and contrast, both verbally and in writing, some of the major environmental differences between the earth and our moon.

Examples of some major factors:

- a. Atmospheric Pressure
- b. Temperature
- c. Weather
- d. Gravity
- e. Organisms
- f. Oxygen available
- g. Crustal activity--quakes, volcanoes, movement

2. Examples are solicited from other students about how these differences might affect daily activities on our moon from the class.
3. Students are then divided into groups. Each group is the crew on a spaceship that is about to crash on the moon.
4. (Students usually read a prepared script describing their "crash" on the moon. One group of juniors and seniors took this activity on as a special project and worked up a skit, complete with a space ship, background music, black light, and a narrator.)
5. Following the crash, an announcement is made that the spaceship is disabled, the radio is broken, and nearest base is 50 km. away. Each group must get to the base with no outside help.
6. Their task is to decide as a group which emergency supplies from their disabled spaceship to take with them. They are to list the supplies in order of priority and state why they chose each item. Below is a partial list that is usually given:
 1. First Aid Kit
 2. Water
 3. Freeze dried food
 4. 50 feet of rope
 5. Parachute
 6. Inflatable Raft
 7. Small backpack Stove
 8. Stove Fuel
 9. Matches
 10. Standard backpack tent
 11. Sleeping Bags
 12. Pressure Suits
 13. Extra oxygen cylinders compatible with pressure suits
 14. Compass
 15. Map of Moon
 16. Suit repair kit
 17. Flashlight
7. Afterwards each group reports on their list and why they chose each item.

Tying it all Together:

1. The teacher or the students in charge discuss the "official list" and why the items were prioritized as they were. There are no real right and wrong answers although some items would obviously be more valuable on the moon in an emergency.
2. Students compare and contrast the environmental differences found on the earth and the moon on paper. They give examples of how each difference might affect their life if they were living on the moon.
3. The teacher uses this activity to introduce the study of the environments of the other planets.