Life on Other Planets

Purpose

Students will explain that we live on a planet which appears at present to be the only body in the solar system capable of supporting life.

Materials

For each group of students: poster board, paper, markers, tape, craft materials (e.g., felt, pipe cleaners, beads, construction paper, modeling clay, etc.)
For the class: research materials on each planet in the solar system

Activity

A. Pre-Activity Discussion

1. Ask students: "What do all organisms on Earth require to survive?"
2. Discuss with students how organisms require water, food/energy, and shelter (protection from weather and predators).
3. Ask students: "How do organisms on Earth get their food/energy?"
4. Discuss with students how the sun is the source of energy for almost all organisms on Earth.
5. Ask: "Do you think any organisms could survive on Earth if there was no sun to heat its surface?"
6. Discuss how the Earth would be a different planet without the sun. Explain that the organisms presently living on Earth would not be able to survive such cold temperatures.
7. Ask students: "Have scientists found any signs of life on other planets in the solar system?"
8. Discuss with students how no known life forms have been found on other planets, but that scientists continue to look for evidence.

B. Activity

1. Divide students into eight groups, and assign one of the following planets to each: Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto. [Note: There is current debate as to whether or not Pluto is actually a planet.]
2. Provide research materials, and tell the students in each group to research their assigned planet to find out its physical characteristics (e.g., distance from the sun, composition, surface features, etc.).
3. Instruct students to use the information to "create" an organism that could survive on that planet.

(continued)

INCORPORATING TECHNOLOGY

Have students visit the following Web site to explore weather conditions on other planets: dsc.discovery.com/convergence/planetstorm/weather/weather.html.

EXTENDING THE ACTIVITY

Have students search for recent newspaper and magazine articles on the search for life on other planets.

Standards Links
6.2.7, 6.3.1, 6.4.10

Activity (continued)

4. Tell students to begin by listing what types of characteristics their organism must have in order to live on the planet.
5. Distribute the craft materials and tell students to be creative and to use a variety of materials in constructing their organism.
6. When students have completed their organism, distribute poster board and markers to each group. Direct students to draw their organism, making sure to label all of the characteristics that allow the organism to survive on its home planet.
7. Tell students to include a written description of the conditions under which the organism lives on the planet, mention each labeled characteristic, and explain why the organism has the physical characteristics it has.

C. Share and Discuss

1. Direct each group to share its organism with the class, present the poster, and describe the organism's life on the planet.
2. Have each group post its picture and description around the room.
3. Ask students: "Are there any known organisms on Earth which could live on another planet in the solar system?"
4. Discuss with students how Earth organisms require certain things that are not found on other planets in the solar system. Therefore, Earth appears at present to be the only body in the solar system capable of supporting life.

Classroom Assessment

Basic Concepts and Processes

At the conclusion of the activity, ask questions such as the following:

- Do we presently know of any organisms living on other planets in the solar system?
- What does your organism require to survive on its planet?
- How did you decide what your organism would look like and how it would live on the planet?