INTRODUCING THE TERM BIOLOGICAL DIVERSITY

Materials:

Optional: shapes (hearts, stars, clovers) cut from various materials (sandpaper, felt, paper)

Rationale

The term biodiversity is more easily understood when explained and experienced in a familiar environment with known factors.

Objectives

1. Students will understand the term diversity in its application to familiar things.
2. Students will learn that biological diversity is the variety of living things.

Procedure

1. Have students line up around the room, then arrange them in groups according to something they have in common (i.e. types of shoes, color of shirts, hair color, height, etc.). Do not tell students what criteria have been used to group them.
2. Ask students to determine the basis of each arrangement. Explain that the differences and commonalties selected for these groupings represent only a few measures of the range of diversity among the members of their class. This classification strategy is used to make it easier and more efficient to study a huge variety of biotic and abiotic factors. Repeat steps one and two several times, keeping a list of grouping criteria on the board.
3. Repeat the activity at least twice, asking students to choose their own criteria for grouping.
4. Brainstorm the meaning of the term "diversity." Then add the qualifier "biological" and discuss the implications of the qualifier and the meaning of the new term formed.

Extensions

1. For upper level students, the items grouped can be more specific. For example:
   - Models or actual animals from various groups such as reptiles, mammals, insects, etc.
   - Plant leaves--actual leaves or pictures of leaves.
   - Different shells--pelecypods / bivalves, turtles, exoskeletons, etc.
2. Divide the class into small groups and give each group a selection of shapes. The shapes should be varied (circle, heart, clover, star, etc.), and materials should also vary (felt, paper of different colors and / or patterns, sandpaper, etc.). Tell each group to classify their shapes, then go around the room and talk about the different methods students used to classify. Even though they are using essentially the same types of things, the classification methods will vary greatly. Some groups will classify by shape, some by pattern or color, etc. Use this activity to demonstrate to students that classification is a common process among people but it will vary with what the classifier deems to be an important trait. Emphasize that classification is a tool to make the study of diverse organisms possible.
3. Upper level students might produce dichotomous identification keys for various organisms or shapes. Make sure they understand that words such as big, little, etc. are not good descriptors. They must use specific terms such as more than three centimeters, less than five millimeters, etc. Good keys are short, clear, and accurate.

Correlation to National Science Standards
Unifying Concepts and Processes

Correlation to Arkansas Frameworks
Science: 5-8: LS2.3; 9-12: LS2.9
Math: N.P.O.1.1
Language Arts: R.1.5, R.1.7