Governor's Conservation Classroom Challenge

Challenge # MS - 2
Title: Schoolyard Bio-blitz
Grade Level: 6-8
Subjects: Science, Math

Abstract:
Biodiversity is important for sustainable ecosystems. This challenge is for the class to complete an investigation of the schoolyard or a nearby habitat and determine the biodiversity of that system. Students may choose to investigate the plant or animal community or both. Once the students have determined the level of biodiversity, they can opt to increase the biodiversity by planting native plants, adding shelters, or water that will increase animal diversity. Students could collect data during each season to get a more complete picture.

Objectives:
Students will: describe the importance of biodiversity in maintaining a healthy ecosystem on their schoolyard; utilize research materials to collect data on species of plants and / or animals in their schoolyard.

Materials:
Download the *Schoolyard Biodiversity Investigation Educators Guide* from www.fishwildlife.org click on Focus Areas and then on Conservation Education.
Clipboards, data collection sheets, field guides (optional) GPS units, digital cameras

Safety:
Follow outdoor safety standards; use sunscreen, carry a basic first aid kit, be able to identify poison ivy and other hazards.

Background:
Additional teacher background for this challenge can be found in the Virginia's Natural Resources Education Guide chapter on *Wildlife*

Procedure:
It is recommended that the teacher download the *Schoolyard Biodiversity Investigation Educator Guide* to assist with this challenge. The Guide contains all the data sheets and detailed instructions on conducting such an investigation. A summary of an investigation to meet this challenge is below.

Before any investigation can begin, students need to know where they are and where they have been. This is accomplished with a map of the study area or schoolyard. The map can be created in a number of ways; a simple hand drawn map on a piece of graph paper will work for some investigations. Students can also create maps using handheld GPS units supplemented with photos of different areas. The GPS units can be used to create an electronic map that can be added to as the investigation proceeds. If the study site is larger than can be investigated in a few class periods, consider dividing it into sections using a grid system with a smaller group of students responsible for each section.

Once the study site has been delineated students are ready to collect data on what plants or animals live

in their section. Download the data sheets from the Schoolyard Biodiversity Investigation Educator Guide
or create your own. Practice filling in the data sheets to make sure the students understand each category on the sheet. These sheets are designed to category classes of organisms not identifying individual species. Older students may want to use field guides to identify down to the family or species level.
If you choose to use field guides and identify individual species , review the guides if your students are not familiar with their use. You can also create a list of common plants or animals you know are in the area.

As a safety precaution you should visit the guidelines for conducting such an investigation. Suggested guidelines include; not wandering off to "visit" with other groups of students, not picking leaves off plants (unless part of the identification process), not picking up unknown species of wildlife especially mammals and snakes.

Go outside and investigate. Each group of students should have a clipboard with the data sheets, GPS unit or map to find their assigned section, a camera to record anything that needs to be brought back for further identification.

Once back in the classroom, tally the data from each section and calculate the biodiversity of the site and write up their conclusion. Directions for calculating biodiversity are included in the investigation guide. After determining the biodiversity discuss with the class if they believe the schoolyard or study site is a healthy ecosystem. What changes can they make to the site to increase the biodiversity.
Extensions: Compare the schoolyard to another nearby natural area or have students conduct the same study in their yards as an assignment and make comparisons. Map possible food webs and other relationships between the various organisms in the study site.

Additional Resources:

For a list of many of the wildlife species in Virginia visit: www.dgif.virginia.gov/wildlife . Classes can also click on Virginia Fish and Wildlife Information System to get a list of species within a 3 mile radius of the schoolyard.
In addition to the "Schoolyard Biodiversity Investigation Educator Guide" other field investigation guides can be downloaded at http://jjcdev.com/~fishwild/?section=conservation_education_toolkit