Simple Samples

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Standard Statement(s):
4.5.4A – Identify and categorize pests
– Know how pests fit into a food chain
4.5.7A – Identify different examples of pests and explain the beneficial or harmful effects of each
4.5.7B – Identify several locations where pests can be found and compare the effects the pests have on each location

Content Objective(s):
The students will be able to:

1. Conduct a simple, but accurate field study
2. Use keys to identify plants and animals to general groups
3. Write a field report
4. Recognize pest damage

Assessment Strategies:
Written report, discussion, written tests

Procedures:
Introduction:

As part of the IPM approach to intelligent actions it is necessary to enhance the student's powers of observation and evaluation. To do this it is necessary for the students to practice gathering data, evaluation of same, and interpreting what the data reveals.

After suitable class preparation, and perhaps practice with the dichotomous keys, assign students to work in groups of no more than four, distribute materials to each group, and adjourn to natural or cultivated areas adjacent to the school. Groups will distribute the hula hoop by randomly casting to establish a research area. Use smaller circles to sub-sample within the hula hoop (one or two per hula hoop). Have each group do this as many times as is practical for your application.

Data Sheet for environmental conditions and description of survey area is completed by designated student for each group and for each of the sampling sites.

After the field experience the students compare data collected from each group and interpret the results. Pest species should be identified and considered as a percentage of the total species surveyed. Populations of each species should be estimated and extrapolated for the surrounding area. Determination should be made as to current and potential pest problems and the method(s) recommended to be used to control these populations. Mapping of the species populations from the sampling site (depending upon size) may be useful to predict future populations and distributions.

References:
PSU Integrated Pest Management – various publications
USGS –
Illinois Natural History Survey Special Publication 18, July 1995
PSU College of Agriculture – various publications

Related Web Sites:
www.google.com
EPA Office of Pesticide Programs: http://www.epa.gov/pesticides/biopesticides
Penn State Pesticide Education Program: http://www.pested.edu

Suggested Level:
Grade 7 or 8
Fall or late Spring

Standard Category:
Science as Inquiry
Life Science
Science and Technology
IPM

Materials:
Hula hoops or similar standard area devices
Smaller circular area devices
Golden Books
Dichotomous keys to insects, plants, grasses
Other reference materials
Forceps
Collecting bottles
Plastic zip-top bags
Hand lens
Bug nets
Dissecting scopes

Instructional Strategies:
Direct Instruction
Project Based
Small Groups
Large Group
Research
Thinking skills

ENVIRONMENTAL CONDITIONS
Date: _____
Time of Day: _____ Temperature: _____°F Humidity _____%
Weather: _____

Sample Area: _____
_____

DATA LOG

Species	# in Sample Area	% of Sample Area	Class Total