

Lesson Title:	Diversity is a Forest
Grade(s):	9(10-12)
Prepared by:	George Braman, Griffin High School
Appropriate Science Areas:	Environmental, Biology
Science Concept(s):	Ecology and Biodiversity
Lesson Objective:	To determine the health of a forest site using species diversity.
Georgia QCC Standards:	<p>Environmental:</p> <ul style="list-style-type: none"> • Inquiry, Process and Problem Solving: Uses science process skills in laboratory or field investigations, including observation, classification, communication, metric measurement, prediction, inference, collecting and analyzing data. • Inquiry, Process and Problem Solving: Uses traditional reference materials to explore background and historical information regarding a scientific concept. • Interactions in a Biosystem: Recognizes the complex diversity of biota and their interactions in a biological system.
Background:	How healthy is your forest site? The natural resources (plants, animals, water, etc) can be used as an indication of health of a site. While it's true that tree monocultures (pine plantations) are extremely healthy, in a natural forest area the diversity of plant and animal species is related to the overall health of the site. Several different systems can be used to determine site health. In this exercise, you will look at the tree species to determine site health.
Materials:	Class set of tree guides- Peterson's field guide for trees
Preparation Time:	Time gathering books and other materials and setting up to display materials collected.
Teaching Time:	At least 2 class periods.
Procedures:	<ol style="list-style-type: none"> 1. Split class into groups of 3-4 students. 2. Select several different sites. A good site- an established stand of trees, a nature trail, a small, undisturbed site. A poor site- an area that has been developed or used recently- construction sites, abandoned land, etc. 3. Move your class to woodland site and have them spend the first day and have them spend the first day collecting a sample from all tree species present. Have them save the

	<p>leaves for a collection.</p> <p>4. Identify and count all species present on each site.</p>
Key Questions:	<p>1. How many tree species need to be present in a natural stand to consider a forest diverse? Healthy? (less than 3 not too healthy; 4-10 species=healthy; >10 species=very healthy)</p> <p>2. How many species were present on your site? Why was that number present on that site?</p> <p>3. Was your site different from other sites?</p>
Student Evaluation:	Participation in collection and discussion.
Helpful Hints:	<p>See your local GFC office or check your school or local library.</p> <p>Perform a water bioassessment as a class demonstration.</p> <p>Identify animal species as a class project.</p>
Related Activities:	Leaf Scavenger Hunt
Suggested Extensions into Other Curriculum Areas:	<p>Math: Graphs and Diagrams</p> <p>Language Arts: Research papers on biodiversity</p> <p>Social Studies: How have forestry practices of the past affected our current forests?</p> <p>Art/Music: Posters/Drawings of sites and species</p>