

<b>Title of Lesson Plan</b>	What Role Do Forests Play in Continuing or Renewing Our Planet's Resources?
<b>Prepared By</b>	Carrie Kunkle
<b>City and State</b>	Belding, Michigan
<b>Grade Level</b>	9-12
<b>Keywords (subjects covered)</b>	Ecology, photosynthesis, symbiosis, forestry, forest regeneration, mutualism, depletion of natural resources
<b>Brief Description</b>	Students will take a field trip to a local forest and gather objective data about the following concepts: forest ecosystems, different species of trees, photosynthesis, the interaction between the forest and the dominant wildlife of the forest. Students will then prepare a lab activity to teach other students about the importance of the planet's resources.
<b>Total Time Required</b>	3-5 class periods allowing for pre-lab instruction, actual field trip, time in the computer lab to prepare lab activity and time for presentations.
<b>Setting</b>	The setting should be a local forest, possibly state owned land or land owned by a nearby university, land owned by a private citizen that grants permission, or even a forest that the DNR may be conducting research on or can get permission for the school to visit.
<b>Lesson Objectives/Goals</b>	Students will understand the role of photosynthesis and the mutualistic relationship between plants and other living organisms. Students will learn key concepts on forest regeneration and the advantages of clear-cutting or selective cutting of climax forests. Students will understand the relationship between the ecology of a forest and the human impact on that ecosystem. Students will observe nature including dominant vegetation and wildlife. Students will look for the presence of invasive species or exotic species. Students will understand the difference between renewable and non-renewable resources and the impact of using those resources.
<b>Materials Needed</b>	Students will need the following things: notebook, clipboard, camera, pencil, prepared handouts that cover keying out specific species and procedures, long pants, closed toed shoes, bug spray and measuring tape.
<b>Standards Addressed</b>	These are the Michigan Standards addressed:  3.2.3 Classification C  3.2.4 Growth and development B  3.2.5 Photosynthesis C  3.5 Ecological Systems, including  3.5.1 Community relationships, including C predator/prey and symbiosis

	<p>3.5.2 Population B</p> <p>3.5.3 Transfer of energy (food chains/webs) C</p> <p>3.5.5 Human impact C</p>
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1. Students will be instructed by the teacher on major ecological concepts including photosynthesis, symbiosis, forestry and the conservation of natural resources.</li> <li>2. Students will brainstorm possible ideas for a lab activity.</li> <li>3. Students will attend the field trip and gather data.</li> <li>4. Students will return to the classroom and make a “recipe” for the lab which includes materials needed, overview or synopsis of what the objective of their lab will include, and procedure for completing the lab.</li> <li>5. Students will get the teacher’s approval for the lab.</li> <li>6. Students will design and prepare the lab activity.</li> <li>7. Students will present the lab activity to the class.</li> </ol>
<b>Assessment</b>	<p>Students will prepare a lab activity that integrates the role of ecology, photosynthesis, symbiosis, forestry, forest regeneration or other teacher approved concept.</p> <p>After presenting the lab activity the teacher will grade the lab for accuracy and students will give peer feedback and suggestions for improving the lab.</p> <p>Students will turn in the completed lab.</p>
<b>Literature Cited/References</b>	<p>www.Michigan.gov</p>
<b>Forestry Tour Attended</b>	<p>Lake States, 2008</p>

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