

Ecology Scavenger Hunt

WebQuest Description: Providing an interesting way for 9th grade biology students to learn about Ecology topics

Grade Level: 9-12

Curriculum: Science

Keywords: ecology, biodiversity, environment

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Introduction

Welcome to the World Wide Eco-Web! Today you are going to embark on an exploration of the essential themes in Ecology. This Webquest consists of different sections for each theme. Be sure to use the information in the websites to correctly answer the questions for each step of the process.

Tasks

You will be investigating populations, communities, ecosystems, food chains, food webs, and the water, nitrogen and carbon cycle. Then you will investigate the different biomes on Earth. Finally, you will discover how humans have an impact on ecosystems.

Process

Before you begin, download and print the Ecology Worksheet. Use the directions below to find the answers to the questions...1. PopulationsGo to the website http://www.geography4kids.com/files/land_population.html Answer the questions #a through c2. CommunityGo to the website <http://library.thinkquest.org/28343/commun.html> Answer questions #d and e3. EcosystemsTo learn about ecosystems go to <http://forest.mtu.edu/kidscorner/ecosystems/definition.html> Answer #f through h4. BiodiversityGo to <http://www.dublin.ie/environment/biodiversity/home.htm> Answer #i and jFactors Affecting Biodiversity<http://library.thinkquest.org/CR0210243/Science%20Station/How%20living%20things%20interact%20with%20their%20environment/relationship%20of%20biotic%20and%20abiotic%20factors.htm> Answer #k and l5. Food ChainsGo to <http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/foodchain.htm>Use the following organisms to create one:SnakeFrogCaterpillarOwlFlowerDiagram this on your worksheet!To answer questions m through o go to<http://www.sheppardsoftware.com/content/animals/kidscorner/animaldiet/herbivore.htm> herbivores<http://www.sheppardsoftware.com/content/animals/kidscorner/animaldiet/carnivore.htm> carnivores<http://www.sheppardsoftware.com/content/animals/kidscorner/animaldiet/omnivore.htm> omnivoresWhen you have completed #m-o go to <http://www.sheppardsoftware.com/content/animals/kidscorner/games/animaldietgame.htm> to play a game to review these these terms6. Food WebsGo to http://www.harcourtschool.com/activity/food/food_menu.html and choose one of the three food webs. Put the food web together!Now answer # p through r7. Energy in an Ecosystemhttp://www.harcourtschool.com/activity/science_up_close/314/deploy/interface.html Use your worksheet to describe what you learned under #a!8. The 10% ruleGo to p. 88 in your textbookAnswer #b9. Carbon cycleGo to http://epa.gov/climatechange/kids/carbon_cycle_version2.html Click and complete scene 1 Answer #c on your worksheetGo to http://www.windows.ucar.edu/tour/link=/earth/Water/co2_cycle.htmlRead about the carbon cycle and complete #d through iDiagram the carbon cycle10. Nitrogen CycleGo to the website http://www.windows.ucar.edu/tour/link=/earth/Life/nitrogen_cycle.html Diagram the nitrogen cycleAnswer the questions #j through m11. Water CycleGo to http://www.windows.ucar.edu/tour/link=/earth/Water/water_cycle.html Diagram the water cycle12. Biomes Around the WorldGo to <http://www.ucmp.berkeley.edu/exhibits/biomes/index.php> To answer #n, use your textbook, p. 82Answer #o 13. Using your worksheet, write a 100 to 200 word paper (Times New Roman, size 12 font) addressing the following issue:Construction and housing projects have been held up because of the presence of a rare species. Are we really worse off if we lose 1 or 2 species? AND Why is it so important that we have a variety of species? Staple your typed essay to the front of your completed worksheet.

Evaluation

Category and Score	Beginning 1	Developing 2	Very Good 3	Exemplary 4	Score
Focus	Attempts to take a position (addresses topic), but position is very unclear OR takes a position, but provides minimal or no support; may only paraphrase the prompt. x3	Takes a position and provides uneven support; may lack development in parts or be repetitive OR essay is no more than a well-written beginning. x3	Takes a clear position and supports it with some relevant reasons and/or examples; there is some development of the essay. x3	Takes a clear position and supports it consistently with well-chosen reasons and/or examples; uses many facts to back up position. x3	12
Organization	Exhibits little or no apparent organization. x2	Is organized in parts of the essay; other parts are disjointed and/or lack transitions. x2	Is well organized, but may lack some transitions. x2	Is focused and well organized, with effective use of transitions. x2	8
Sentence Fluency and Word Choice	Sentences run-on and appear incomplete or rambling; word choice may be inaccurate in much or the entire essay. x2	Sentences lack formal structure; word choice may often be inaccurate. x2	Most sentences are well constructed but have similar structure; word choice lacks variety. x2	Consistently exhibits variety in sentence structure and word choice. x2	8
Conventions	Errors in grammar, spelling, and punctuation prevent reader from fully understanding essay. x2	Errors in grammar, spelling, and punctuation interfere with understanding in much of the essay. x2	More frequent errors in grammar, spelling, and punctuation, but they do not interfere with understanding. x2	Errors in grammar, spelling, and punctuation are few and do not interfere with understanding. x2	8
				Total Score	36

Conclusion

Congratulations! You should now understand why biodiversity is so important. You can now see why learning about food chains, food webs, energy flow, and human impact is so essential.

Teacher Page

Focus:The objective of this WebQuest is to provided 9th grade Biology students an interesting way to learn about key topics in Ecology. **Objectives:**I would recommend using this project to introduce Ecology to your students. It will expose them to key ideas and key terms as well as allow them to use technology. Students will also get practice writing. **State Standards (CA):**
6.Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept: a.Students know biodiversity is the sum total of different kinds of organisms and is affected by alterations of habitats.b.Students know how to analyze changes in an ecosystem resulting from changes in climate, human activity, introduction of nonnative species, or changes in population size.d.Students know how water, carbon, and nitrogen cycle between abiotic resources and organic matter in the ecosystem and how oxygen cycles through photosynthesis and respiration.e.Students know a vital part of an ecosystem is the stability of its producers and decomposers.f.Students know at each link in a food web some energy is stored in newly made structures but much energy is dissipated into the environment as heat. This dissipation may be represented in an energy pyramid.
Resources: Prerequisite Skills: Comfort level with the InternetTime Required: 1 block period + time to finish at home. Technology Needs/Materials NeededStudents will share laptops in class. They will need access to the Internet and Microsoft Word. Students will also need the Ecology Worksheet.
Credits: The resources and web links included on this website are external websites. I would like to thank the owners/creators of the sites for allowing my students access to them!

Standards

Credits

Other