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Title: Nature Conservation Case study

Grade Level(s): 5-6

Time/Date:

School:

Teacher:

Directions to school, class:

Contact Info:

Vocabulary: Words & Concepts your class may be learning, look these up yourself too!

Habitat – The type of environment in which a species normally lives

Biodiversity - The number and variety of organisms found within a specified geographic region

Ecosystem - An ecological community together with its environment, functioning as a unit

Materials and Equipment: List these before and while you plan and revise so you're prepared.

Explanation of the case study (see supplementary material on the website). Print out on recycled paper 5 times.

What is your class accomplishing?: Learning & Activity Goals, Objectives

- **Understand the importance of preserving biodiversity**
- **Understand the importance of healthy ecosystems**
- **Learn to do natural planning for a certain area**
- **Understand different views people might have about nature conservation**

PROCEDURE

The Spark: Introductions, Demonstrations, Show and Tell, Topic Intro (Break the ice!) ~5-10min

Hi everyone, today we will talk about nature conservation.

Why is it important that nature is preserved? For survival of many species; to maintain biodiversity. For our own health, for the economy, to preserve different cultures, etc. (try to get students to think outside the box, nature is not only pretty with cute animals, but we depend on nature in various ways; social, economical, cultural)

*Write on the board **Species to an ecosystem is like _____ to a _____**. Ask some students to finish this sentence in a creative way. Goal: to make students understand that all species are necessary to maintain a healthy ecosystem. (ingredients to a pie, all nuts and bolts to a plane)*

Emphasize that all species are essential for an ecosystem to function, because each species has a certain task in the ecosystem. When some species are removed due to human disturbance, the entire ecosystem can collapse.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play ~50mins

Case Study on biodiversity:

If the area around the school has an interesting natural site you can change the case study to relate to that specific area (real life experience is much more fun!). If not, then use the fictional scenario below. First, explain the case study to the class, then divide the class into three groups and hand out an instruction form to each of the groups.

Explain that they will be forming 3 groups with different interests to decide what will happen with a natural area. They will write a proposal with their group and present their proposals to the class. This case study will last for the entire hour.

The scenario:

You live in a small city. Just outside town there is an area of 10 km² that is so far undeveloped. It consists mainly of forests, with a little stream running across it that forms a wetland and a small lake at the southern part of the area. (show the map of the area) The biodiversity is very high. There are lots of interesting plant and animal species.

But the area is being threatened. A developer has planned to create lake-view villas and cottages. The local government is planning to give the go-ahead because the cottages will attract rich tourists that will help to stimulate the local economy.

Some biologists from the nearby university have discovered that a rare turtle species lives in this wetland; the spotted turtle. Also they found the forest-wetland to be the home of a rare bird; the Prothonotary warbler. They argue that if this area is developed, these already endangered species might disappear from the area. Besides the developer and biologists, recreational users (both the people who would perhaps buy or rent the cottages and local people) have a say in this. They want to use this area for recreational purposes.

The local government organizes a meeting in which each interest group can suggest ways to use this land. With the map, each interest group should make a clear proposal on how they plan to develop the land (or not). Indicate on the map what you want to do with the area, and write a 1 page proposal explaining what should be done and why.

*Each interest group gets 20 minutes to make a proposal. When you are making your proposal keep in mind that it has to cover certain factors: 1) **Economic** (you have to make money or give people jobs) 2) **Social/community** (it has to be beneficial for the people) 3) **Environmental** (has to be good for the environment). Write these 3 factors on the board. **Think about short term and long term benefits!***

Each group also has to discuss and list the reasons why they think nature is important and why endangered animals and habitats should be protected from their interest group point of view (perhaps recreational users would find it pretty, and biologists want to study the species, etcetera).

Divide the class in 3 groups. group 1 are the developers, group 2 are biologists, group 3 are the recreational users. You can let the students decide what group they want to be in, as long as there are equal numbers in each group.

Every group should present their proposal in max. 5 minutes. After each presentation the other groups can ask critical questions. After each presentation the class should decide what the 2 best aspects of the proposal were.

After the presentations the groups should discuss the outcomes and come up with a final solution how to use the land. One of the most democratic ways is to combine the best of each proposal to make the perfect plan!

After the presentations and final decision, end with a short discussion:

What are different reasons people think it is important to preserve nature? List these answers on the board. Five major categories of these arguments are as follows:

- Economic: "Nature can help people make money or keep people from losing money."
- Recreational: "People love outdoor activities like fishing and backpacking, which would not be possible if ecosystems were destroyed."
- Human health: "Nature and biodiversity can help people find better cures for illnesses."
- Human rights: "If nature is protected, indigenous people can continue to live in their native lands."
- Spiritual/intrinsic value: "Animals and plants have a right to live," and "People rely on wild places and creatures for spiritual fulfillment."

Discuss the groups' ideas with the class. Inform students that, as they may have already realized from making their lists, there is more than one argument in favor of preserving biodiversity and maintaining healthy ecosystems.

Ask students if they've identified any of these types of arguments in their lists. Tell them that many people who believe biodiversity should be preserved will use more than one of these arguments to make his or her point. For example, a person may believe that every species has an intrinsic right to live but may also be excited about prospects for finding new medications from the Earth's plant and animal species.

Review, Conclusion and steps towards continued action ~5-10mins

What did we learn today? What did you like most about this lesson? What reason to preserve biodiversity is most important to you? Why? Why is it so difficult to reach agreement on how to preserve nature?

References

1. <http://www.nationalgeographic.com/xpeditions/lessons/08/g68/preserve.html>
2. http://www.speciesatrisk.gc.ca/search/speciesDetails_e.cfm?SpeciesID=285
3. http://www.speciesatrisk.gc.ca/search/speciesDetails_e.cfm?SpeciesID=31

Great work ecoMentor! After use of Lesson Plan revise, add ideas and repeat!