

The A's and Q's of Forest Biodiversity



Summary

Students will create questions and corresponding answers about forest biodiversity and then play an interactive game.

Activity Information



Level: Grades 4, 6 and 7

Subject: Life Science: Habitats and Communities, Diversity of Life, Interactions Within Ecosystems; Language Arts; Drama

Estimated Duration: One 60 minute class period for initial discussion, and to develop the answers and questions; a second class period to play the game and debrief students about forest biodiversity.

Materials: Markers, index cards (5 x 7) or similar sized pieces of paper or cardboard, tape (or something to stick cards to the wall or floor)

Learning Outcomes

Students will:

- Demonstrate that specific terminology is used in science and technology context. Use appropriate terminology such as habitat, food chain, etc.
- Predict how the removal of a plant or animal population affects the rest of the community.
- Identify a variety of local and regional habitats and their associated populations of plants and animals.
- Describe how a variety of animals are able to meet their basic needs in their habitat.

Teacher Background

Biodiversity can be defined as: The variety of life on earth, different species, genetic variability

within species and the variety of ecosystems in which they live. Put simply, it refers to the variety and complexity of all living things and the way they interact within ecosystems.

Biodiversity is found throughout all types of ecosystems: grasslands, wetlands, urban areas, and indeed, forests.

Today, forest managers, companies and woods workers are recognizing the importance of protecting biodiversity and they use sustainable forest management as a tool to do this. Forest managers are protecting habitat for various plant and animal species by leaving buffers along streams, not logging certain animal breeding grounds, and protecting areas that have scenic values to people.

Land use planning is an important function in sustainable forest management. Forest managers need to know everything about a forest – the environmental, economic and social features – so that they can make informed decisions about how it should be managed.

It's not just the trees that make a forest diverse, it's the soils, mosses, beetles, birds, squirrels, hawks . . .it's EVERYTHING and how everything interacts between and among one another! Every species, whether plant or animal is inextricably linked to another – biodiversity is everywhere.

NOTE: You might consider doing this activity at the end of the unit as an assessment tool, rather than giving a test.

Procedure

Step 1

Begin this activity with a brief introduction about biodiversity and forest ecosystems. Ask your students to describe the components of a forest ecosystem and how they relate to one another. How can careful management of a forest encourage biodiversity? Have students consider a variety of management activities – reforestation, harvesting, prescribed burns, etc. and determine how they each contribute to biodiversity. Ensure

that students understand that biodiversity is an important component of all sustainable forest management activities and many activities encourage biodiversity in the forest ecosystem.

Step 2

Explain to your students that they will be participating in an interactive game, but you want to go over a few concepts before they begin. Do a quick review of some of the words provided in the list in Step 3 to make sure students are familiar with each and understand what they mean. You could treat this as a question/answer activity or a simple teacher review.

Step 3

Introduce the “A’s and Q’s of Forest Biodiversity” activity. Let students know that this activity is similar to *Jeopardy*, but focuses on biodiversity concepts in a forest ecosystem. Explain that they are going to create their own classroom version of the game. They now have to identify six categories for the questions and answers, all of which must relate to sustainable forest management and biodiversity. Have students brainstorm a list of possible categories. You can use this list as a starting point for their brainstorming activities:

- Tree canopy
- Mammals
- Birds
- Soil
- Plants
- Understory
- Predator
- Food chain
- Water
- Hardwood forest
- Boreal forest

- Forest fire
- Habitats and communities
- Natural disturbances
- Protected areas
- Species at risk
- Sustainable Forest Management

Step 4

Have the class choose six categories, and write them on the board/flip chart. Divide the class into six groups (four to five students per group), and assign each group one of the categories. Each group will be responsible for developing the answers and questions for their category. Hand out the index cards so that each student has one card. Explain that they each must develop at least one question and answer for their particular category. You may assign more, particularly at the grade 7 level. Each question must relate to sustainable forest management and/or biodiversity. If the group needs more cards, they can ask for more. Each student should write his or her question on one side of the card, and then write the answer on the other side of the card.

Once everyone has completed his/her question(s)/answer(s), collect the cards. Make sure you keep each category separate. Select five A’s and Q’s from each category and you are ready to begin the game!

NOTE: You may have a few key questions/answers for each category that are specific to your local region/town/geography. Make sure to include these as one of the five A’s and Q’s. If students can answer these correctly, they can receive double points.

Step 5

Take the cards and tape them to the black board or to a flip chart, answer side out. (You and your students can change how the game is presented by putting the cards

answer up in the middle of the classroom floor, gym floor, or challenge your students to figure out how you can play the game outside!) Once all of the index cards are in position, you can begin the game. Ask your students to remain in their original groups.

Step 6

Playing the Game

You can now assume the role of “Game Show Host” or you can ask one of the students to take that role. Pick a group to go first. That group will select a category – but they cannot select the one for which they created the answers and questions! You (or whoever is Game Show Host) will read the first answer out loud. Then, turn the card over so you will know if the group provides a correct question. Groups will be given ten seconds to provide an answer. Use your discretion – if you need to give the students more time, do so. If they are answering quickly, shorten the time.

Encourage one student per group to answer at a time, rather than having everyone from their group answer at the same time.

If the group responds with a question correctly, they get to continue playing, either staying in the same category, or moving to a new category. If they are incorrect, they lose their turn. You can then allow any student from any group to reply with the correct question – they

can put up their hands, ring a bell, etc. The game continues until all of the categories are covered and all answers/questions are posed.

If you choose to keep score (five points per correct question), whichever group gets the most correct questions wins the game. If you do not keep score, have the students de-brief the activity by talking about their favourite answers and questions.



Extensions

- Have your students create new categories and play the game again.
- Challenge students to create answers and questions relating to classification of plants and animals they have studied.
- Your class can organize an “A’s and Q’s of Forest Biodiversity” for other classes doing the same unit of study. You might consider setting up a “round robin” and chart the winners from around the school on a challenge sheet.

