LESSON PLAN: ECOLOGICAL RELATIONSHIPS

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North Carolina Essential Standards (Biology)

OBio.2.1 - Analyze the interdependence of living organisms within their environments.

- **Bio.2.1.2** - Analyze the survival and reproductive success of organisms in terms of behavioral, structural, and reproductive adaptations.
- **Bio.2.1.3** - Explain various ways organisms interact with each other (including predation, competition, parasitism, mutualism) and with their environments resulting in stability within ecosystems.

Learning Objectives

- Objective #1: Define and describe the possible ecological relationships between species that coexist in an ecosystem
- Objective #2: Classify specific interspecies relationships as mutualistic, commensal, or parasitic
- Objective #3: Understand that ecological relationships evolved over time and are integral to maintaining the balance and stability of ecosystems

Teacher Preparation & Materials

- Preview all of the video clips used in the lesson.
- Download the video clips used in the lesson to your classroom computer, or prepare to watch them using your classroom's Internet connection.
- Make necessary copies of Ecological Relationships Student Organizer handout

Instruction

The topic of ecological relationships consists of many challenging vocabulary words, making it important that students understand the key terms prior to the lesson. As an assignment due at the beginning of this class period, the students will develop a Wordle comprised of the vocabulary, found in the appropriate chapter of their textbook, that they feel sums up this topic. They will then learn the meaning of each term in their Wordle. We will post the Wordles in the classroom and go over the key terms within them, with each student explaining the meaning of at least one word to the rest of the class. Each student's ability to explain the meaning of a term in their Wordle, which cannot be a repeat of a previous student's choice, will provide some feedback as to the effectiveness of this activity.

This lesson focuses on symbiosis and ecological relationships. Students will investigate the many ways that species that live in close proximity to each other might interact in an ecosystem, whether via competition or predation or through an ongoing symbiotic relationship such as mutualism, commensalism, or parasitism. Segments drawn from the NATURE episode *The Secret Lives of Sharks and Rays* will be used to provide specific examples of these interactions. The students will discover that all ongoing ecological relationships, even parasitic or predatory ones, have evolved over long periods of time and are integral to the maintenance of the balance and stability of an ecosystem.

The teacher will distribute the Ecological Relationships Student Organizer handout to each student, and inform them that they will be watching several video clips that capture ecological relationships between ocean species. They will be making predictions about the relationships between the species and will check their predictions with the information given in the videos. The teacher will show the clips, allowing time in between for discussion of the relationships witnessed. The clips will be followed up by reviewing the answers to the handout. The students will be asked to explain if the actual relationships were different than the ones the students predicted.

Assessment

The students will be assessed based on the completion of their Wordle assignment and the Ecological Relationships Student Organizer. Their participation throughout the lesson will also be evaluated. The students' understanding of the material covered will be determined based on their performance on the unit test.

Resources

- http://www.pbs.org/
- http://www.wordle.net/
- http://www.dpi.state.nc.us/