

Lower Grades- Lesson Topic: Plant Structures and Functions

Unit Description:

In this lesson, students will explore the forest through the UMP: The Biofore Company virtual field trip. In this virtual field trip, students are able to zoom in, look up and down, left and right, and ‘walk’ through the forest with their mouse. They can also click on different plants or animals in the forest to reveal videos of forest life, pictures with information, and sounds (ilearntechnology.com, 2013). Once students have observed the forest and recording their observations using words and pictures, the class will set up a videoconferencing session with a classroom that has completed a similar tour of a different ecosystem. Students will be able to present the observations of their ecosystem while learning about another ecosystem from a different group of students.

The first step in successfully implementing this unit into the classroom is to establish a partnership with a participating classroom from a different part of the world (could be same country but should have a different climate/ecosystem). The Cooperative Educational Services Agency (CESA 7) and The Center for Interactive Learning and Collaboration (CILA) in the technology tools sections list thousands of different schools in areas both inside and outside the United States that have access to videoconferencing and their contact information. The classrooms listed in these directories are interested in establishing educational partnerships and should be contacted before the beginning of the year to effectively plan for an upcoming unit.

Use the sample letter in the resources section for an example of what could be sent as an initial contact to potential cooperating classrooms.

Objectives:

- ⌚ Students will observe and record the characteristics of a forest ecosystem.
- ⌚ Students will learn about the structure and function of different plants and animals found in a forest ecosystem.
- ⌚ Students will complete a labeled drawing of what they learned about the forest ecosystem and present their findings to another classroom.

Standards (California State Content Standards):

CA- California K-12 Academic Content Standards
Subject : Science
Grade : Kindergarten
Area : Life Sciences
Sub-Strand 2: Different types of plants and animals inhabit the earth. As a basis for understanding this concept:
Standard a: Students know how to observe and describe similarities and differences in the appearance and behavior of plants and animals (e.g., seed-bearing plants, birds, fish, insects).
Standard c: Students know how to identify major structures of common plants and animals (e.g., stems, leaves, roots, arms, wings, legs).
Area : Investigation and Experimentation
Sub-Strand 4: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
Standard e: Communicate observations orally and through drawings.
Grade : Grade One
Area : Life Sciences
Sub-Strand 2: Plants and animals meet their needs in different ways. As a basis for understanding this concept:
Standard a: Students know different plants and animals inhabit different kinds of environments and have external features that help them thrive in different kinds of places.
Standard b: Students know both plants and animals need water, animals need food, and plants need light.
Standard c: Students know animals eat plants or other animals for food and may also use plants or even other animals for shelter and nesting.
Standard e: Students know roots are associated with the intake of water and soil nutrients and green leaves are associated with making food from sunlight.
Area : Investigation and Experimentation
Sub-Strand 4: Scientific progress is made by asking meaningful questions and conducting careful

investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
Standard a: Draw pictures that portray some features of the thing being described.
Standard b: Record observations and data with pictures, numbers, or written statements.
Standard e: Make new observations when discrepancies exist between two descriptions of the same object or phenomenon.
Grade : Grade Two
Area : Life Sciences
Sub-Strand 2: Plants and animals have predictable life cycles. As a basis for understanding this concept:
Standard e: Students know light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
Standard f: Students know flowers and fruits are associated with reproduction in plants.
Area : Investigation and Experimentation
Sub-Strand 4: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:
Standard a: Make predictions based on observed patterns and not random guessing.
Standard c: Compare and sort common objects according to two or more physical attributes (e.g., color, shape, texture, size, weight).

Sample Lesson:

Individual Instruction: Before going to the computer lab for individual instruction, take the students on a whole group virtual tour to show them how to use the site and give them some background knowledge on what they are about to learn. Have the students bring blank paper and a pencil with them so that they can draw and label a picture of what a forest ecosystem looks like using the UBM Forest Life as a guide. For younger students, have some basic outlines of trees, leaves, and common animals for them to copy. Students will be told valuable information about the function and structure of different plants and animals as they proceed through the tour. When students leave the computer lab, they should have a pencil drawing and labeling of the forest and a basic understanding of the function and structure and common wildlife of a forest. Once students return to the classroom they can add to

their drawings a color to make more visually appealing for showing (have them use bright colors and dark outlines so their pictures are visible via webcam).

Whole Group Instruction: After the students have completed their labeled illustrations, set up the videoconferencing session with the cooperating classroom that completed a similar activity with a different ecosystem. If possible, have students (and yourself) bring in items that they saw in the virtual field trip in the classroom over a period of time before the videoconferencing session like leaves, pictures of plants of animals, soil samples, etc. The two participating classrooms will share their drawings any items that they brought in with each other while also giving a basic explanation of plant and animal structure. An outline can be given to the students and completed as a class to make this sharing easier for students who may have difficulty with this. This lesson is highly engaging for younger students because they are able to visually interact with the forest life and build vocabulary by associating vocabulary with tangible items.

Assessing the Tool:

1. Was the tool simple to use as a teacher? For the students?

2. Did the use of this tool increase student global awareness?

3. What could be done differently to maximize the effectiveness of the tool?

Assessing the Lesson:

1. Did this lesson enhance student multicultural understanding?

2. Did this lesson develop collaborative skills amongst the students?

3. Did this lesson allow students to reach an understanding of the overlying concepts and objectives?