



Forest Ecology Pre-visit

Classroom Activities

Brief Synopsis

Everywhere you go in the world there are ecosystems or geographical areas dominated by certain plants and animals, which are driven by the geology and weather patterns, or climate. Ecosystems are also called biomes and understanding what makes each biome different requires an understanding of how the biotic (living) and abiotic (non-living) parts of an ecosystem impact one another.

Ages: Designed for 5th–8th grade

Time Considerations:

10-15 min introduction and at least 1 hour of research time.

Materials:

- Photo copy of worksheet (1 per student or team)
- Pencils or pens
- 2 colors of markers for each student or team
- Access to the computer lab or library for research

Vocabulary: Abiotic, biome, biotic, climate, disturbance, ecosystem, succession

Outcomes:

1. Students will be able to explain why an ecosystem is dependent on both living and non-living factors.
2. Students will compare and contrast two of the earth's similar biomes.
3. Students will map and describe the location of two of the earth's biomes.
4. Students will use appropriate research techniques to compile information about ecosystems.
5. Students will understand why different ecosystems are important.

Minnesota Academic Standards:

Science: 7.I.A.2, 7.IV.C.2-3

Language Arts: 5.I.B.1-3, 5.I.C.2-3, 5.II.A.C, 5.II.B.3e,4 & 5, 5.II.B.4-5, 5.II.C, 5.II.E, 5.III.A.4, 6.I.B.1 & 3, 6.I.C.2,6,10&11, 6.II.A.1, 6.II.B.3,4e, & 5, 6.II.C, 6.II.D.1, 6.II.E, 6.III.A.6, 7.I.B.1-2, 7.I.C.2&4, 7.II.A.1, 7.II.B.3,4e&5, 7.II.C, 7.II.D.3, 7.II.E.1-2, 7.III.A.6-7, 8.I.B.1-2, 8.I.C.2&13, 8.II.A.1, 8.II.B.3,4,6e&7, 8.II.C, 8.II.D, 8.II.E.1-2, 8.III.A.6

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Set-up

There are hundreds if not thousands of ecosystems in the world, so many scientists and organizations group these areas together by common attributes. One group may call all dry landscapes Deserts for example, while another group may separate them into Hot Desert, Cold Desert, and Costal Desert, depending on their average temperatures and their locations on the continents. There is no one right or wrong way to categorize each biome, but for simplicity sake, you may want to designate which 5-20 biomes you will be using in your class.

Activity 1: Biome Roam

Background: An ecosystem can be any size, but it must have living and non-living parts that influence and impact each other. The largest ecosystem is the Earth, and the smallest may be microscopic communities. The most common way to designate the largest ecosystems on the planet is to call them biomes, which tend to have climatic conditions that define the boundaries. Getting to know just a few of the world's biomes will help you better understand how each one is comprised of not only the plants and animals we might see when we visit it, but the differences in soil, water, and weather patterns, that go into shaping what kind of plants and animals can survive there.

Procedures:

1. Decide which biomes or ecosystems you want your students to learn about by spending some time looking through the resource materials. There are many ecosystems that are similar to each other, but can still be classified as separate biomes. Have each student choose two similar biomes or ecosystems to compare and contrast.
2. Print off enough worksheets for each student (or less if you are having them work in pairs or teams) and distribute them accordingly. Give the students the appropriate websites to explore, or have them conduct the research with resources from the library.
3. Use their findings to construct a world map, presentations, or reserve their findings as the basis for the post-visit activity.



Teacher Tips

- Because many biomes go by different names, and different organizations combine them together differently, limit the types of biomes or ecosystems your students have to research.
- Get an idea for yourself what level of research you expect from your students before their assignment. Perhaps fill out a worksheet yourself with two biomes they will not be using, or create imaginary biomes to suit the purpose.

Additional Resources

<http://www.thewildclassroom.com/biomes/index.html>

Cool interactive map with 8 main biomes and 20 sub-categories, a great place to choose which biomes you are most interested in selecting for your class. This site is still in development, so not every feature is fully functioning, but many of them have video clips and links to further investigate each biome.

<http://www.ucmp.berkeley.edu/exhibits/biomes/index.php>

The University of California Berkeley breaks up the world's biomes into 6 main divisions and 17 regions. It is easy to navigate and provides examples of each biome (many in California) and some photographs.

<http://www.runet.edu/~swoodwar/CLASSES/GEOG235/biomes/intro.html>

This page from Radford University introduces the concept of a biome at a fairly high level, but also contains links to 8 biome regions.

<http://www.mbgnet.net/sets/index.htm>

This website is hosted by the Missouri Botanical Garden and is designed for kids. It is less straight forward, so requires more exploring to find some of the information on the 12 biomes they define.

http://blueplanetbiomes.org/world_biomes.htm

This website from Blue Planet includes a nice color world interactive map, on which you click to learn more about the 10 biomes they describe.

The Biome Roam

Names of Biomes: _____ and _____

List at least 6 biotic and abiotic factors unique to these biomes.

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2. Where in the world can you find each biome? Describe the locations in your own words, then color in the regions on the map below. Make sure to use two different colors.

