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# Grades 6-8 Ecology

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# **Differentiated Unit Plan**

Jessica Williams

**Topic:** Ecology

**Grade:** 6

**Time:** 1 ½ - 2 weeks

**Essential Questions:**

1. How can we raise awareness about the state of our National Parks?
2. How can the ecology information learned in class be applied to the real world?

**Objectives:** Students will be able to:

1. Apply knowledge of ecology to create a project on one of the United States' National Parks.
2. Work collaboratively with other students.

**Materials:**

National Parks Project packet  
Computer access  
Poster board  
Library reference materials

**Procedure:**

1. DO NOW: Students will answer the following question in the Learning Log section of their binder: Why is it important to protect our National Parks?
2. Students will then share their responses to the learning log with the class.
3. Students will be divided into groups of 3: I will have pre-selected groups for them.
4. In their groups, students will begin brainstorming ideas on how they will present their Park once chosen.
5. Variations for differentiation:

- a. The project will be tiered by complexity. Since the groups will be created based on ability, each group will have an assignment packet appropriate for those learners.
6. Over the course of 1 ½-2 weeks, students will conduct research and work on their projects in both the library and computer lab.

**Wrap-up:**

1. On the final few days, groups will present their completed project to the class.

**Assessment:** Learning log activity, observation while class is working, class discussion and presentations, physical product

MODIFIED VERSION

Science 6

Name \_\_\_\_\_

Ecosystem Project

Class: \_\_\_\_\_



**National Park Service**  
U.S. Department of the Interior

## National Park Service Information

Imagine you want to take a trip to one of the many National Parks found in the United States. Which one would you choose and why?

In this assignment, you are to create a slide presentation or poster that profiles one of the parks using the following criteria:

1. Geographical location (where in the United States)
2. What type of biome is represented?
  - General characteristics of that biome
  - Climate (yearly weather patterns), temperature, rainfall
3. Flora (plant life) of the park: **1-2 examples**
4. Fauna (animal life) of the park: **1-2 examples**
5. Any special features or characteristics of the park (be sure to include both biotic and abiotic factors)
6. Present a typical **food chain** for this particular national park. Make sure you include the following: producers, consumer, and decomposers (If you can use the program *Inspiration*, this makes a terrific food web)

Using either Pages, Keynote, or PowerPoint, create a brochure or slide program describing the park you have chosen. Pretend that the brochure/presentation is an advertisement and you are trying to convince travelers to visit the park. Make sure you include the 6 qualifiers listed above. **Feel free to incorporate pictures, diagrams or illustrations if you like.**

Be sure to use the following terms that you learned in this unit where appropriate:

- ♣ **Ecosystem**
- ♣ **Niche**
- ♣ **Habitat**
- ♣ **Population**
- ♣ **Community**
- ♣ **Carnivore, herbivore, omnivore, scavenger**
- ♣ **Competition, predation, symbiosis (parasitism, mutualism, commensalism)**

#### **REFERENCE MATERIALS:**

The National Parks Service web site gives you access to information about all of our nation's parks. This is the site you will be using to conduct your research along with reference materials from the library. You may use other web sites as well but need to list these as a reference, along with any books used.

<http://www.nps.gov>

In addition to the given requirements, please include **1-2 of the following items** in your brochure:

- ♣ Appropriate humor (i.e., cartoon, comic) having to do with ecology of the region (Far Side comic?)
- ♣ 1-2 interesting historical facts about the park
- ♣ Pick one organism (plant, animal, or other) from the park and write a brief profile on that organism
- ♣ A small Word Find or crossword puzzle about ecology
- ♣ Pictures, illustrations, graphics, diagrams
- ♣ Some “fun facts” about the park

**Progress check date:** \_\_\_\_\_

**Due Date:** \_\_\_\_\_

## **SCIENCE 6      ECOSYSTEM LAB PROJECT RUBRIC**

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

<i>REQUIREMENTS</i>	<b>POSSIBLE POINTS</b>	<i>POINTS EARNED</i>
Geographical location mentioned	<b>5</b>	
Biome described clearly (includes climate, temp, and rainfall)	<b>15</b>	
At least 1 examples of flora	<b>5</b>	

(plant life)		
At least 1 examples of fauna (animal life)	5	
Special characteristics of the park	15	
Food chain including producers, consumers, and decomposers	15	
Correct use of vocabulary	5	
At least 1 of the additional items	10	
Spelling and correct use of grammar	5	
Appearance (neatness, attention to detail)	10	
Presentation	10	

ORIGINAL VERSION

Science 6

Ecosystem Project

Name \_\_\_\_\_

Class: \_\_\_\_\_



**National Park Service**  
**U.S. Department of the Interior**

**National Park Service Information**



**Imagine you want to take a trip to one of the many National Parks found in the United States. Which one would you choose and why?**

In this assignment, I would like you to create a brochure or slide presentation that profiles one of the parks using the following criteria:

1. Geographical location (where in the United States)
2. What type of biome is represented?
  - a. General characteristics of that biome
  - b. Climate (yearly weather patterns), temperature, rainfall
3. Flora (plant life) of the park: **2-3 examples**
4. Fauna (animal life) of the park: **2-3 examples**
5. Any special features or characteristics of the park (be sure to include both biotic and abiotic factors)
6. Present a typical **food web** for this particular national park. Make sure you include the following: producers, consumer, and decomposers (If you can use the program *Inspiration*, this makes a terrific food web)

Using either Microsoft Word, Publisher or PowerPoint, create a brochure or slide program describing the park you have chosen. Pretend that the brochure/presentation is an advertisement and you are trying to convince travelers to visit the park. Make sure you include the 6 qualifiers listed above. **Feel free to incorporate pictures, diagrams or illustrations if you like.**

Be sure to use the following terms that you learned in this unit where appropriate:

- ♣ **Ecosystem**

- ♣ Niche
- ♣ Habitat
- ♣ Population
- ♣ Community
- ♣ Carnivore, herbivore, omnivore, scavenger
- ♣ Competition, predation, symbiosis (parasitism, mutualism, commensalism)

#### REFERENCE MATERIALS:

The National Parks Service web site gives you access to information about all of our nation's parks. This is the site you will be using to conduct your research along with reference materials from the library. You may use other web sites as well but need to list these as a reference, along with any books used.

<http://www.nps.gov>

In addition to the given requirements, please include **2-3 of the following items** in your brochure:

- ♣ Appropriate humor (i.e., cartoon, comic) having to do with ecology of the region (Far Side comic?)
- ♣ Advertisement for ecotourism (how to be green in the park)
- ♣ 1-2 interesting historical facts about the park
- ♣ Pick one organism (plant, animal, or other) from the park and write a brief profile on that organism from that organism's perspective
- ♣ Pictures, illustrations, graphics, diagrams
- ♣ Some "fun facts" about the park

**Progress check date:** \_\_\_\_\_

**Due Date:** \_\_\_\_\_

**SCIENCE 6 ECOSYSTEM LAB PROJECT RUBRIC**

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

<i>REQUIREMENTS</i>	<b>POSSIBLE POINTS</b>	<i>POINTS EARNED</i>
Geographical location mentioned	5	
Biome described clearly (includes climate, temp, and rainfall)	15	
At least 2 examples of flora (plant life)	5	
At least 2 examples of fauna (animal life)	5	
Special characteristics of the park	15	
Food web including producers, consumers, and decomposers	15	
Correct use of vocabulary	5	

At least 2 of the additional items	<b>10</b>	
Spelling and correct use of grammar	<b>5</b>	
Appearance (neatness, attention to detail)	<b>10</b>	
Presentation	<b>10</b>	

ENRICHMENT VERSION

Science 6

**Ecosystem Project**

Name \_\_\_\_\_

Class: \_\_\_\_\_



**National Park Service**  
U.S. Department of the Interior

## National Park Service Information

**Imagine you want to take a trip to one of the many National Parks found in the United States. How can you visit the park in an eco-friendly manner?**

In this assignment, you are going to create a brochure or public service announcement (PSA) that profiles one of the parks using the following criteria:

1. Geographical location (where in the United States)
2. What type of biome is represented?
  - a. General characteristics of that biome
  - b. Climate (yearly weather patterns), temperature, rainfall
3. Flora (plant life) of the park: **3-4 examples**
4. Fauna (animal life) of the park: **3-4 examples**

5. Any special features or characteristics of the park (be sure to include both biotic and abiotic factors)
6. Present a typical **food web** for this particular national park. Make sure you include the following: producers, consumer, and decomposers (If you can use the program *Inspiration*, this makes a terrific food web)
7. Present an argument why people should NOT visit this particular park. How has tourism negatively affected the ecosystem?

Using either Pages or iMovie, create a brochure or PSA describing the park you have chosen. Pretend that the brochure/presentation is an advertisement and you are trying to convince travelers to visit the park. Make sure you include the 7 qualifiers listed above. **Please incorporate pictures, diagrams or illustrations.**

Be sure to use the following terms that you learned in this unit where appropriate:

- ♣ **Ecosystem**
- ♣ **Niche**
- ♣ **Habitat**
- ♣ **Population**
- ♣ **Community**
- ♣ **Carnivore, herbivore, omnivore, scavenger**
- ♣ **Competition, predation, symbiosis (parasitism, mutualism, commensalism)**

**REFERENCE MATERIALS:**

The National Parks Service web site gives you access to information about all of our nation's parks. This is the site you will be using to conduct your research along with reference materials from the library. You may use other web sites as well but need to list these as a reference, along with any books used.

<http://www.nps.gov>

In addition to the given requirements, please include **3-4 of the following items** in your brochure:

- ♣ **Appropriate humor (i.e., cartoon, comic) having to do with ecology of the region**
- ♣ **Advertisement for ecotourism (how to be green in the park)**
- ♣ **1-2 interesting historical facts about the park**
- ♣ **Pick one organism (plant, animal, or other) from the park and write a brief profile on that organism from that organism's perspective**
- ♣ **Pictures, illustrations, graphics, diagrams**
- ♣ **Some "fun facts" about the park**

**Progress check date:** \_\_\_\_\_

**Due Date:** \_\_\_\_\_

SCIENCE 6 ECOSYSTEM LAB PROJECT RUBRIC

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

<i>REQUIREMENTS</i>	<b>POSSIBLE POINTS</b>	<i>POINTS EARNED</i>
Geographical location	5	

mentioned		
Biome described clearly (includes climate, temp, and rainfall)	<b>15</b>	
At least 3 examples of flora (plant life)	<b>5</b>	
At least 3 examples of fauna (animal life)	<b>5</b>	
Special characteristics of the park/environmental issues discussed	<b>20</b>	
Food web including producers, consumers, and decomposers	<b>10</b>	
Correct use of vocabulary	<b>5</b>	
At least 3 of the additional items	<b>10</b>	
Spelling and correct use of grammar	<b>5</b>	
Appearance (neatness, attention to detail)	<b>10</b>	
Presentation	<b>10</b>	