

# An Environmental Lesson From “Poppy” By Avi

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**Classroom sessions/estimated time:** Reading the novel, **Poppy** will take approximately 3 weeks if you read 15 minutes daily. Creating models of ecosystems will take 5 class periods. Map activity will take 1 class period.

**Grade Level:** 5

**Purpose:** The purpose of this lesson is to study the concept of an ecosystem and to learn about the physical characteristics typical of ecosystem environments.

## **National Geography Standards Addressed:**

- #1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
- #8: The characteristics and spatial distribution of ecosystems on Earth’s surface.
- #15: How physical systems affect human systems.

## **Indiana Social Studies Academic Standards Addressed:**

- Grade 5: 5.3.5: Map and describe the characteristics of climate regions of the United States.
- 5.4.4: Explain that in any particular environment some kinds of plants and animals survive well.

## **Objectives:**

Upon completion of this lesson, students will be able to

1. identify six ecosystems,
2. describe the main differences and similarities between the six ecosystems,
3. explain map essentials,
4. identify the flora and fauna of an ecosystem,
5. identify animals common to each ecosystem,
6. explain the flow of energy and the cycling of matter through an ecosystem, and
7. locate ecosystems throughout the United States.

## **Materials Required:**

- Book: *Poppy* by Avi (ISBN: 0-531-09483-9)
- Six boxes (I use the empty Xerox paper boxes)
- Variety of art materials -- clay, markers, construction paper, toothpicks, etc..
- Copy of map from **Poppy** for each student (map is found before the first page of the book)
- Encyclopedias
- Check your local library for the series: **Exploring Earth’s Biomes** (ISBN: 0-805-02830-7)
- Large map of the United States

**Procedure:**

1. Introduce the novel by passing out a copy of the map of *Dimwood Forest* from **Poppy**. Have students study the map. Ask several questions to check for understanding, thus reviewing map essentials. For example, "If you are standing on Bannock Hill, in which direction would you travel to reach Gray House?"
2. Next, begin reading **Poppy**. On the blackboard or a flip chart, make a list of all the animals and plants mentioned in the first chapter. Explain that each of the six ecosystems students will study will have certain animals and plants.
3. In chapter 2, Lungwort explains that the family will have to move due to a food shortage. Explain and discuss the flow of energy in a food chain. Discuss the connection of the flow of energy in a food chain to the ecosystem and to humans.
4. Continue to read the novel. Explain that students will work cooperatively to create a model of an ecosystem (desert, deciduous forest, taiga, tundra, grassland, and tropical rain forest). Each model will include a map that shows where the ecosystem is located. The map will contain map essentials: title, orientation (compass rose), date, author, legend and scale. Each model will have the plants, animals, climate and landscape that pertain to that ecosystem. In addition to the model, students will explain at least five food chains in their ecosystem.
5. Locate areas of the United States that contain the six ecosystems studied. Indicate those locations (rough boundaries) on a large map of the United States. Discuss any patterns or relationships that the students may observe between the ecosystem locations.
6. Invite other classes to view the models of the ecosystems and the U.S. ecosystem locations map.

**Assessment:**

- Students will be evaluated on level of quality of completed models of the ecosystems. (A class-generated rubric will indicate levels of achievement.)
- Students will be evaluated by their accurate and complete explanation of the five food chains in their ecosystem.
- Positive group interaction and participation in project development will also be assessed.
- Participation in the United States ecosystem location discussion.

**Adaptations/Extensions:**

- Go on a field trip to a local forest, grassland, or wetland.
- Make a recipe that comes from each ecosystem -- tropical rain forest punch has pineapple juice, orange juice, and lime sherbet or eat moose tracks ice cream for the taiga.
- Disect an owl pellet and discuss the flow of energy from mouse to owl.
- Research the location of the six studied ecosystems around the world.

**Resources:**

- Avi. **Poppy**, Orchard Books, 1995. (ISBN: 0-531-09483-9)
- National Geographic World magazines. National Geographic Society.
- Science NetLinks: [www.sciencenetlinks.org](http://www.sciencenetlinks.org)
- Encarta Encyclopedia by Microsoft