



A Lesson on Changing the Ecosystem by Lauren Hill

Grade Level: Grade 4

Subject Area: English Language Arts

Lesson Length: 2 hours

Lesson Keywords: Reading, Writing, mathematics

Lesson Description: The goal of this lesson is to allow student to read the passage individually and with a peer. During this lesson the students will learn reading skills, vocabulary, writing, critical thinking, math, problem-solving skills, and work as a team. The student will learn the effects of changing the ecosystem. Students will work together to solve a math problem as well as respond to a letter from a farmer.

Common Core Standards Covered with This Lesson

CCSS.ELA-Literacy.RL.4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

CCSS.ELA-Literacy.RL.4.4: Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).

CCSS.ELA-Literacy.RI.4.7: Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

CCSS.ELA-Literacy.W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

CCSS.ELA-Literacy.W.4.1b: Provide reasons that are supported by facts and details.

CCSS.ELA-Literacy.W.4.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

CCSS.ELA-Literacy.L.4.3: Use knowledge of language and its conventions when writing, speaking, reading, or listening.

CCSS.ELA-Literacy.L.4.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.

Lesson Content: Book/Story/Reading Passage

Instructions: Please read the following reading passage as many times as needed (aloud and silent) before starting to go through other lesson pages. Understanding the content of this passage is very important since the lesson activities will be all about this content. Feel free to print the passage if needed.

Changing the Ecosystem

by

Content: A food chain is a link between plants and animals. It starts with a plant. The next part of the link is a plant eater. When the prairie plants were uprooted, the animals that depended on them lost their food source. So while the farmers produced more food for people, they broke the animals food chain.

A food chain is part of a bigger system called a food web. That web links the living things in an ecosystem. The herbivores in that system depend on the plants. If the plants are removed, the herbivores cannot survive. Then the carnivores, the animals that eat other animals, lose their food, too. Remove just one kind of plant from an environment and you disrupt the food web. Plow up the land and you destroy the whole system.

Read the following time-line and figure out the rate of population growth. To do that, divide the bigger number by the smaller number. You can estimate the answer. For example, one million is two times 500 thousand. For between 1880 and 1890 the population more than doubled.

1880 ? ? ? Population of the city is 503,185; farms continue to expand

1890 ? ? ? Population of the city is 1,099,850

1900 ? ? ? Population is 1,698,676

1910 ? ? ? Factories expand in the city; population is 2,185,283

1920 ? ? ? City population has grown to 2,701,705

1929 ? ? ? A farmer near Chicago reports plowing up several frogs as he

? ? ? ? ? got his field ready for planting this spring.

1930 ? ? ? City population is 3,376,438

We do not have population information on the butterflies, but we do know about the bison. By 1880, only a few hundred bison still live in this country. By 1900, Illinois and other Midwestern states were becoming known as the nations breadbasket. Millions of acres of land had been turned from prairie into farms. Read this letter from a farmer to understand what this change meant for the animals.

Dear Martha,

Today, I was plowing the new field, and I saw a meadowlark. I really like that kind of bird. I love its song. Its a good neighbor, too. It eats the insects, and you know we have too many of them. That bird kept flying back and forth. It seemed to be looking for something. Maybe it was looking for its nest from last year. Theres about ten acres of prairie that Ive left near the road. So I thought the bird would go there. But it flew away. Im not sure where it went.

I got the whole field plowed today. Tomorrow well put in the seed. This is going to be a great year. I hope you can come to visit this spring. Of course, well have some work for you to do, but it will be good to be together again.

Task 1: Vocabulary

Instructions: Please complete the following vocabulary activity by choosing the correct meaning of each word.

Q: 1 WordPhrase: Food chain **WordPhraseTier:** 2

Question: The author in the story says "A food chain is a link between plants and animals". What is a food chain

- A: a link of food animals eat
- B: a necklace for animals to wear
- C: a link between plans and animals
- D: a happy meal

Question: Which one of these sentences below uses the word "food chain" correctly?

- A: I am wearing a food chain.
 - B: Plants are an important part of the food chain.
 - C: Food chains are the coolest new trend!
 - D: Food chains are toys that come inside of a happy meal.
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Q: 2 WordPhrase: The herbivores in that system depend on the plants **WordPhraseTier:** 3

Question: The author in our story says "The herbivores in that system depend on the plants." What is a herbivore?

- A: Something that depends on plants for survival.
- B: Something that eats meat.
- C: Something that likes to be called Herb.
- D: Something that ruins the ecosystem.

Question: Which one of the sentences below uses the word "herbivore" correctly?

- A: The herbivores eat cheese burgers.
 - B: I have herbivore fever!
 - C: Herbivores are plant eaters.
 - D: My dog herbivore is a great pet!
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Q: 3 WordPhrase: When the prairie plants were uprooted, the animals that depended on them lost their food source.

WordPhraseTier: 3

Question: The author in our story says "When the prairie plants were uprooted, the animals that depended on them lost their food source." What does the word "uprooted" mean in this sentence?

- A: removed
- B: watered
- C: replenished
- D: nurtured

Question: Which one of the sentences below uses the word "uprooted" correctly?

- A: Sally is in an uprooted about her missing shoe!
 - B: The family uprooted and moved to a new city.
 - C: The uprooted car has not moved from the driveway.
 - D: Uprooted trees never move.
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Q: 4 WordPhrase: Remove just one kind of plant from an environment and you disrupt the food web. Plow up the land and you destroy the whole system. **WordPhraseTier:** 2

Question: The author in our story says "Remove just one kind of plant from an environment and you disrupt the food web. Plow up the land and you destroy the whole system." What does plow mean in this sentence?

- A: Remove
- B: Lay down
- C: Restore
- D: Nurture

Question: Which one of the sentences below uses the word "plow" correctly?

- A: My dad will plow the snow to make a clear path on the sidewalk.
 - B: I plow a mess on the floor when I'm excited.
 - C: I plow dirt into the ground for the plants.
 - D: I plow water into the fish tank so my fish can have more water.
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Task 2: Forum Discussion

Instructions: This discussion forum will have questions for students to respond. Read the posted questions, and respond to each. Students are responsible for posting one initial and two peer responses for each topic.

1 - What are the effects of changing the ecosystem?

How does changing the ecosystem affect the animals? Explain the effects of changing the ecosystem. Does a change in the ecosystems affect you?

2 - What can you do to help the ecosystem?

What are some ways you can help the ecosystem? Are there any things we do that harm the ecosystem? How can we help others to stop doing these things?

3 - Are you a herbivore or carnivore?

Think of the types of food you eat. Are you a herbivore or a carnivore? What are some types of food that herbivores eat? What are some types of food that carnivores eat??

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Task 3: Writing Activity

Instructions: In 2 paragraphs, you are to write a letter to the farmer explaining the problem with plowing up the field. Explain how the farmer's actions will affect ecosystem and disrupt the food chain. Using what you know about ecosystems from the reading, persuade the farmer not to continue plowing the field.?

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