

Lesson 7: Michigan and the Theme of Human/Environment Interaction

Big Ideas of the Lesson

- To study a place geographers ask the question: How have people interacted with the environment of the place?
- To answer that question geographers study how people modify the environment of the place.
- People modified the environment of Michigan by polluting the Great Lakes and rivers.
- They also modified the environment of Michigan by filling in wetlands, cutting down forests and building cities.
- Geographers also study how people have adapted to the environment of a place.
- In Michigan, houses can be studied in order to understand how people adapt to Michigan's four seasons.

Lesson Abstract:

This lesson builds on the previous lesson in which students explored the natural resources of Michigan and the consequences of their use. Using concrete examples, students are introduced to the geographic concepts of modification and adaptation. They explore water pollution through literature (*A River Ran Wild*) and a timeline. Then, they briefly discuss land issues such as the filling in of wetlands for housing and development. Finally, by exploring how homes are built in Michigan, (e.g. furnace, peaked roof, screens, etc.) students examine how people adapt to their environment.

Content Expectations

3 - *G5.0.1*: Locate natural resources in Michigan and explain the consequences of their use.

3 - *G5.0.2*: Describe how people adapt to, use, and modify the natural resources of Michigan.

Integrated GLCE's

R.CM.03.02: Retell in sequence the story elements of grade-level narrative text and major idea(s) and relevant details of grade-level informational (English Language Arts)

E.ES.03.52: Describe helpful or harmful effects of humans on the environment (garbage, habitat destruction, land management, renewable and non-renewable resources). (Science)

Key Concept

human environment interaction

Instructional Resources

Equipment/Manipulative

Chart paper and markers
Michigan Map (desktop, textbook, or paper copies)
Overhead projector or document camera/projector
Student journal or notebook
Wall map of Michigan or overhead of a Michigan map

Student Resource

Cherry, Lynne. *A River Ran Wild*. San Diego: Harcourt Brace, Jovanovich, 1992.

Teacher Resource

California Home. July 10 2009

<http://imgs.sfgate.com/c/pictures/2008/08/07/ba-comingup10_de_0498882016.jpg>.

Egbo, Carol. *Supplemental Materials (Unit 1, Lesson 7)*. Teacher-made material. Michigan Citizenship Collaborative Curriculum, 2009.

Michigan Home. 10 July 2009

<<http://www.salinemichiganrealestate.com/m/blogs/vanceshutes/Beaver%20Crossing%2025.JPG>>.

Lesson Sequence

1. Remind students that geographers study a place by asking questions and trying to find the answers those questions. Remind them that one of the questions is: How have people interacted with the environment of the place? Using Word Card #37, explain that Human/Environment Interaction is one of the most important things geographers study.
2. Review the natural resources studied in the previous lesson by asking students to list three important natural resources of Michigan in their Michigan studies journal. Give students time to write and then discuss their answers. Pose the following question: What do you think happens when people use natural resources? Discuss their responses and guide students in understanding that when people use natural resources they change the environment. For example, when people cut down trees for lumber the forest habitat is changed.
3. Using Word Card #38 discuss the term ‘modifying the environment’ by explaining that sometimes people change the environment to fit them. For example, people cut down trees long ago in order to clear land for farming. Explain that you will now be reading students a book that will help them better understand modification of the environment. Explain that although the book takes place in another state, what happened in the book was very similar to what happened in Michigan.

4. Read students the book “A River Ran Wild” by Lynn Cherry. Make sure to share the illustrations with students. Stop at appropriate times and discuss the story. When you have finished, give each student a copy of the “Story Sequence Cards” located in the *Supplemental Materials (Unit 1, Lesson 7)* and have students work independently to cut out the cards and place them in the correct sequence. Note that a page showing the correct sequence has been included in the *Supplemental Materials (Unit 1, Lesson 7)* for your use as a reference.
5. Make and display an overhead of the “Using and Modifying the Environment Charts” located in the *Supplemental Materials (Unit 1, Lesson 7)* or create similar charts on large chart paper. Guide students in listing examples of using the environment and changing the environment described in Lynn Cherry’s book. Note that charts showing sample answers have been included in the *Supplemental Materials (Unit 1, Lesson 7)* to use as a reference.
6. Explain that what happened to the Nashua River in the book was very similar to what happened to many Michigan rivers in the past. As people used rivers, they polluted them. Explain that people also polluted the Great Lakes.
7. Make and display an overhead of the “Lake Erie Timeline” and go over the timeline with students. Explain that although Lake Erie was the most dramatic example of pollution, the other Great Lakes also experienced pollution problems. Explain that since the 1970s people have worked together to try and solve the problems of Great Lakes pollution.
8. Explain that people have modified, or changed, the environment of Michigan by changing the land as well as the water. Ask students to think of ways in which the land has been changed in their own local community. Possible changes may include clearing land for houses and other buildings, taking up farmland, building roads, etc.
9. Share the following information regarding changes to the land in Michigan:
 - Over the years, Michigan has lost millions of acres of good farmland and open spaces as urban areas have sprawled into rural areas.
 - According to the Michigan Environmental Council, Michigan is losing over five acres of open space and farmland every hour. This land is being used for developments like houses and shopping malls.
 - To create more space for buildings, wetlands have been filled. Over half the wetlands of Michigan have already been destroyed.
 - Many coastal areas of Michigan have been changed. This has left Michigan shorelines in danger. Problems include overdevelopment of shoreline areas, erosion, contamination of beaches, and sand dune mining.
10. Explain that the human activities that led to environmental changes often had positive economic consequences. For example, farming and lumbering helped Michigan grow and develop. Cities provided places for people to live and find jobs. Development along coastal areas helped bring in tourists. Explain that people often have to balance environmental concerns with economic concerns.

11. Explain that sometimes people are limited by what they can do to the environment and they can't always change it to fit them. In fact, sometimes people have to change in order to fit their environment. Using Word Card #39, explain that geographers call this 'adapting to the environment.'
12. Pose the following question: People in Michigan can't keep winter from coming even if they hate the snow, so what are some ways people adapt to winter in Michigan? Discuss student responses. Note that possible answers include that people have warm coats, people buy snow shovels or snow blowers, people put salt on their sidewalks, etc.
13. Make and display an overhead of "Comparing Two Houses" located in the *Supplemental Materials (Unit 1, Lesson 7)*. Explain that the top house is a home located in California and bottom house is a home located in Michigan. Pose the following question: why do these houses look so different? Discuss student responses and guide students to the idea that the geography of California and Michigan is quite different. People have adapted to the different environments by building different kinds of houses.
14. Discuss and compare the two houses using the following questions:
 - Why is the roof of the California house flat and the roof of the Michigan house peaked?
 - Which house is likely to have a furnace? Why?
 - Which house is likely to have an air conditioner? Why?
 - Which house is the most likely to have a basement? Why? (Michigan, due to California earthquakes)
 - Why is the landscaping around each house so different?
 - Why do you think the California house has more windows?
 - Which house is likely to have both window screens and storm windows? Why?
 - Which house is likely to have the most insulation? Why?
15. Briefly share the following additional examples of adaptation to the environment of Michigan:
 - People in Michigan grow apples instead of oranges. Why? Because orange trees need a warmer climate like that of Florida.
 - People in Michigan often like water sports because there are so many lakes.
 - People in Michigan often own both a snow blower and a lawn mower. Why?
16. Return once again to the book "A River Ran Wild" and ask students to identify examples of adaptation from the book. Note that possible answers include:
 - The Native Americans learned to make their houses out of cattails because the riverbanks provided these materials.
 - The Native Americans planted corn and squash because they were crops that would grow in forest clearings.
 - People stopped swimming in the river because it had become so polluted.

17. Explain that students will have the opportunity to explore more examples of how people modified and adapted to the environment of Michigan in the subsequent unit on Michigan history.

Assessment

An assessment in which students identify three ways in which people have modified the environment of Michigan and two ways in which people have adapted to the environment of Michigan has been included in the *Supplemental Materials (Unit 1, Lesson 7)*.