Wisconsin's Natural Resources and Wise Use of Wisconsin's Natural Resources
Example Social Studies Unit Plan Outline
2014-2015
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1. Topic and Grade Level
What are the three main biomes/ecosystems of Wisconsin and how did Native people, European immigrants, and lumber barons use and affect these biomes/ecosystems in the 1800s?
The topic is for fourth grade.

2. Benchmarks
Social Studies:
SOCA1.4.4 Understand ways in which people in Wisconsin interact with their environment (use of land and construction of human made features).
SOCB.1.4.10 Understand the history, culture, tribal sovereignty, and current status of Indian tribes and bands in Wisconsin.
SOCE1.4.8 Understand the values and beliefs of different groups in Wisconsin.
SOCA1.4.8 Understand the positive and negative impact of people in Wisconsin on the environment.
Science:
SCIE1.4.2 Understand nonrenewable and renewable resources
SCIE1.4.3 Understand ecosystems (identify various ecosystems, various organisms within an ecosystem, features of an ecosystem, explain how living and nonliving things within an ecosystem are interconnected and interdependent)
SCIE1.4.4 Understand environmental civic responsibilities
SCIE1.4.5 Understand environmental problems and issues
SCIE1.4.6 Understand workable solutions to environmental problems
Math:
MAT4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
MAT4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
Literacy:
RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2. Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably (finds facts in 2 different resources to determine validity).
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

3. Goals/Objectives
Students will list at least five different components of each ecosystem in Wisconsin: hardwood and pine forests, oak savannas, and prairies.
Students will list at least one renewable resource and one nonrenewable resource in each ecosystem and explain the reasoning for their classification.
Students will explain how Native people and early European or Yankee immigrants used Wisconsin's natural resources to meet their basic needs.
Students will summarize how lumber barons used Wisconsin's natural resources to make a profit.
Students will compare and contrast the Menominee's use of forests to make money with lumber barons use of forests to make money in the 1800s.
Students will summarize the different perspectives on cutting trees in the Chequamegon-Nicole National Forest today and take a stand on the issue.
Students will estimate the percentage of Wisconsin land occupied by the Ojibwa in 1804 -1848 and estimate the percentage of Wisconsin land the Ojibwa occupied in 1992 and compare the difference between the two land areas.

Students will read and summarize main ideas from different online and print resources regarding the different components of each ecosystem in Wisconsin (plants, animals, soils, minerals, and bodies of water), how Native people, early European or Yankee immigrants, or lumber barons used Wisconsin's natural resources, and infer the values and beliefs of each group based on how each group used Wisconsin's natural resources.

Students will integrate information from two or more online and print resources and cite evidence from the texts to support main ideas regarding the different components of each ecosystem in Wisconsin (plants, animals, soils, minerals, and bodies of water), how Native people, early European or Yankee immigrants, or lumber barons used Wisconsin's natural resources, and infer the values and beliefs of each group based on how each group used Wisconsin's natural resources.

Students will read, summarize, and compare main ideas from different online and print resources regarding how the Menominee used sustainable lumber practices to cut the trees on their reservation beginning in the 1850s and how lumber barons cut trees from Wisconsin's forested areas beginning in the late 1800s.

Students will read different online and print resources regarding the controversy over cutting trees in the Chequamegon-Nicolet National Forest and cite evidence from the sources to support either cutting trees or preserving trees.

4. Pre-Assessment

After students study a map of Wisconsin's early vegetation in 1840s and photographs of three different biomes or ecosystems (pine and hardwood forests, oak savannas, and prairies), they will list the natural resources (soil, plants, animals, bodies of water) which would be included in those three different ecosystems in the 1840s. Students will speculate and describe how people might use these resources wisely to live without destroying the ecosystems. Make a class list of students' ideas for each ecosystem to compare to the results of small group research later in the unit.

5. Instructional Activities

Day 1: Pre-assessment and introduction to different ecosystems in Wisconsin (hardwood and pine forests, oak savannas, and prairies). Discuss the differences in meanings of ecosystems and biomes, differences between renewable and nonrenewable resources, the value of natural resources for different components of the ecosystems and biomes, and the reasons for humans to conserve natural resources. Introduce the inquiry question: If you (Native people or immigrants) lived in Wisconsin in the early 1800s, how could you use the natural resources to meet your basic needs for food, clothing, and shelter?

Day 2: Review what students learned from day 1. Divide students from different backgrounds, learning needs, and language skills into purposeful, small inquiry research groups. Each group uses websites to investigate the different components of each ecosystem in Wisconsin (plants, animals, soils, minerals, and bodies of water). Each group focuses on one of the ecosystems or biomes (hardwood and pine forests, oak savannas, or prairies). Each student records ideas on graphic organizer. Share ideas as a class and create a class concept map for each biome or ecosystem as groups report.

Day 3: Review main ideas from days 1 and 2. Students work in the same small groups to create a visual (such as a mural, diorama, PowerPoint, or Prezi) of the biome or ecosystem they investigated on day 2. Their visual should include the main plants, animals, soils, minerals, and bodies of water of their biome or ecosystem. Each group should prepare to explain how each component contributes to the biome or ecosystem and how humans might use these natural resources to meet their basic needs.

Day 4: Review what students learned from days 1- 3. Students present their visual of the biome or ecosystem they investigated to the class, how each component is important to the biome or ecosystem, and how Native people, European, or Yankee immigrants might use the natural resources to survive and meet their basic needs for food, clothing, and shelter in the early 1800s. The rest of the class should complete a graphic organizer recording the main components of each biome or ecosystem. Each group should assess their own visual and presentation according to a rubric. Display students' print visuals and make electronic visuals available to the class to use in later lessons.

Day 5: Review main ideas from days 1- 4. Students remain in the same groups of diverse learners, but each small group becomes an expert group to investigate the second inquiry compelling question: Who made the wisest use of Wisconsin's natural resources to meet their basic needs or earn income, Native people, European or Yankee immigrants, or lumber barons? What is the evidence? Each expert group focuses on one group of people to investigate, either Native people, European or Yankee immigrants, or lumber barons. Provide print resources, modified texts, photographs or drawings, and artifacts to engage all students, including English learners and struggling readers. Students record the results of their research on a graphic organizer.

Day 6: Review what students learned from days 1- 5. Students form new base groups to teach each other what they learned from their research during day 5. Each base group includes at least two students who investigated how Native people, European or Yankee immigrants, or lumber barons used Wisconsin's natural resources to meet their basic needs or earn an income. Each base group arrives at a conclusion about which group made the wisest use of Wisconsin's natural resources, Native people, European or Yankee immigrants, or lumber barons and the evidence they have from their research. Ask groups to speculate about the values and beliefs of each group given how they used the natural resources. Each group member records their conclusion on their graphic organizer. Lead a whole class discussion on which group made the wisest use of Wisconsin's natural resources, Native people, European or Yankee immigrants, or lumber barons, the evidence each group cited from their research, and the values and beliefs underlying their actions. Record each group's conclusions on chart paper or the computer. Compare these conclusions to their predictions on the formative assessment. Ask the class to notice similarities and differences among the group's ideas and how they defined "wisest use of natural resources."
Day 7: Review main ideas from days 1- 6. Introduce Ojibwa (Chippewa) treaty rights, the meaning of these rights, and why the Ojibwa kept these rights when they sold land to the U.S. Government in the 1800s. Have students work in the same expert research groups and choose a recorder for the group. Each group studies maps showing where the Ojibwa lived in Wisconsin in 1804 -1848 and where they lived in Wisconsin in 1992. Ask students to compare the land area and estimate the percentage of Wisconsin land occupied by the Ojibwa in 1804-1848, the percentage of Wisconsin land occupied by the Ojibwa in 1992, and the difference in percentages of land occupied by the Ojibwa between these two time periods. The group recorder should show how the group solved the problem. Collect group record sheets showing how they solved this math problem. Ask students to look for connections between the natural resources found on land the Ojibwa sold in the 1800s and the reasons for the treaty rights.
Day 8: Review what students learned from days 1- 7. Provide resources for students to compare and contrast how the Menominee used sustainable lumber practices to cut the trees on their reservation and how the lumber barons clear cut forests in the 1800s. How did each group make money from their lumber practices? Divide the class into six groups: three groups investigate the Menominee's sustainable lumber practices beginning in the 1850s, how they harvested lumber, and how they earned money from the timber. Three groups investigate the lumber barons' lumber practices beginning in the late 1800s, how they harvested lumber, and how they earned money from the timber. Compare the amount of money each group might make from their lumbering within a year.
Day 9: Review main ideas from days 1- 8. Introduce the current issue regarding use of natural resources in Wisconsin: Should trees be cut in the Chequamegon-Nicole National Forest? If so, how many trees should be cut? Divide the class into six groups and provide resources for each group. Three groups investigate the environmentalists and woodland-recreation industry's point of view to preserve the trees for animal habitats and attract tourists and a group recorder takes notes on their findings. Three groups investigate the loggers' and mill owners' point of view to cut some trees to generate jobs, improve the economy in northern Wisconsin, reduce unemployment, and use trees before they fall down and a group recorder takes notes on their findings. Ask each group to present their point of view, summarize all points of view on chart paper or the computer, and ask the class to arrive at a conclusion after weighing all the points of view and other factors. Students can choose to write individual, small group, or a class letter to Senator Tammy Baldwin giving their view on the issue and encouraging her to support their view in upcoming legislation. The letters should include the terms renewable, nonrenewable, components of forest biomes, and examples of people's positive and negative effects on Wisconsin's physical environment. Use a rubric to assess the letters.
Day 10: Have students work in pairs to write two review questions on two small pieces of paper about important ideas learned during the two weeks. Play popcorn review with the questions. Students form a large circle, crumple their paper, toss their question in the air into the middle of the circle, then pick a different question to answer. The questions and answers are given one at a time, although students may choose to confer with another member of the class to make sure an answer is correct. Have the rest of the class confirm the accuracy of each answer. Students complete the summative assessment, an article for a class book or the class blog, which is assessed by a rubric.

6. Formative Assessments
Day 1: Collect students' pre-assessments to determine which ideas and concepts to emphasize and the misconceptions which must be addressed during the unit. Observe students' contributions to the class discussion on the meanings of ecosystems and biomes, renewable and nonrewable resources, the value of natural resources for different components of the ecosystems and biomes, and the reasons for humans to conserve natural resources. Take notes on inaccurate or incomplete ideas or concepts to correct in following lessons.
Day 2: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Review students' graphic organizers for accurate ideas about the components of one ecosystem or biome in Wisconsin. Correct any misconceptions or omissions in following lessons.

Day 3: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Review students' visuals for accurate ideas about the components of one ecosystem or biome in Wisconsin. Check with each group on the main ideas they plan to include in their presentation. Guide groups to correct any part of their presentation or visual which reveal inaccurate or incomplete ideas and guide them to correct and finish their visual and presentation.
Day 4: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Digitally record each group's presentation of their visual. Have each group self-assess their visual and presentation according to a rubric after each reviews their recorded presentation. Assess each group's presentation according to the same rubric.
Day 5: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Collect each student's graphic organizer for any inaccurate or incomplete ideas to address before they meet in their base groups in the following lesson.
Day 6: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Observe base group members' teaching each other what they learned from their research and correct misconceptions. Observe students' contributions to the whole class discussion about which group made the wisest use of Wisconsin's natural resources and their evidence. Guide students to correct any misconceptions and elaborate on incomplete ideas.
Day 7: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Observe students' explanations of Ojibwa treaty rights, the meaning of these rights, and why the Ojibwa kept these rights when they sold land to the U.S. government in the 1800s. Collect group record sheets showing how they solved the math problem about the differences in percentage of land Ojibwa had in the early 1800s and in 1992. Look for a logical process in problem solving.
Day 8: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Observe each group's contributions to compare how the Menominee used forest resources to earn money with how lumber barons used forest resources to earn money. Look for logical math problem solving among groups in arriving at a conclusion about how much each group would make from the sale of timber in a year.
Day 9: Observe students' contributions to the review discussion and note inaccurate or incomplete ideas or concepts to correct in following lessons. Observe each group's contributions to the whole class discussion about the current issue of cutting trees in the Chequamegon-Nicolet National Forest. Guide students to elaborate on incomplete ideas and correct any misconceptions. Review each letter according to the rubric. Individual letters showing proficiency could become part of that student's summative assessment.
Day 10: Observe students' responses to the popcorn review questions. Guide students to correct any misconceptions or incomplete ideas prior to completing the summative assessment.

7. Summative Assessment
Each student writes an article for a class book or blog, which is assessed by a rubric. The article should include: (1) a list of at least five characteristics of each biome/ecosystem in Wisconsin and identify which are renewable and nonrenewable; (2) an explanation of how Native people, European/Yankee immigrants, and lumber barons used components of each biome or ecosystem to survive or earn income and the values and beliefs underlying their actions; (3) an explanation of the positive and negative effects each group had on the biome or ecosystem. For students who are unable to demonstrate proficiency according to the rubric, meet with each individually and encourage them to verbally elaborate on or correct the parts of their article that were omitted or incorrect.

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