

Protecting Pure Michigan

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| Subject/Content: Geography/Environment & Society | Time Frame: October |
| Topic Area: Human Environment Interaction & Michigan Natural Resources | Grade Level: 3 rd Grade |
| Designed by: Mrs. Gerding | Length of Unit: 7 days |
| School District: ABC District | School: ABC School |

Unit Overview

This unit focuses on human interaction with the environment, specifically the natural resources that are found in Michigan. Students will learn about the different natural resources found in our state and how humans have used, modified or adapted to these resources.

We will explore the difference between use, modification and adaptation as it relates to natural resources and will find out if human interaction with their environment has changed over the years. Deeper questions, such as “Should these resources continue to be used or protected?” will be explored and the students will research this issue to form their own opinion.

There will be a short performance assessment part way through the unit that will cover the understandings of use, modification and adaptation. Finally, there will be a main performance assessment at the end of the unit that will tie all the main ideas together. The students will be required to form an opinion on the use and/or protection of Michigan’s natural resources and will draft a letter to a Congressman.



Stage 1 Desired Results

ESTABLISHED GOALS/ STANDARDS

3rd Grade Social Studies – Geography

Environment and Society:

Understand the effects of human-environment interactions.

3 – G5.01: Locate natural resources in Michigan and explain the consequences of their use.

3 – G5.02: Describe how people adapt to, use, and modify the natural resources of Michigan.

Other (CC Social Studies)

CCSS.ELA-Literacy.RH.6-8.4: Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.

BIG IDEAS from established goals...

The Central Concepts, BIG IDEAS, and KEY SKILLS of this unit are...

- Human-environment interaction: adaptation, use and modification
- Human adaptation to, use of and modification of natural resources
 - Natural resources specific to Michigan
- Helpful or harmful effects of humans on the environment through these processes
- Determining history and social studies words in a text

Transfer

Students will be able to independently use their learning to...

- Students will be able to gain knowledge about the geography and history of the state that they live in and landmarks they may visit (or have visited)
- Students will be able to clearly understand the uses of natural resources for future lessons and experiments in science courses
- Student will be able to understand and attribute where humans attain modern amenities such as electricity, clean water, heat, etc.
- Students will be able to use their understanding about negative human impact on the environment to try to change the outcome for future generations by applying their knowledge to concepts such as recycling, not polluting water, being mindful of the amount of electricity used, etc.

| Meaning | |
|--|---|
| <p>UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Humans interact with the environment in three ways: adapting, using and modifying</p> <ul style="list-style-type: none"> - When humans <u>adapt</u> to their environment, they have to change their behavior in order to stay - When humans <u>use</u> their environment, they take the natural resources available to them to use for many purposes - When humans <u>modify</u> their environment, they change it in some way to fit their needs <p>The natural resources found in Michigan fall into five main groups: water, forests, fertile soil, minerals and gas/oil</p> <p>There can be both positive and negative consequences when humans utilize natural resources</p> | <p>ESSENTIAL QUESTIONS</p> <p>Is it better to adapt to your environment or change it?</p> <p>Should Michigan’s natural resources be protected?</p> <p>What are the costs of comfort?</p> |
| Acquisition | |
| <p><i>Students will know...</i></p> <p>Examples of adapting, using and modifying the environment are:</p> <ul style="list-style-type: none"> - Adapting: buying a snow blower to use during Michigan’s winter months - Using: Sending ships across the Great Lakes to deliver goods - Modifying: Cutting down trees to clear land for farming | <p><i>Students will be skilled at...</i></p> <p>My students will use context clues and outside sources to determine the meaning of words and phrases that are found in the history and social studies texts</p> <p>My students will be able to discern between use, modification and adaptation</p> |

| | | |
|--|--|--|
| | <p>The main use for Michigan's natural resources are:</p> <ul style="list-style-type: none"> - Water: Shipping - Forests: Lumber - Fertile Soil: Farming - Minerals: Manufacturing - Gas/Oil: Transportation <p>Examples of positive consequences of human interaction with the environment include providing energy, producing goods and bringing in tourism</p> <p>Examples of negative consequences of human interaction with the environment include pollution and depletion of resources</p> | |
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Existing Student Knowledge

| | |
|--|---|
| <p style="text-align: center;"><i>Anticipated preconceptions...</i></p> <ul style="list-style-type: none"> - Natural resources are something you can hold in your hand (i.e. they may not know the Great Lakes are a natural resource) - Michigan does not have many natural resources - Human use of natural resources only has negative (or only has positive) consequences | <p style="text-align: center;">Anticipated Challenges...</p> <ul style="list-style-type: none"> - Many of the specific natural resources (i.e. iron ore) may not be terms they are familiar with - Students may have difficulty understanding that a negative consequence may not be apparent at the current time but will occur in the future (i.e. a natural resource may not deplete for 10 years, but what do we do then?) - The ideas of adaptation, use and modify may be confusing and hard to distinguish for students |
|--|---|

| | |
|--|--|
| <p style="text-align: center;"><i>How instructor will use preconceptions...</i></p> <ul style="list-style-type: none"> - Show several examples of Michigan natural resources and ask the students to choose which ones are correct (and they will all be correct) | <p style="text-align: center;"><i>How instructor will mediate these challenges...</i></p> <ul style="list-style-type: none"> - For terms they may not be familiar with, we will use context clues and other sources (computer, other books, ask a friend/parent/teacher, etc.). |
|--|--|

- Show several examples of negative and positive consequences of human interaction and ask the students to determine what the picture is and how it is an example of a positive or negative consequence.

- We will discuss examples of natural resources that have been depleted in the past and relate this concept to things in their everyday life (i.e. spending all of their allowance in one day instead of saving and investing to grow the amount, etc.)
- We will discuss the ideas of adapt, use and modify to using different scenarios (Example: If you wanted to live in a forest and had no way to clear the trees, you would have to adapt by building your house in a space around the trees. However, if you were able to remove some trees you could modify the space and build your house on the cleared land. Finally, if you did clear trees you could sell the lumber from those trees to be used for different purposes).

Stage 2 Determining Acceptable Evidence

Performance Tasks/Assessments

Main Performance Task

Each student will be assigned to one group of Michigan's natural resources (water, forests, fertile soil, minerals and gas/oil). They will be given a packet (created by me) that includes research on the natural resource itself and positive and negative consequences of its use/modification/adaptation by humans. The students will pretend that they are on a committee to decide whether or not Michigan should continue to use the natural resource or if it should be protected. They will "research" the topics using the packets, which will also include words from the text that we have not discussed and they must incorporate some of those words into their project and teach the class the meaning and how it relates to their position (they will use context clues and/or outside sources to determine the meaning). Finally, the students will write letters to their Congressman voicing their opinion and will each read the letter out loud to the class.

Short Performance Task

Students will create a poster that includes a picture of each of the five groups of natural resources found in Michigan (water, forests, fertile soil, minerals and gas/oil). Underneath each picture, they must include text that explains whether the picture is showing use, modification or adaptation of the natural resource. Each student will give a short presentation of their poster to the class.

Formal Assessments (Multiple choice quizzes or tests, essay questions)

n/a

Student self-assessment and reflections

n/a

Performance Task Blueprints-Provide a blueprint for at least one task.

What understandings and goals will be assessed through this task? What essential questions will be uncovered in this performance task?

Understandings

Humans interact with the environment in three ways: adapting, using and modifying

- When humans adapt to their environment, they have to change their behavior in order to stay
- When humans use their environment, they take the natural resources available to them to use for many purposes
- When humans modify their environment, they change it in some way to fit their needs

The natural resources found in Michigan fall into five main groups: water, forests, fertile soil, minerals and gas/oil

There can be both positive and negative consequences when humans utilize natural resources

Skills

My students will use context clues and outside sources to determine the meaning of words and phrases that are found in the history and social studies texts

Essential Questions

Is it better to adapt to your environment or change it?

Should Michigan's natural resources be protected?

What are the costs of comfort?

Students will understand that...

Same as above

Essential Questions:

Same as above

Through what authentic performance task will students demonstrate understanding? Describe task(s) in detail so students clearly understand the expectations. (Optional use of GRASPS here)

G: The goal is to determine whether Michigan should continue to interact with its environment and use the natural resources available, or if those natural resources should be protected.

R: You have been asked to sit on a committee that will research one of the five groups of natural resources found in Michigan and, after conducting that research, determine whether you think the use of that resource should continue or if the resource should be protected.

A: You need to convince your Congressman who will be taking your opinion into consideration when deciding what types of regulations or laws to impose regarding Michigan's natural resources.

S: The challenge involves researching the natural resource you are assigned using a packet that will be provided. This packet will include lots of information on the natural resource along with positive and negative consequences of human interaction with the natural resource. There will also be several key words that may be new to you and you will be responsible for finding the meaning and including some of them in your final product.

P: You will create a letter that will be addressed to the Congressman that details your final opinion on whether you think Michigan should continue to use the natural resource and reasons for your decision. You will also read the letter out loud to the class.

S: A successful letter will clearly state your opinion and reasons for that opinion using information from your research. There will be new vocabulary words from the text included in the letter and they will be used appropriately to help further explain your argument.

What student products and/or performances will provide evidence of desired understandings?

The students will turn in their letters to the Congressman. They will also read the letter to the class and will be required to participate in a class discussion (once everyone has read their letters) as a way to wrap up the project.

By what criteria will student products and performances be evaluated? Provide standards or rubrics by which the task will be judged.

See attached Rubric

Instructional Sequence for the Assessment

Day 1: Students will be assigned (randomly) to one of the five groups of Michigan's natural resources. They will be given their research packets and I will meet with each group to go through the basic outline of the packet and we will preview the main parts together so they become familiar with the content. They will then have some time to start their "research" on their own and they will be asked to continue their research as homework for that night.

Day 2: Students will work on writing down very rough notes (i.e., brainstorm ideas) about what they have found through their research and will be asked to begin to think about taking a position on whether or not they believe humans should continue to use the natural resource, if it should be protected, if the use should be changed in some way, etc. The goal for the end of the day is to choose their position and have evidence from the research to support it.

Day 3: Students will create a rough draft of their letter to the Congressman that includes evidence from the research along with new vocabulary words from the packets. I will meet with each student to review the letter and make sure they are on the right track. They will also peer review and will be required to take the letter home to edit as homework.

Day 4: Students will create a final copy of their letters and read them aloud to the class. We will have a short discussion of the letters and the different opinions after to wrap up the project.

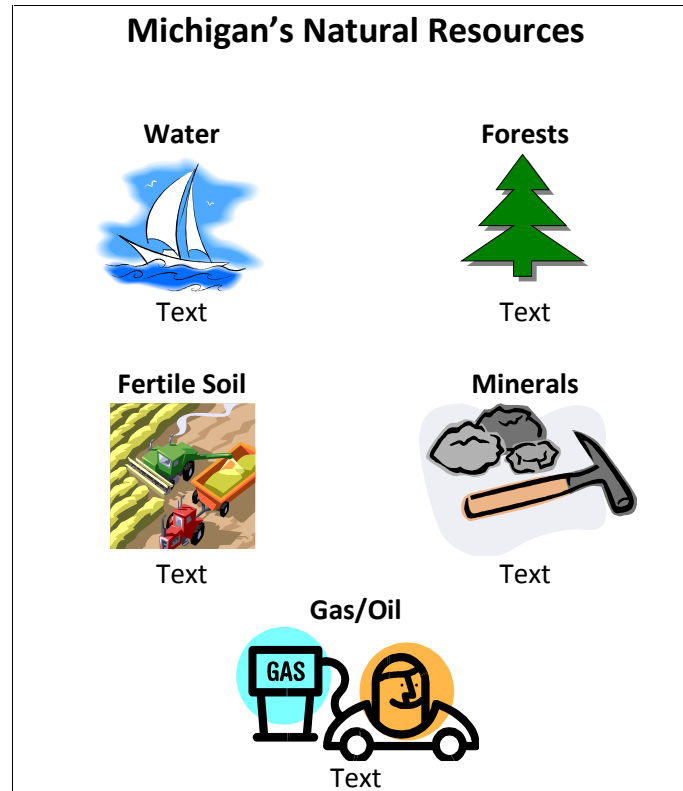
Natural Resources found in Michigan

Poster Assignment

Directions: You will create a poster that includes a picture of each of the five groups of natural resources found in Michigan (water, forests, fertile soil, minerals and gas/oil).

Underneath each picture, you must include text that explains what the picture is and whether the picture is showing **use, modification or adaptation** of the natural resource.

An outline of the poster is shown below to use as an example. You may place the pictures and text on the poster in any way you would like, as long as you include all five groups of resources. Please include actual pictures of the resources (not clipart as shown below in the example).



Sample Letter to Congressman

Please use the sample below as a guide for creating your letter to the Congressman. Make sure to include all required parts and make the letter your own (do not just copy word for word from the example – remember, it is your opinion!)

Your Name
Your Address Line 1
Your Address Line 2

Date

The Honorable Kerry Bentivolio (this is the representative for Troy, MI)
226 Cannon HOB
Washington, D.C. 20515

Dear Representative Bentivolio,

Paragraph 1: Introduce yourself and state the reason you are writing the letter.

Paragraph 2: State your opinion on the topic of protecting or using Michigan's natural resources. This is the main part of your letter and it is where you will list at least 5 facts supporting your opinion. This is also where you could include at least 2 new vocabulary words from the research.

Paragraph 3: Closing paragraph – restate your purpose for writing the letter and ask for any action you would like the Representative to take.

Sincerely,
Your Name

Letter to Congressman Rubric

| Category | 3 | 2 | 1 |
|-----------------------------------|--|--|---|
| Position | The student's opinion on the topic is clearly stated and supported by facts from the research. | The student stated an opinion and provided some support from the research. | The student did not clearly state an opinion or provide facts from the research. |
| Content Accuracy | The letter contains at least 5 accurate facts about the topic. | The letter contains 3-4 accurate facts about the topic. | The letter contains 1-2 (or no) accurate facts about the topic. |
| Sentences & Paragraphs | All sentences and paragraphs are complete and well-constructed. | Most sentences are complete and well-constructed. | Paragraphing needs some work. Many sentence fragments or run-on sentences. |
| Grammar & spelling | Writer makes no errors in grammar or spelling. | Writer makes 1-2 errors in grammar and/or spelling. | Writer makes more than 3 errors in grammar and/or spelling. |
| New vocabulary | The student included at least 2 new vocabulary words from the research. | The student only included 1 new vocabulary word from the research. | The student did not include any new vocabulary words and/or did not use them appropriately. |

Stage 3 Learning Plan

Unit Calendar

| Day | Lesson Name | Goal | Activities | Assessment |
|-------|------------------------------|--|---|--|
| Day 1 | The Giving Tree | Introduce concept of human use of natural resources & engage students in unit topic | <ul style="list-style-type: none"> • Watch video • Whole Group Discussion | Observation and participation in class discussion |
| Day 1 | Michigan's Natural Resources | Explore the five main types of natural resources found in Michigan and their potential use | <ul style="list-style-type: none"> • Examine natural resource cards • Fill out a natural resource chart | Observation and natural resource chart |
| Day 2 | A River Ran Wild | Help students understand the potential negative effects of using natural resource and determine the difference between use, modification and adaptation | <ul style="list-style-type: none"> • Read Aloud • Whole Group Discussion • A River Ran Wild Worksheet | Observation, participation in class discussion and worksheet |
| Day 3 | Natural Resource Poster | Students will use their knowledge of the five natural resources found in Michigan to create a poster depicting all five | <ul style="list-style-type: none"> • Individual work time to complete poster (may also be brought home to work on as homework) | Completed poster |
| Day 4 | Letter to Congressman | Students will be assigned (randomly) to one of the five groups of Michigan's natural resources. They will be given their research packets and begin their research | <ul style="list-style-type: none"> • Overview of research packets • Researching in class and at home | Observation and participation |
| Day 5 | Letter to Congressman | Summarize/condense their research and decide on a position and be able to support it | <ul style="list-style-type: none"> • Brainstorming • Whole Group Discussion of ideas | Observation and participation |

| Day | Lesson Name | Goal | Activities | Assessment |
|-------|-----------------------|--|---|--|
| Day 6 | Letter to Congressman | Create a rough draft of the letter that will be reviewed by both the instructor and a peer | <ul style="list-style-type: none"> • Creating Draft • Reviewing/editing | Rough draft |
| Day 7 | Letter to Congressman | Finalize letter and present to class | <ul style="list-style-type: none"> • Polishing letter • Reading out loud to class | Final letter and presentation to the class |

Hooking Lesson

Title of lesson: The Giving Tree

Your Name: Mrs. Gerding

Length of activity: 20 minutes

Overview: We will watch a 10 minute youtube clip that shows the story of The Giving Tree by Shel Silverstein (actually read by Shel Silverstein). We will then discuss the meaning of the story and how it relates to the use of natural resources.

Central problem/ Essential question: Should natural resources be used or protected? Is it better to adapt to your environment or change it?

Anticipated student conceptions or challenges to understanding: Students may have difficulty understanding that a negative consequence may not be apparent at the current time but will occur in the future (i.e. a natural resource may not deplete for 10 years, but what do we do then?). To address this we will discuss examples of natural resources that have been depleted in the past and relate this concept to things in their everyday life (i.e. spending all of their allowance in one day instead of saving and investing to grow the amount, etc.).

Materials/Evidence/Sources:

- Youtube video (<http://www.youtube.com/watch?v=1TZCP6OqRIE>)
- Projector/screen to view video

Instructional Sequence:

Step 1: Remind the students about the previous topics we discussed as they relate to Michigan's geography (natural characteristics, such as bodies of water and human characteristics, such as bridges). Have the students give examples of what they learned in that unit in a class discussion format. Next, explain to them that in this unit, we will be exploring how humans use certain natural characteristics found in Michigan and the positive and/or negative consequences of that use (3 minutes).

Step 2: Show the youtube clip (10 minutes).

Step 3: Begin a class discussion immediately after the video. Use the following questions to get the discussion moving, but allow the students to form their own ideas about what the moral of the story is and how it might relate to using Michigan's natural resources (5 minutes):

- Why is the book called "The Giving Tree?"
- What different uses did the boy find for the tree?
- What natural resource is the book about?
- What do you think the author is trying to tell us about how humans use natural resources?
- What do you think the lesson (moral) of the book is?

Step 4: Conclude the lesson by explaining that we will be learning all about Michigan's natural resources in the next week. Ask the students to try to keep the story of The Giving Tree fresh in their minds as we discuss different ways humans interact with their environment (2 minutes).

Assessment: Assessment will be informal and based on the class discussion and participation. Based on the answers they give during Step 1, going back and reviewing certain topics from the previous unit may be warranted.

Attach all handouts, texts, images, lecture notes, etc.

Youtube. The Actual '73 Giving Tree Movie Spoken By Shel Silverstein. 2008. July 24, 2013. <<http://www.youtube.com/watch?v=1TZCP6OgRIE>>.

Silverstein, Shel. 1964. *The Giving Tree*. New York: Harper and Row (if you want to have the actual book on hand as well).

Elaborate Lesson Plan

Title of lesson: A River Ran Wild

Your Name: Mrs. Gerding

Length of lesson: 25 minutes

Context of Lesson: This lesson comes directly after the students have learned about Michigan's natural resources and the ways they are used by humans. This lesson delves into the differences between use, modification and adaptation of natural resources and the resulting consequences. This lesson sets up a framework for the students to begin thinking about the consequences of human interaction with the environment.

Overview: We will read the book "A River Ran Wild" by Lynne Cherry, which depicts the negative effects that humans can have on the

environment when they cannot learn to adapt to the land. Finally, the students will complete a worksheet that requires them to take different parts of the story and decide if they are examples of use, modification or adaptation.

Central problem/ Essential question: Is it better to adapt to your environment or change it?

Objectives:

- Students will be able to describe how people adapt to, use, and modify the natural resources of Michigan (**3 – G5.02**).
- Students will know that examples of positive consequences of human interaction with the environment include providing energy, producing goods and bringing in tourism (**3 – G5.01**).
- Students will know that examples of negative consequences of human interaction with the environment include pollution and depletion of resources (**3 – G5.01**).

Anticipated student conceptions or challenges to understanding: The ideas of adaptation, use and modify may be confusing and hard to distinguish for students. Before they begin working on the worksheet, we will discuss examples of the concept (Example: If you wanted to live in a forest and had no way to clear the trees, you would have to adapt by building your house in a space around the trees. However, if you were able to remove some trees you could modify the space and build your house on the cleared land. Finally, if you did clear trees you could sell the lumber from those trees to be used for different purposes.)

Materials/Evidence/Sources:

- “A River Ran Wild” by Lynne Cherry
- A River Ran Wild worksheet

Instructional Sequence:

Step 1: We will begin by reviewing the five different types of natural resources found in Michigan (water, forests, fertile soil, minerals and gas/oil). I will ask for a volunteer to tell me one group and give an example from that group (i.e., water = Lake Michigan). After all five have been covered, I will ask the class if they think it is important to take care of these five natural resources and why or why not? I will specifically ask about the water found in Michigan and will ask the class if they know what it means to protect our bodies of water (I will be looking for answers that lead to not polluting in the rivers and lakes). Then I will tell them that we are going to read a story about a river in New England and find out what happens when people do not protect their natural resources (3 minutes).

Step 2: I will read the book out loud to the class (7 minutes).

Step 3: When we have finished reading the book, I will first ask the students what they think the moral of the story was (I will be looking for answers such as taking care of the environment, not polluting, being mindful of the fact that natural resources will eventually run out, once humans change the land it is never the same, etc.). We will then review the terms “use”, “modify” and “adapt”. I will use an example to

help solidify these terms (If you wanted to live in a forest and had no way to clear the trees, you would have to adapt by building your house in a space around the trees. However, if you were able to remove some trees you could modify the space and build your house on the cleared land. Finally, if you did clear trees you could sell the lumber from those trees to be used for different purposes.) (3 minutes).

Step 4: Once we have reviewed the terms, I will conduct a short informal assessment to make sure the students understand the terms. Using examples from the story, I will have the students tell me if they think the action was use, modification or adaptation (i.e., “Raise your hand if this is an example of adaptation,” etc.). These three examples are also included in the worksheet that they will complete (2 minutes):

- Example 1: The Native Americans planted corn and squash because those were the crops that would grow in that area (answer: adaptation)
- Example 2: Power was drawn from the river using the sawmill (answer: use)
- Example 3: The settlers built a dam (answer: modification)

Step 5: The students will complete their worksheet and we will wrap up the lesson by having an informal discussion of whether they believe the Native Americans or the European settlers treated their environment better and why or why not (using the following questions as prompts):

- Do you think the river would have been polluted if the European settlers had never arrived? Possible answers: no, or maybe eventually but it would have been much further down the road, etc.
- In what ways did the Native Americans show that they respected the land? Possible answers: by not killing more animals than they needed, by only planting crops that would work with the current soil, etc.

(the completion of the worksheet and the wrap-up discussion will take 10 minutes).

Assessment: See step 4 for informal assessment. Formal assessment will be the completed work sheet.

Attach all handouts, texts, images, lecture notes, etc.

Cherry, Lynne. 1992. *A River Ran Wild*. Florida: HMH Books for Young Readers.

See attached worksheet and answer key

Name _____

“A River Ran Wild” by Lynne Cherry

Directions: On the second page of this packet is a table that contains different things that happened in the story “A River Ran Wild.” Your job is to cut out each square and paste the phrase into the appropriate box below – Adaptation, Use or Modification.

| Adaptation | Use | Modification |
|---|---|-----------------------------------|
| Example: The Native Americans planted corn and squash because those were the crops that would grow in that area | Example: Power was drawn from the river using the sawmill | Example: The settlers built a dam |

Cut out the squares below and paste them into the appropriate box on the first page.

| | | |
|---|---|---|
| The European settlers cleared land for a village | The European settlers made paper from trees | The European settlers built fences around the land |
| The European settlers killed more beavers and wolves than they needed | The Native Americans made canoes for river travel | The Native Americans learned to make their houses out of cattails |
| People stopped swimming in the river when it became polluted | The European settlers cleared land for farming | The European settlers used the river to dump their waste |

Name _____

“A River Ran Wild” by Lynne Cherry – ANSWER KEY

Directions: On the second page of this packet is a table that contains different things that happened in the story “A River Ran Wild.” Your job is to cut out each square and paste the phrase into the appropriate box below – Adaptation, Use or Modification.

| Adaptation | Use | Modification |
|--|--|--|
| <p>Example: The Native Americans planted corn and squash because those were the crops that would grow in that area</p> <p>The Native Americans made canoes for river travel</p> <p>The Native Americans learned to make their houses out of cattails</p> <p>People stopped swimming in the river when it became polluted</p> | <p>Example: Power was drawn from the river using the sawmill</p> <p>The European settlers made paper from trees</p> <p>The European settlers killed more beavers and wolves than they needed</p> <p>The European settlers used the river to dump their waste</p> | <p>Example: The settlers built a dam</p> <p>The European settlers cleared land for a village</p> <p>The European settlers built fences around the land</p> <p>The European settlers cleared land for farming</p> |

Instructional Resources

Cherry, Lynne. 1992. *A River Ran Wild*. Florida: HMH Books for Young Readers.

Common Core State Standards Initiative. English Language Arts Standards – History/Social Studies: 6 – 8 grade. 2013. July 24, 2013. <<http://www.corestandards.org/ELA-Literacy/RH/6-8>>.

Egbo, Carol. *Supplemental Materials (Unit 1, Lesson 6)*. Teacher-made material. Michigan Citizenship Collaborative Curriculum, 2009.

Michigan Citizen Collaborative Curriculum. Third Grade Unit 1: The Geography of Michigan. 2013. July 24, 2013. <<http://scope.oakland.k12.mi.us/default.aspx>>.

Michigan Department of Education. K-8 Social Studies Standards. 2013. July 24, 2013. <http://mi.gov/mde/0,4615,7-140-28753_64839_38684_28761---,00.html>.

Silverstein, Shel. 1964. *The Giving Tree*. New York: Harper and Row.

Youtube. The Actual '73 Giving Tree Movie Spoken By Shel Silverstein. 2008. July 24, 2013. <<http://www.youtube.com/watch?v=1TZCP6OqRIE>>.

Reflection

Creating this unit was a very eye-opening experience! Before taking this course, we had a brief introduction to Understanding By Design, but we were never actually required to create a unit using the UBD process. I felt as though I understood the reasoning behind UBD and the idea of planning with the big ideas first and working my way to the lesson plans last. However, when it came to building my unit I definitely struggled with not finding the fun lesson plans and activities first! It took me awhile, but I finally understood that once you plan the “trunk” of the tree, the “branches” and “leaves” actually seem to fall into place.

I think I will use the skills I obtained from planning this unit for the rest of my teaching career. Creating this unit (and really, mine was only a mini-unit) was incredibly time consuming, but once I was finished I saw the many benefits of taking so much time on the front end. I felt as though I could integrate any number of lessons and activities to my unit and tweak them to be able to fit with the big ideas, instead of vice versa. Before creating this unit I had the mindset of building my unit around the activities and I can now see that not only is that not the smart way to do things, but it also creates more work for the teacher in the end. If you do not have a strong, central theme to focus on you are constantly restructuring the core of the unit and making everything harder on yourself and your students.

The biggest challenge I faced while creating my unit was staying focused on the main theme of the unit. As I reflect back, I may have bit off more than I could chew with taking on the idea of natural resources of Michigan **and** the idea of human-environment interaction. I was constantly struggling with how to integrate the content relating to the natural resources (i.e., the Great Lakes are a natural resource, they are used for these

purposes, etc.) and the more conceptual idea of the consequences of using/abusing natural resources. If this was an actual school year that I was reflecting on, I would consider breaking this mini unit even further into two mini units: one that strictly deals with the definition of Michigan's natural resources and one that deals with the human-environment interaction of Michigan's natural resources (and the consequences that occur).

I also struggled to make my lesson plans detailed enough for a substitute to follow. I think this may have been the area where I learned the most because it did not come naturally to me to explain statements to the degree of detail that was necessary (i.e., I could not just say "Discuss the consequences of using natural resources," I had to actually list the questions and discussion points). I think this was so important for me to experience because I think I overestimate my ability to ad-lib once I am delivering a lesson and I need to take more time on the front end to flesh out the details.

I think I am most proud of my ability to build a mini unit that I feel very comfortable taking into a job interview (or an actual classroom once I have a job!) that really depicts my understanding of the UBD process and the importance of backwards planning. I feel that I put a lot of effort into learning the science behind the design and I tried very hard to incorporate all of the important aspects into my unit. I know that my unit is not perfect, but I feel as though I know the areas I need to improve and I have a plan to implement those improvements. I think that my lessons and performance assessments were unique and really tied the main ideas of the unit together. I would be very confident defending my thought process behind building this unit to any Principal or colleague and I think that is very valuable skill for a novice teacher to have!