American Water

Kevin Doby
Ninth Grade U.S. History

Cover Letter

Dear DIT students and teachers,

I am writing you talk about our Curriculum 305 class and my ninth grade US History Unit titled American Water. Our class is designed around the place-based education system that utilized a student's community to the most of our ability. We strive to connect students to the community (including nature) around them and connect the community with the students.

I hope to do that in my unit by having my students investigate how water has shaped the foundation of America and Michigan's society. They will do this by learning about how people have gotten to live where they do, the importance of water for a civilization, the dangers of pollution, and how they can utilize their watershed. The unit will also be somewhat integrated with their biology standards by having them delve into what exactly is polluting our waterways.

I cannot tell you all how excited I am to be leading the students down this journey and I hope that you join in my excitement as well.

Thank you,

Kevin Doby

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Unit Rationale

Water is not American. American water is not essentially different from water across the globe. However, one cannot fully understand American, nor Michiganian history, or the current political and social climate without a deep study and understanding of the role water plays and has played in forming American society. From the way the Native Americans treated the water, to the first European settlers arriving on this land, to the current drought in California and debates on hydraulic fracturing (fracking), water is integral to it all. That is the focus of this unit. This American Water.

This unit will be taught at Cody-DIT High School in Detroit, which is located on the far Western side of the expansive city in the Cody-Rouge neighborhood, nested near the Rouge River. The guiding question all ninth grade students are being asked to think about this year is, "What role could the Rouge Park play in making Cody-Rouge a more just community?" My students will be thinking about the Rouge park and more specifically the river as it relates to their lives specifically as well as how it relates more generally in terms of what water means to American society. Based on our "Walk in the Park" and the assembly we attended, a couple of the biggest strengths the school and our students have is their general curiosity about the park (and river) and their love of their city. These two qualities can be used heavily in this unit as we all strive together to learn about water quality and how we as a class can work to make the park a place for us to enjoy.

The school's location on the far west side so close to the surrounding suburbs also provides a good jumping off point for a discussion about race, white flight and the civil rights movement. The city's location also lends itself to easy discussions of the

importance of water in settlement due to being located on multiple rivers and lakes. Also, one of the things that has stuck with me about the park as the constant gunfire from the police range and one of the students reactions on the poster board of, “they be shooting.” This could then go to a discussion about other parks, and whether or not parks in other places have constant gunfire and what that says about the park, the neighborhood, and my students feelings about not being able to go to a park without hearing gunfire from the police no less. This will be done via a conversation about another big park in the surrounding area and connecting the differences to white flight and the racial makeup of Detroit and surrounding areas.

On top of that the neighborhood and the river’s name lends itself to a bigger discussion about manufacturing and the industrial revolution and its relationship to water. For myself, if someone were to have asked me about “the Rouge” before this class my initial thought probably would not have been the river itself but the Ford manufacturing plant that shares its name with the river. This can then jump into a discussion about the different values we place on names and how different people in different areas may think very different things when hearing the same word or name.

This Unit is taught via the Place-based approach to education. This process places an emphasis on where the students are geographically and connecting them to their surrounding community and connecting the community to them. This is done for a number of reasons. First of all it provides a very real connection for the students to the subject matter. Even if they are not that familiar with their natural surroundings used in the approach (as our students seemed to be at the Walk in the Park) it is still something very close to them. I would argue that them not being familiar is almost better because it

does then build off of the natural sense of curiosity and wonder intrinsic in so many kids. Connecting the curriculum to their lives and their surroundings gives them a better opportunity for the material presented to stick with them and give them lasting knowledge. On top of that, through projects done in the unit, it can provide a real benefit not just to the students but to their physical and metaphorical community around them. Whether it is through cleaning up a park, starting some urban farming initiatives, or learning how to work within the political structure of their municipality, they will be learning how to not only better themselves, but others as well. This is important in the short-run via the projects done, but also in the long run through hopeful changes in philosophy.

The changes and content will be presented through this unit by asking the essential question of "how has water helped shape the foundation of America's and Michigan's society and culture?" This can be done through several lessons that show how water has played in an important role in the foundation of America, the state of Michigan and the city of Detroit. The biggest idea I think students should grasp is how important water has been in the forming of American civilization as we know it today. This would start with the European settlers traveling here via the Atlantic Ocean, to the founding of Detroit at the convergence of multiple watersheds, and Michigan being populated enough to reach statehood via travel down the Eerie Canal. Some of the other key concepts I want students to be able to grasp through the lesson include: what is a watershed and what is our watershed? I think this will be an important concept for my students to grasp as they begin to wrestle with what the Rouge means to them. Also: what difference was there in how the European settlers and native Americans viewed the land, how has water

been used as a boundary, and to be able to discuss what some of the main issues regarding water are occurring in Michigan and/or America today? I also hope my students through this unit will gain an understanding of how to think outside of themselves and how the decisions they make can affect (positively or negatively) others.

While this does not seem like a standard chronological fit in terms of American history as it covers the whole spectrum of that timeline, I think it is a very good introduction to how I want to teach and my students will gain an understanding for what my classroom will feel like with me as their teacher. I will also be able to meet numerous content standards through the unit and my lessons. The overall theme of the unit and the essential questions brings a very geographical approach to history so lots of the national geography standards will be met including 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, and 18. In terms of the actual historical standards there are also several. The lesson discussed earlier about the industrial revolution and its ecological impact would meet standard 6.1.1. The discussion about how people move and where they move to meets standard 6.1.1, 6.1.3, 6.1.4, and potentially 6.1.5. Discussions about water pollution can be framed using the Tennessee Valley Authority and connected to the Rouge to satisfy standard 7.1.3. The lessons about the civil rights movement and white flight will meet standard 8.3.2 and 8.3.5. Finally, there will be multiple assignments to go along with fulfilling standard 9.3.1. These include the policy debate in class about fracking and the Real Life Challenge which gets them in front of members of the community and talking about a problem or the history of the city.

There are a few major assignments in the course that are all pretty well differentiated, mostly via the final product of the assignment. The firs assignment will

come in class as a part of my cooperative lesson. Students will be tasked with creating some form of representation of what life was like a migrant to Michigan, either during the initial wave in the early to mid 19th century or during the Great Migration of the early 20th. Another of the big assignments will be the students' participation in the policy debate at the end of the unit. They will have had to have formed hypothesis and thesis arguments about the issue of fracking in Michigan and come prepared with notes for the debate. For students who may for ability reasons or pure shyness not be able to participate in the debate fully things can be arranged with me ahead of time including: alerting students well ahead of time when they will be talking, and in potentially more "extreme" cases a written or other assignment that still shows the knowledge and skills gained without having to participate in the debate. Finally, the last big assignment is the Real Life challenge in which students will be getting in front of the Detroit Historical Society or one of several city run or non-profit groups to showcase the knowledge gained over the course of this unit. This Challenge will be differentiated via product and intelligence.

Differentiation is something that I try and take very seriously in general and with this unit. I think that one of the things that I need to be most conscious of as a teacher is "are all my students achieving the same level of knowledge attainment based on my teaching style?" I need to be constantly aware that my students will be learning differently at all times and I need to meld my teaching around their ways of learning. I do this in a number of ways over the course of the unit. In most if not all of the lessons presented for grading there is some differential via how the knowledge is given to students: from reading, to me talking, to videos, to discussion, there is always multiple

ways the material is disseminated. I also make sure to try and get the students up and moving as much as possible without being distracting in order for them to get some sort of kinesthetic learning going on. I think right now as an early teacher the easiest way I am finding to differentiate is via the final product in an assessment. This is done in all of the assessments I have except for the thesis writing, as that is a specific concept I want my students to be able to grasp in order to succeed on standardized tests.

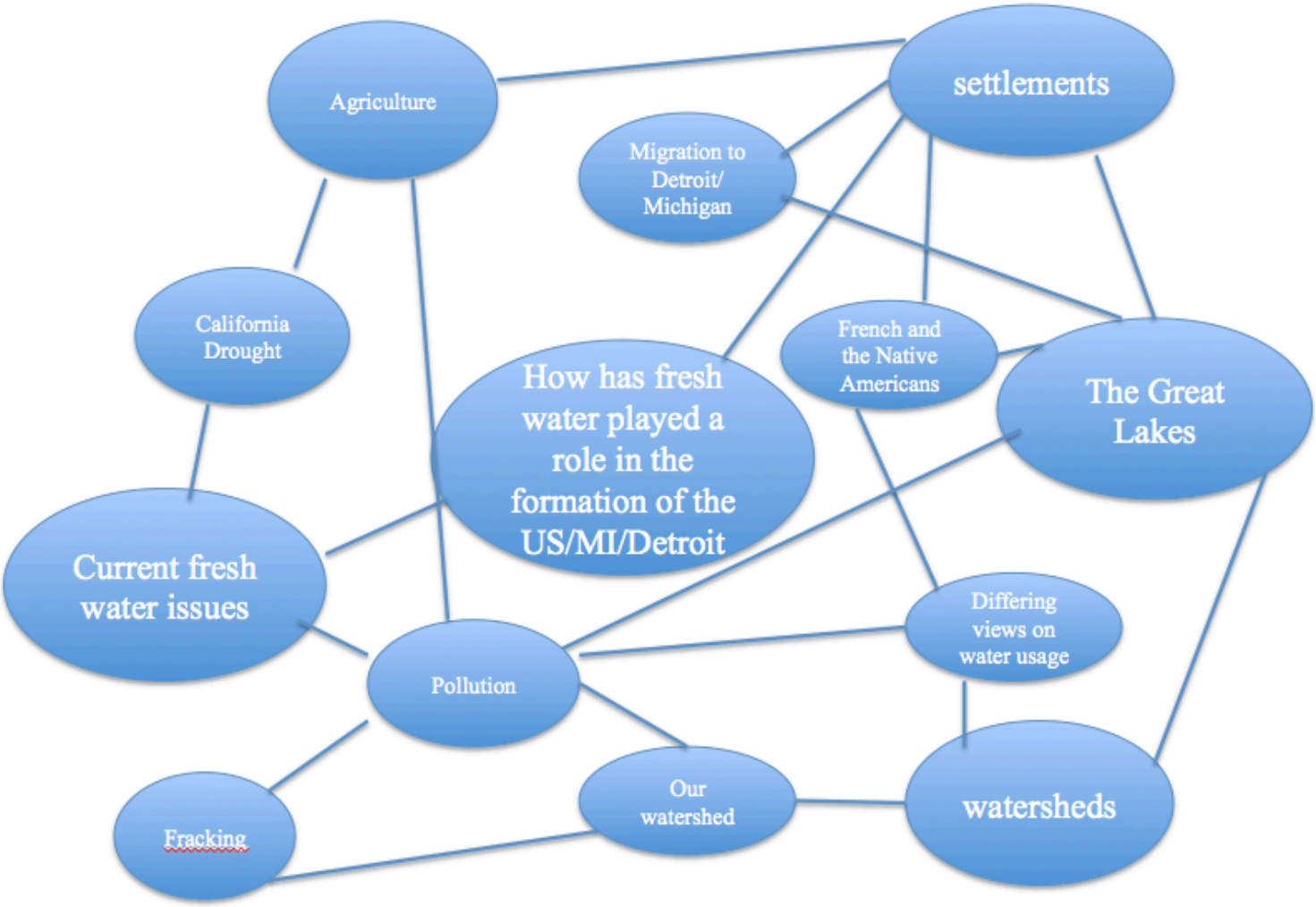
This unit very much fits my philosophy of why I want to teach. This philosophy was well-formed coming into this class, but I can feel lit coming fully into focus more and more each day. First foremost with this unit I hope to give my students a voice in the classroom and the world. I want students to leave my classroom with not just knowledge of the standards but with knowledge of the world at large and how to operate in that world. I believe this unit will be a great starting point to a year in a classroom where I do just that. I want to get this information to my students without coming across as preachy, or that I am trying to force my ideals onto them. While I may be a left-leaning, world-loving person, I believe I can teach his unit without making that painfully obvious. The world is around us, and by using place-based education, I can give very real examples of the ecological issues I want to teach about and connect them to the history of our area. I think it can be very easy to turn history into a "blame white people" game, and while I think sometimes that's not all together wrong, it is also a dangerous game. I don't want my students to think that all of the injustices in the world are the fault of white people because as we have seen, odds are their teachers are going to be white. I want them to know it is a human condition, and I think that I can do that with this unit.

Scope and Sequence Chart

Lesson 1 **Early Michigan: The Native Americans and the French** -Introduce concepts of watershed usage and how varying groups of people view and use the land and water. -Introduce the concept of how water is important to settlement founding via Mackinac and Detroit	***Lesson 2*** **Coming to Michigan and Detroit: Founding a state via the Erie Canal** -Further flesh out concept of the importance of water in settlement founding via the Erie Canal and Detroit and how Michigan became a state -Begin talking about how people began to come to Michigan in large numbers	***Lesson 3*** **Going from Rural to Urban: The Industrial Revolution and the changing of our watersheds** -Introduces the Industrial Revolution via the automobile industry -Connects to students' lives by looking at massive factories on the Detroit and Rouge Rivers. And looking at how they are polluted
Lesson 4 **"The Yellow River": Or how we view our water can lead to pollution** -Uses stark visual aids to show how a watershed can be polluted -Connects to earlier learning about the different ways of viewing the land and the water -Utilizes multiple forms of learning via the pictures, readings, and discussion -Utilizes movement in group work and a differentiated product in assessment	***Lesson 5*** **Coming to Michigan (Again): The Great Migration and the rise of Detroit's black population** -Connects to earlier lesson on how people came to Michigan -Will attempt to connect to students' lives via extending the lesson and asking how their families came to Michigan and Detroit	***Lesson 6*** **Portrait of a Michiganian Migrant** -Connects to prior lessons by having students imagine what life was like for those who came to Michigan -Varies learning by having four different products of assessment. -Those products allow for differentiation via intelligence, learning style, and readiness. -First fully cooperative lesson

Lesson 7 **Writing a Thesis: How do we affect the drought in California?** -Connects a broad concept to the students lives by looking at how and what they eat affects water usage in a state thousands of miles away. -Focuses students on writing solid thesis statements using academic language. -Lesson is differentiated in how the learning is attained.	***Lesson 8*** **Looking back at our "Walk in the Park"** -Reflects on students time at the park and their reactions to being there -Connects to school's essential question by getting students to start thinking about how to make the park/community more just. -Differentiated via learning styles in how the information is presented to the students -Gets students up and active multiple times at the beginning of the lesson	***Lesson 9*** **Fracking in the State of Michigan Part 1** -Introduces a current political topic that is up for debate and encourages the formation of opinions and theses. -Differentiated via readiness in how the knowledge of the topic is attained -Allows for students to form a hypothesis, gather new facts, reform their hypothesis and then repeat that process.
Lesson 10 **Fracking in the State of Michigan Part 2: Debate** -Synthesizes students' learning from the previous lesson into a policy debate in the classroom. Attention will be paid to students who may not want to participate in the debate via: preparing them for it and giving them warning on when to speak or in more extreme cases a separate, written assignment	***Lesson 11*** **Real Life Challenge** -Incorporates all knowledge gained over the course of the unit -Differentiated via product -Gets students active in the community and gives students real agency	

Concept Map


Agriculture
settlements
Migration to Detroit/ Michigan
California Drought
French and the Native Americans
The Great Lakes
How has fresh water played a role in the formation of the US/MI/Detroit
Current fresh water issues
Differing views on water usage
Pollution
Our watershed
watersheds
Fracking

"The Yellow River" – Choice Lesson #1	
Objective	*Students will be able to …* understand the connection between how the Western Europeans viewed land and water usage and water pollution today
Big Concept	Students will be able to question the ways humans use the land and water and the different ways of thinking about that usage.
Lesson Rationale	In this lesson I hope that students will be able to see how human decisions can have big consequences
Standards	K 1.6, K1.8, P 1.1, P 2.3, USHG: 6.1.5, 6.3.1 HSCE: 3.5.4, 5.4.3
Supplies Needed	Pictures, newspaper articles, Bluetooth speaker, powerpoint, headlines worksheet
Introduction	
DO NOW!	
Steps	
1) Do Now, writing. (5-10) – Show picture of the polluted Animas River in CO and have the students write down: 1) what they think may have happened and 2) how European views on land use could lead to this 2) Class-wide discussion about do now (5) 3) Play clip from "Jumpman" by Drake and Future (0:20-0:24) 4) Class read newspaper articles about the spill (5 minutes) 5) Answer questions about the article (5 minutes) 6) Play clip from "Diamonds Dancing" by Drake and Future (1:11-1:16) 7) Questions about rouge river (i.e.: if this were to happen to the Rouge what would you do?) (10 minutes) 8) Play clip from "Big Rings" by Drake and Future (0:50 – 0:54) 9) Headlines co-op activity. Students will get into groups. The will individually come up with five newspaper headlines about the days activity. They will then choose their best. Students will then discuss as a group each of their headlines and select one to be read to the class. (15-20)	
Assessments/Evaluations	
Headlines activity and its responses	

Reflection
The discussion at the end of the headlines activity where each group reads their headline will serve as them reflecting on what they have learned today as well as in past lessons in an attempt to lock it in.
Differentiation
I have differentiated by the Do Now questions via readiness. I do not expect all students to get to the third question and potentially grasp how Western European land use patterns may lead to the yellowing of a river. I will also differentiate the "Headlines" so that if someone would like to come up with a drawing that could go along with the headlines as "art" as we would call it in the newspaper business they can do that.

Framing the Lesson

This lesson comes fairly early on in the unit. It is built on discussion we have already had about the differing ways people view the land and water we use to live. This will be done by using two different articles about a gold mine explosion caused by the federal government that turned a Colorado river to turn yellow. I will also connect this back to the students lives and essential question by talking about the Rouge River and other Michigan rivers and what pollution might be in them as well as how the students may try to fix a yellow river.

Do Now! (10-15 minutes)

The goal of the Do Now! Is to get the students brains firing towards what we will be discussing and working on for the rest of the lesson: how water can get polluted and what affect that has on the people who depend on that water on a daily basis. To start this off in a bold and colorful way, there will be a couple pictures of the Animas River in Colorado after it turned yellow from the explosion of a Gold Mine along its shores. I will ask my students to think about this in a few ways:

1) What do you see

2) How do you think this could have happened?

3) Think back to our discussions about some Western European views on land use versus Native American views. How might this picture represent those conflicting views?

As the students are writing down their answers to the questions I will circulate around the room to see if they are getting at what I am hoping they will. I will check to see their understanding of the pocutres and what t could represent and how it got that way. I am

not anticipating every student will fully grasp the last question and be able to write a perfect response. I will know what students may need some assistance or a little push in the right direction for the last question and will make sure to stop by their desks and see how they are doing with the Do Now.

After they are done writing their answers to the questions we will come back together as a group and I will ask the student to silently raise their hands to answer each of the questions.

Transition

"Okay, so now that we have heard from a bunch of y'all, lets talk about what's actually going on here. These pictures are of the Animas River in Colorado. And what happened was the US. Environmental Protection Agency was investigating a leak at a gold mine attached to the river. They accidentally worsened the leak and created a spill sending millions of gallons of wastewater into the river. We're going to read a couple short newspaper articles about the spill from a couple different perspectives. How many of y'all read the news? Well you're going to aget a couple good examples of newspaper writing here, and we may just be working on some news stuff of our own later on today. Does anyone know what the big bold words at the start of the article are called? That's right a headline. While you're reading the articles, think a little bit about how the people who wrote them may have come up with those headlines."

Reading and Analyzing

After I feel we have adequately discussed what my students think has happened to the River, we will go into much more detail about what actually did. This will be done by reading as a class two newspaper articles that I avhe chosen about the spill and its aftermath. The first is a short article from the New York Times from right after the spill tok place that gives a description of what transpired. The students will learn that the spill actually occurred due to a activity being undertaken by the US EPA at the mine, and that the governmental agency tasked with making sure our environment is clean caused the river to turn yellow. After the reading is done I will ask for some brief thoughts about what they had just read, their initial reactions. I will also ask some guided questions like: did you notice who caused the spill? And: how would you feel if the Government caused something like that to happen in your backyard?

The next article comes from the Denver Post and it is from a few weeks after the spill. It outlines how Navajo Tribes downstream from where the spill took place feel as though they have lost part of their way of life due to the spill. They cannot farm water their land with water from the river they feel and thus, a large percent of their economy and their food source has dried up. After they are done reading I will again ask them for their initial reactions to the article. Then follow that up with, “Do you think this fits anything we’ve talked about in class before?” In hopes they will connect it to the discussions we have had about differing views of water. Then I will ask them how come they think the Navajo may have stopped all their farming and irrigation when the EPA said that just because the water changed color that doesn’t mean they are at risk?

Connect to the Community (10 minutes)

Next I will attempt to connect this lesson to the studnets' lives and the "Walk in the Park" activity done before the unit started. I will place on the board two pictures of the famous Ford River Rogue factory that lies on the river we went and visited. I will quickly ask them what they think the building is. I will tell them that it is a famous and huge manufacturing plant just down the road from them. While it has never directly led to any pollution it lays on their river that is polluted with PCB's as shown on the map in their class binders from the textbook "Human Influence."

"Okay so you have seen what can happen to a river via pollution and the outcomes that can have on the food and livelihood of those around it. Now I have a question for all of you: if something like what happened to the Animas happened here; so the Rogue turned yellow with pollution, what would you do about it?"

I would encourage them to share their ideas of what they can actually do to help fix a situation such as that and to listen to each others ideas and to try and build off of one another's.

Headlines (15-20)

"Okay, remember earlier when I said we were going to do some work as newspaper people later? Well now is that time. W are going to be writing some headlines based on the rest of today's lesson. First, I'll show you a couple of examples: [places two headlines from earlier readings on the board]. Cana anyone tell me how they may have come up with these [cold call someone who I have talked to earlier about asking them this]. I will then explain that headlines don't need to be as long, or even be a sentence. I will show a famous (in the area) example of the front page of the Detroit Free Press on January 2,

1997, the day after U of M won the National Football Championship with the headline of "Hail Yeah!" So those are some examples of what a headline is, does anyone have any questions of clarification? Okay, so I'm going to divide you into groups of four. But before we start, can anyone tell me another striking part about that U of M headline? (Hope someone mentions the picture of Charles Woodson, if not bring up the image.) One member of each group should also be the "photo" expert for the group and draw a picture, or "art" for the headlines. I would the other three group members to try and come up with headlines. Two of you should write five each. Then you will share them with the last member of the group, or the "editor." He or she will determine each person's best headline and then the whole group will chose which one is best. After all groups are done they will present their winning headline and "art" to the class. After each group has shown their work, we will vote as a class as to what was the best headline for the lesson. GO!"

Wastewater Spill in Colorado Turns a River Yellow

By DANIEL VICTOR
New York Times

Environmental officials in Colorado are working to clean up one million gallons of wastewater containing heavy metals that spilled from an abandoned mine, turning a connecting river a murky, mustard shade of yellow.

The Environmental Protection Agency caused the spill on Wednesday while it was investigating a leak at the Gold King Mine. The wastewater flowed into Cement Creek, a tributary of the Animas River in southwestern Colorado, and snaked through the river toward New Mexico.

E.P.A. officials confirmed the leak contained heavy metals, including lead and arsenic, but said it was too early to know whether there was a health risk to humans or animals. The river was closed for recreational and other uses, but officials said water sources should be safe.

“The orange color is alarming to people, but that is not a sign in any way of a health risk,” said Joan Card, an official with Region 8 of the E.P.A. Testing is ongoing, she said.

Martin Hestmark, an assistant regional administrator with the agency, estimated that the wastewater was flowing at about a few hundred gallons per minute. The E.P.A. is changing the flow of the wastewater to treatment ponds it is building.

During a community meeting on Friday, Dave Ostrander, the E.P.A.’s director of emergency preparedness for Region 8, apologized on behalf of the agency, according to The Denver Post.

“We are very sorry for what happened,” Mr. Ostrander said. “This is a huge tragedy. It’s hard being on the other side of this. Typically we respond to emergencies, we don’t cause them.”

Navajo farmers suffer after Colorado mine fouls southwest rivers

By Jesse Paul
The Denver Post

SHIPROCK, N.M. — Roy Etcitty walked from his dead crops to the nearby banks of the San Juan River, where he stood in the mud and cried.

After more than a week without watering his field with the San Juan or using its waters to keep his horses hydrated, Etcitty, his long black hair waving in the evening breeze, pondered the river's meaning and was overcome.

"It's everything for us," he said. "It's a part of our life, they say. It's our livelihood."

In the Navajo Nation, where the San Juan runs 215 miles before emptying into Lake Powell in Utah, the 3 million-gallon Gold King Mine spill has put officials on alert for what they fear will be economic disaster. This mainly farming-based culture, where bartering is still widespread and a cow can be used as a car down payment, crops are drying up under an unrelenting sun.

Fearing the effects of contamination from the wastewater that was spilled from the mine, tribal officials have warned their people against using the San Juan's waters for irrigation or to feed their livestock. It wasn't clear Monday when the advisement would be lifted.

Farmers, however, say even after bone-dry irrigation ditches are running again, worries will continue — possibly for decades. The cost of the EPA-caused spill on Aug. 5 remains unclear, the tribe says, but they are seeing impacts across the 27,600-square-mile reservation.

"There's a huge loss of revenue for our people," said Russell Bengaye, president of the Navajo Nation.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Portrait of a Michiganian Migrant – Cooperative Lesson	
Objectives	*Students will be able to …* create a model of a canal. Write a letter as though they were a early settler of Michigan.
Big Concept	What it was like to be an early settler of Michigan and as a new citizen in Detroit during great migration
Lesson Rationale	Use varying forms of intelligence and assessment to let kids piece together what life was like for early settlers of Michigan.
Standards	K 1.4, K1.9, P1.4, USHG: 6.1.1, 6.1.3, 6.1.4,
Supplies Needed	Pictures of MI pre-major colonization, maps of early Detroit and then current Detroit, pictures of boats traveling down Eerie Canal. Materials for making a canal.
Introduction	
DO NOW!	
Steps	
1) Do Now (5-10) – What was it like for the first people to come to Michigan? How did they come? What about those who came in the great migration? 2) Share how students families came to Michigan(5-10 minutes) 3) Go over the two big migrations to Michigan: after the Eerie Canal opened and during Jim Crow South. That we have already discussed(5-10 minutes) 4) Break up class into groups for the creation activity.	
Assessments/Evaluations	
The final product of their creation	
Reflection	
They will reflect via the extend homework “assignment.”	
Differentiation	
I have differentiated by the varying products that can be created in the final product of the creation activity.	

Framing the Lesson

This lesson comes after two prior lessons in which we as a class discussed when and how many people came to the state of Michigan and the city of Detroit. It connects to the unit's essential question by looking at how water played an integral role in people coming to the state and the city. It builds further upon the earlier lesson by placing the students into the shoes of those who may have migrated here.

Introduction and Rationale

The purpose behind this lesson is to compare and contrast the two main times people migrated to Michigan and also two main migrations in the country as a whole. The first would be when Michigan officially became a state after it became easier to come to the state after the completion of the Erie Canal. The other being the great migration of many black Americans during the Jim Crow era in the south that saw many moving north to cities like Detroit. Both of these migrations will have been discussed in separate lessons. The Great Migration in an earlier unit and the Erie Canal having just been talked about. They will do this through a quick Do Now and a little discussion of how their families came to Detroit that was an assignment from the previous lesson. Then it will culminate with a cooperative learning assignment where groups of four will work on individual products that when brought together will show a picture of how people came to the state. They will be broken down into groups based on learning style and readiness.

Do Now (5-10 minutes)

When the students enter the class they will see pictures of what it may have looked like for people riding on a ferry through the Erie Canal as well as some early black migrants to the city of Detroit during the Great migration. They will be asked to write a few quick

paragraphs based on prior lessons about: how did people come to Michigan originally? How did they come during the Great Migration? After students have been writing for a while, I will ask a few of them to share via cold call. I will come up to one student who I know needs some time to gather their thoughts that I will be asking them to answer the first question.

Follow-up yesterday's extend (5-10 minutes)

"Okay class, yesterday at the end of class I asked y'all to ask your families, friends, anyone older that you trust a question: how did your ancestors come to Michigan and/or Detroit? Now I talked to a few of you between then and now so I know some of you have some good answers but I'd love to hear from as many as I can. So can you politely raise your hand and listen to your classmates and they talk about how their families came to this great state?"

Cooperative Creation Activity (30-45 minutes)

"Okay everyone, its time for a activity. Today we're going to be working to create a picture of what it was like to be one of the people who originally came to this state. This can be someone who came nearly 200 years ago or at the turn of the 20th century. There are going to be a number of ways this is done. I have selected groups for you and if you look at the piece of paper on your desk you will see just exactly what I am looking for you to do. Everyone will be in a group, and each group will have to create an idea of what it was like to come here. Afterwards I want y'all to walk around and see what your classmates have come up with? Okay? LEH DO IT!"

The Engineer/Architect/Builder

Ahoy! You have before you a box o' goodies that you will use to help build a canal! By now you should know that Michigan wasn't able to be fully settled until the Erie Canal was built making ship travel easier from the East Coast of the United States through the St. Lawrence waterway to Michigan. So here's what you need to do:

1) Empty out this box in front of you onto the floor or desk or whatever, don't be afraid to make a little bit of a mess. Building thigns is about cleaning up mistakes as my engineer father would say.

2) Figure out how you could build a canal out of the materials presented. You also have a diagram of what the Eire canal looked to give you a little inspiration

3) There really isn't a wrong way to do this! However, it should be able to hold a little bit of water or else it wouldn't really work for carrying ships would it! When you think you are done with your canal, come let me know and I'll give it a little water test. If it can't hold the amount I pour in, you may have to make some adjustments which is quite alright!

4) If you finish before the time expires come to me again. I will provide some extra materials for ship-building

The Weary Traveler

Woof. That was one heck of a journey. You just left your family and everything you've ever known to move to a brand new state. Michigan. It is either the 1830's or the early 20th century so maybe it isn't really a "state" yet depending on what time period you chose. With those options being know, you must decide with the other **Weary Traveler** in your group about which one of you will be which and then here is what you should do:

1) It is the 1830's and you have arrived in Michigan via the Erie Canal and you have been here a few weeks. Now that you're settled in it seems only right to write a letter to your loved one that:

a) Tells them where you settled down (Detroit or elsewhere in the state)

b) What the trip was like and what Michigan is like

c) What life is like where you decided to move to

d) What you will do for a living and what your neighbors do

2) It is the early 20th century and you are a black American from the south that moved to Detroit to escape the Jim Crow south. You've lived in Detroit for 3 months and are just now getting around to writing a letter to your loved ones back home that:

a) Describes what Detroit is like at the time and specifically the massive amount of manufacturing

b) What do you do for a living and what do your neighbors and friends do

c) Describe the area you live in. What is the nature like and what other kinds of people do you live around?

d) How do the white people treat you?

e) Do you think it was smart to move? How are you feeling about that?

The Historian

Greetings and salutations fellow history buff! Your classmates are working on different projects that describe what life was like for people who came to Michigan during two key migratory periods. As a historian the task I have set out for you is reasonably simple:

1) Create a Venn diagram that compares and contrast the journeys and the reasons for moving to Michigan between those who helped found the state and those who moved north during the Great Migration.

-Think about some of these key words as you work on it:

-Freedom, health, motivation, jobs, land, space, discrimination,

2) Write a short essay of about three paragraphs about if you were to chose between one of the two periods of migration, which one would you take part in. Be sure to use the key words above as well as anything else you may have put into the Venn diagram. Make sure you clearly outline the reasons for you choice while also making clear that the other choice was viable as well.

The *Artiste*

Oh well hello there! You look familiar… Have I seen you at the art showcase in the city? I have? Oh, I positively adore your work. I, being a person of wealth would love to commission you to do a piece for me, do you think youd be interested? You would? Well heavens to Betsy I couldn't be happier. I'm not much of a stickler, but my friend Mr. Doby is and he has some guidelines for you to follow for this work as it will hang in our shared office space. Thank you again.

1) You are an artist in the 1830's whot raveled with your family to Michigan because your father wants to get you out into the land and work the field. You could not want to do anything less. You have decided to either:

a) Abandon your family in Detroit and try to eke out a living as a struggling artist or:

b) Follow your family and agree to work the land but still se as much free time as you can to work on your art.

2) You are a black artist from the south who traveled north to Michigan to escape the Jim Crow south.

Whichever you choose your instructions are simple: draw, or watercolor what you see where you are. You could decide to chose what you do for a living if its not solely art (like factory or farm work).) Or you could choose to depict where you live. The choice is yours. You can depict your life however you see fit. 

Writing a Thesis: How do we effect the California Drought – Direct Lesson	
Objective	*Students will be able to …* write a clean introductory paragraph highlighted by a well-thought thesis statement
Big Concept	Students will be able to analyze a topic and provide a thesis statement with their own voice and some info to back it up. Students will also understand where their food comes from and how much water is used to produce it
Lesson Rationale	In this lesson I hope that students will be able to understand how thesis statements work and be able to start crafting their own. I also hope they begin to get an understanding of where their food comes and how that affects where it is grown.
Standards	MI HSCE: P1.2-5
Supplies Needed	Gallon of water, gallon of milk, bag of rice, orange, sweet potato, spinach.
Introduction	
DO NOW!	
Steps	
1) Do Now, writing. (5-10 minutes) – On the board will be a question: what is a thesis statement? On a piece of paper display to me however you wish what a thesis statement is. Discuss as a class and give a definition of a thesis. 2) Show pictures from the California drought and talk about how they are having to ration out their water and how much agriculture and food California grows. (5) 3) Show ads for "Real California Milk" from Youtube (https://www.youtube.com/watch?v=IyI6bLn3G_w) (2 minutes) 4) Have class briefly go over the NY Times infographic on "How you contribute to the Califronia drought" (http://www.nytimes.com/interactive/2015/05/21/us/your-contribution-to-the-california-drought.html?_r=0) (5 minutes) 5) Go over the article and demonstrate with the produce and water for the whole class to see (5 mintues) 6) I will write a thesis about the information we have learned (1 minute) 7) I will go over how my sentence is a thesis statement/what is a thesis statement and have the class discuss this as well (5-10 minutes) 8) Have class get into "headlines" groups and come up with a thesis statement	

as a whole group (5 minutes)

9) Will then hand out sheet with more examples of thesis statements and opening paragraphs. Students will be able to read these as they write their own opening paragraph and thesis based on the lesson. This can be finished at home and will also be the "Do Now" tomorrow as well as some discussion

Assessments/Evaluations
Paragraphs finished at the start of the next lesson
Reflection
The reflection for this lesson will come at the start of the next lesson. Students will finish their paragraphs then (if they are done there will be another activity for them to do regarding theses) and we will discuss as a class
Differentiation
I have attempted to differentiate via their routes to the knowledge needed to write a good thesis statement. It is not really possible to differentiate the product in this scenario, as the outcome is a good thesis statement. However with the ads, the pictures, the NY Times infographic and me demonstrating, I have given a number of different ways students could understand what the thesis should be.

Framing the Lesson

This is an important lesson for the unit because it will set up some of the biggest assessments at the end of the unit, which will be based around the creating, and organization of a thesis statement and essay. It will do this via learning about the California drought and the ways in which agriculture and the food we eat here in Michigan can affect the drought. It connects to the unit's essential question because it proves how important fresh water is and how scarce it can be. It also shows how interconnected we are as a nation through water

Do Now! (5-10minutes)

The goal of this lesson's Do Now! Is to try and figure out what they know about thesis statements and what needs to be hashed out more in class. As students sit down and are getting ready for class they will see the question "WHAT IS A THESIS" written on the board. I will ask the students if they have ever heard the term before. If none of them have I will ask them about topic sentences and introductory paragraphs. I will have them write or draw what a thesis is to them. We will then take a few minutes to discuss what they think a thesis statement is. I will have asked one student who I know doesn't like to talk and is hesitant if they can share their response before class after I gave them a sheet outlining what a thesis is the day before.

I will then give a brief definition of a thesis statement that "A thesis statement is a short statement, usually a sentence, that summarizes or explains the main point of an essay or paper. That statement is explained and supported throughout the paper. It is usually a claim that has an opposing view."

Transition

Okay so now that we have heard a little about what y'all think a thesis is we're going to change gears a little bit. Later on in class we are all going to be writing a thesis based about what we are about to learn in class. First I want to talk to you about the drought that is happening in Claifornia.

California Drought (15 minutes):

"Okay so how many people know what a drought is? It's when an area receives far less precipitation and water than it usually does. This can be bad for any region, but it is currently happening in California which means a whole lot to each one of you if you eat any of the foods on the table here. You may not think it, but in large part due to its warm climate California is one of the top farming states in the country, and by some measures is the number one farm state. More than Michigan, more than Nebraska, more than Iowa. It's temperate and Mediterranean climate allow it to grow many fruits and other such goods year round. However, farming takes water, and as you can see by these pictures of

lakes and reservoirs in the state, they are running out."

"With that being said, here are some nationally televised advertisements about milk from California:"

"Finally, if you open your packets to page 20, you will see an infographic from the New York Times that describes how we here in Michigan are contributing to the drought via what we eat. Take a peek through it."

http://www.nytimes.com/interactive/2015/05/21/us/your-contribution-to-the-california-drought.html?_r=0

I will then show how many gallons of water goes into the items I brought.

Writing a Thesis

Okay, so now we know how much water is needed to grow some of the things we eat every day. And we also know that a lot of these things are grown in California and that one of the biggest water guzzlers is the farming of dairy. Yet the California Milk industry is advertising that people all over the nation should be buying their milk. Is that going to be sustainable? Why should we buy products made from their milk if we have plenty from cows in our own state and they don't have enough water? Is there anything we can do to help? Well now we're going to practice our thesis writing skills. I have one for all of this. "Michigan is surrounded by fresh water and we eat lots of food from California so Michigan should sell water to California so they can continue to grow crops."

I will then ask the students how this is a thesis based on the definition given earlier.

I will go over a little more about how a thesis differs from a topic sentence and what the rest of the paragraph that surrounds a thesis should be. I will discuss how the thesis should summarize my argument. We will write the rest of the paragraph quickly as a class.

Group work

I will have my students get into their "headlines" groups that they already know. In those groups I want them to brainstorm other ways we could help reduce our contributions to the drought and then write one as a group.

Final Readings/Extend Activity

Finally I will give the students examples of good thesis statements and introductory paragraphs as well as an article about urban farming in Detroit. I tell them that I would like them to write their own thesis statement and introductory paragraph about what we have learned today. They will have time to work on it now and they can also work on it at home. They will finish it tomorrow during "Do Now" time and we will discuss it then as well. The example thesis statements and paragraphs will come from past classes of my own, or if it is my first year teaching, from a nice teacher I have known in the past/at the school I work at who has supplied me with some examples.

Massive Urban Farm is Coming to Detroit

By: Dan Nosowitz, Modern Farmer

Detroit's urban farming possibilities aren't a secret; there is nowhere else in the country with an infrastructure as big as Detroit's that contains so much city-owned or delinquent land. Farmers are stepping in from all over the place; **the planners behind one project hope to eventually create** the world's largest urban farm. But Detroit's mayor just found announced an even newer and bigger project: a $15 million, 60-acre urban farm.

Michigan has more than 50,000 farms, the vast majority of which are single-family-owned. The city of Detroit has a huge excess of land, at the moment: without any

prospective buyers, land often reverts to what NPR calls “a sort of-governmental agency” called the Detroit Land Bank Authority.

The city also holds the rights to abandoned property. Some of those properties are sold at very low prices to hopeful youngsters who want to try their hand at turning a **$500 house into something livable**. But many others sit in limbo, without a purpose or any likely buyers.

One surprising growth industry in the city is urban farming. Recovery Park, a nonprofit, confusingly runs a program called Recovery Park Farms, which is a for-profit. Anyway, Recovery Park and Detroit Mayor Mike Duggan announced last week an ambitious plan to create a 60-acre urban farm (35 acres of which comes from the government, through the Detroit Land Bank Authority) to be settled not with new houses for people but greenhouses and hydroponic systems for specialty produce. Recovery Park already operates a pair of smaller urban farms, growing vegetables like radishes, greens, and edible flowers and selling them to restaurants in the city. This plan is complicated, partly because Detroit doesn’t actually have $15 million to give to Recovery Park to set up an urban farm. **The *Detroit News* reports** that Recovery Park has $1 million of that already and will have to somehow raise the remainder to achieve its goals, which include 120 employees (60 percent of whom will have to be from the Detroit area).

A Look Back at the "Walk in the Park" – Choice Lesson	
Objective	*Students will be able to …* reflect and summarize on their time at the Rouge park while comparing and contrasting their experience with other parks in the surrounding communities via a brief explanation of white flight.
Big Concept	Students will be able to think about what parks are like for other kids their age and what they have available to them. They will be able to view this through the lens of white flight at the city they live in.
Lesson Rationale	I first of all want the students to reflect on their time at the park and not forget it. I want them to think about what they saw and how they felt while they were there and then think about how other kids their age experience parks and what the differences really are
Standards	MI HSCE: P1.2-5
Supplies Needed	Packet of student reflections from the "Walk in the Park" trip; website for Kensington Metro Park
Introduction	
DO NOW!	
Steps	
1) Do Now, writing. (5 minutes) – On the board will be a question: think about our trip as a school to the Rouge Park. I want to reflect in any way you see fit on a piece of paper (paragraph, list, song, poem, drawing) about what you remember seeing and feeling at the park 2) Get in your "Headlines" groups and go over what you wrote down(5) 3) Hand out reflection packets and have them read over it (2 minutes) 4) SNOWBALL (10 minutes) 5) Go over the snowball responses and write the most popular answers down on the board (5 mintues) 6) QUICK SOLDIER LINES (5-7 minutes) 7) Ask students: what do you think parks are like for kids their age in neighboring towns and discuss shortly (5 minutes) 8) Briefly discuss the concept of white flight and the racial makeup of cities around them (5-10 minutes) 9) Go through the Kensington Metro Park website (5 minutes) 10) Have them produce a piece of work that describes their current feelings about the Rouge Park and other parks. Again a drawing, song, poem, essay,	

paragraph, any will work. I want them to focus on their feelings here and not as much what they saw. (5 minutes)
Assessments/Evaluations
Work produced at the end of class
Reflection
The reflection will be the work they produced at the end of class as well
Differentiation
I have attempted to differentiate via many routes. Both pieces of work constructed at the beginning and end of class are differentiated via product. I have also differentiated via learning styles. Students are able to get up and be active and talk to one another as well as reflect within themselves. They will also learn via listening to me, others, themselves and through watching videos

Framing the Lesson

This lesson will come near the end of my unit a few weeks after the "Walk in the Park" activity. The goal of this lesson is to have them reflect on that activity and to make sure it stays fresh in their mind. It connects to my unit because having read their reflections I know that many of them were concerned with the quality of the water in the park as well as the gunshots in the park. I want them to connect that with how to make the park and community more just by also viewing what some other parks in their nearby areas may be like. I will also connect to my unit by viewing it through a lens of "white flight" which helped lead to how Detroit has been "founded" as it looks today.

Do Now! (5-10minutes)

The goal of this lesson's Do Now! Is to have my students begin thinking about their time at Rouge Park and what it was like to be there. I want them to have the freedom to think about what they saw and their feeligns and to be able to put it in whatever product they see fit. I mostly want to get their enginges running on what the park was like

SNOWBALL

I will have my students get into their "headlines" groups so they can do a short "snowball" activity. First I will ahdn out the reflection packets we as a class got about the DIT students reflections to the park including asnwers to the questions: "What are 2 things you found interesting about this trip? Tell us something you SAW at the park? And What skills would an environmental citizen need to find out more about the Rouge Park?" I would have them go over the packet for a couple minutes. I would them ask them to take two minutes and by themselves pick out what stands out the most to them as

interesting from the first page. They would then do this in pairs within their headlines group adding in connections to why they may have had similar or different answers. Finally as a group of four they would discuss their answers and look through the rest of the packet to see if there are any further connections.

Back to Whole Class:

I would then as each group to come up to the board and write down any of the points from the first page that multiple people highlighted.

SOLDIER LINES

Then I will divide the class in tow and have them stand across from one another and we would do a brief "soldier lines" activity. I would have each student pick one of the answers from the board and they would each spend 30 seconds discussing why they chose that answer. One line would move down until we had done the activity five times.

Whole Class Question

"Okay y'all, so what do you think parks are like for kids your age who may live in some of the cities and towns just around the city of Detroit?"

White Flight and neighboring towns

I will then discuss with the students briefly about the concept of "white light" and the city of Detroit. I will explain that, "This is a tough conversation topic possibly, in part because, well obviously I am white. This is just a brief talk however. We will be discussing this much more in depth when we talk about the Civil Rights Movement in an upcoming Unit. Basically in the early to mid 20th century a large proportion of the white population of the city of Detroit left the city. The moved to suburbs just outside the city

like Dearborn and Livonia; Royal Oak and Birmingham; they moved further and further to places like Brighton and Milford. There are a number of factors that led to this including the famous race riots of 1967 and the consturction of the massive highways that split the city up. As a result of this the racial makeup of Detroit and the outlying suburbs is very different. Lets take a look at what that makeup is like in some of those cities."
I will then show them the stats on racial makeup of Detroit, Grosse Pointe, Royal Oak, Bloomfield Hills and Milford from the American Fact Finder portion of the census website. (http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml)

Kensington Park

I will then go to the website for the Kensington Metro Park I Milford Michigan as well as view some images on Google. I will show them the video of the sleigh ride through the park. They will see how there are multiple beaches on lakes. That there is a golf course and multiple disc golf courses.

http://www.metroparks.com/Kensington-Metropark

Extend

I will have them think about the differences that they saw between the park that I just showed them and their experience at the Rouge Park. Do they think kids at Kensington hear gunshots the entire time they are there? Finally I will ask them how do they feel about this? They will then create a product with as varied a final outcome as before. We will discuss what people have done at the start of the next class.

Fracking in the State of Michigan – Inquiry Lesson	
Objective	*Students will be able to …* hypothesize on whether we should allow the process of hydraulic fracturing in the state of Michigan
Big Concept	Students will be given a wide array of knowledge about fracking and natural gas and the hope is for them to come to a decision on whether it is beneficial or not to the state of Michigan
Lesson Rationale	In this lesson I hope that students will be able to understand both the pros and cons of fracking and its economic and environmental potential. I hope they will be able to come to a solid conclusion on whether or not it should be done in our state
Standards	MI HSCE: P2, P3; 9.1.1, 9.3.1
Supplies Needed	Articles on fracking and natural gas; Youtube video
Introduction	
DO NOW!	
Steps	
1) Do Now, writing. (5 minutes) –Watch 2 minute Gasland clip and write/discuss whether anything that can cause that to happen to water can be a good thing. 2) Give a brief description of what fracking is and why it is done. (2 minutes) 3) Gather students into groups of four by readiness (similar readiness at first). (1 minute) 4) Each student will have a separate article to read about the topic. (10 minutes) 5) Each group will then discuss their article and what they believe the main points are. Should discuss its source and bias. Have a brief discussion about whether fracking is good or bad based on their article. (10 minutes) 6) Switch the groups so they are now based on mixed readiness and so every group has four members who read a different article (1-2 minutes) 7) Groups will then discuss the same points and questions asked earlier. They will go in order 1-5 at first then discuss as a whole group (10 minutes) 8) Each individual student will write at least a thesis about whether or not we should frack in Michigan and the goal is an intro paragraph. (5-10 minutes) 9) We will start a group discussion about what we have learned but not a debate as that is tomorrow. (5-10 minutes)	

10) Finish paragraph by tomorrow (will be tomorrow's Do Now!)
Assessments/Evaluations
Paragraphs finished at the start of the next lesson and the overall discussion at the end of this class and tomorrow's debate
Reflection
The reflection for this lesson will come at the start of the next lesson. Students will finish their paragraphs then (if they are done there will be another activity for them to do regarding theses) and we will discuss as a class
Differentiation
I have attempted to differentiate via their routes to the knowledge needed to write a good thesis statement. It is not really possible to differentiate the product in this scenario, as the outcome is a good thesis statement. However with the ads, the pictures, the NY Times infographic and me demonstrating, I have given a number of different ways students could understand what the thesis should be.

Framing the Lesson

This lesson will come at the very end of this unit. Students will have already learned about the importance of water in American/Michigan/Detroit/human society and the impact of pollution to watershed on groups of people. One of the main goals of this lesson is to get students thinking about a popular current policy debate and where they stand on it. I hope they will be able to formulate a hypothesis about the topic by the end of this lesson and the next.

Do Now! (5-10 minutes)

The goal of this lesson's Do Now! Is to provide the discrepant event for the day's inquiry-based lesson. There will be a clip from the documentary *Gasland* shown where fire is started by holding a lighter next to running tap water (https://www.youtube.com/watch?v=4ApZkNsXfJE). This will be done in order to get their minds firing because this is obviously not a normal occurrence. I will then ask my students if there is any possible positive outcome from something that also causes this reaction. "Imagine if you were able to do this to the water at you house, or here at school? Would you drink or wash yourself in it? Is there any possible benefit of an activity that could outweigh this consequence?

Transition

"According to the film, they were able to start the fire due to a process called 'hydraulic fracturing' or 'fracking.' Has anyone heard of fracking? Do you know what it is? Fracking is a process of drilling for natural gas waaaaaay down below the earth's surface using intense water pressure and chemicals in order to "fracture" or break open a level or

rock and reach the gas inside of it. We are going to be going over in groups why companies are doing this and whether or not there are any economic and/or environmental benefits or concerns that go along with the process

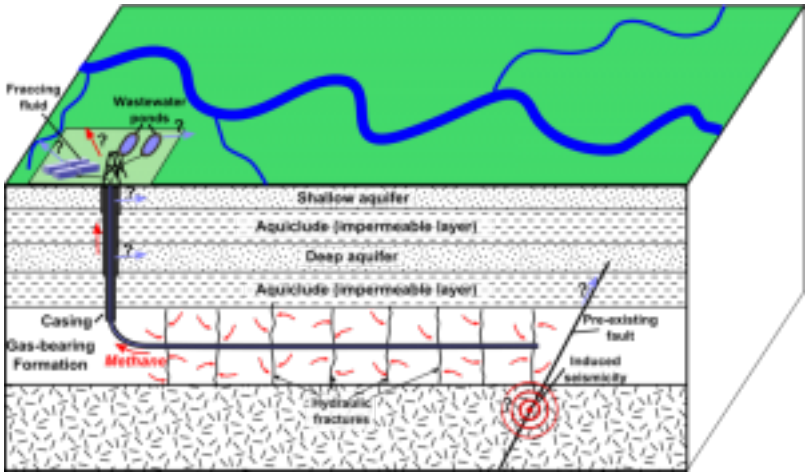
Get into 5 groups:

The students will then be organized by similar readiness in order to read articles of varying difficulty. Each article will also have a different bias or view on fracking. Some ill be neutral, some will be pro-fracking and some will be anti fracking. Found below are the groups and their assigned readings.

Group One: (lowest on readiness scale): Will read through and take notes about fracturing using the infographic on the website: http://www.dangersoffracking.com

Group Two: Will read two short articles/blog posts about the positive aspects of fracking from a company that produces oil field trucks and the Brookings Institute

The Pros Of Hydrofracking
October 22, 2013
By Mark Overholt
From a blog on the company website of Tiger General who make "Premium Oil Field Trucks"



For those who don't know, hydraulic fracturing or "hydrofracking" is the process of injecting millions of gallons of water at an extremely high pressure into dried up oil and gas wells. Some of these wells can be as deep as 10,000 feet. These highly pressurized mixtures of water and chemicals breaks up the rock formations that contain high quantities of natural gas. States that are commonly known for their hydrofracking practices are New York, Pennsylvania, West Virginia and Ohio. Hydrofracking has been around for many years but not until recently has the government begun to try to stick it's nose in the industry's business via intense regulation.In today's post, we wanted to highlight some of the pros hydrofracking brings to the people in the industry and the communities they represent.

The Advantages Of Hydrofracking

- It is the most efficient way of extracting oil and natural gas from shale rock underneath

the surface

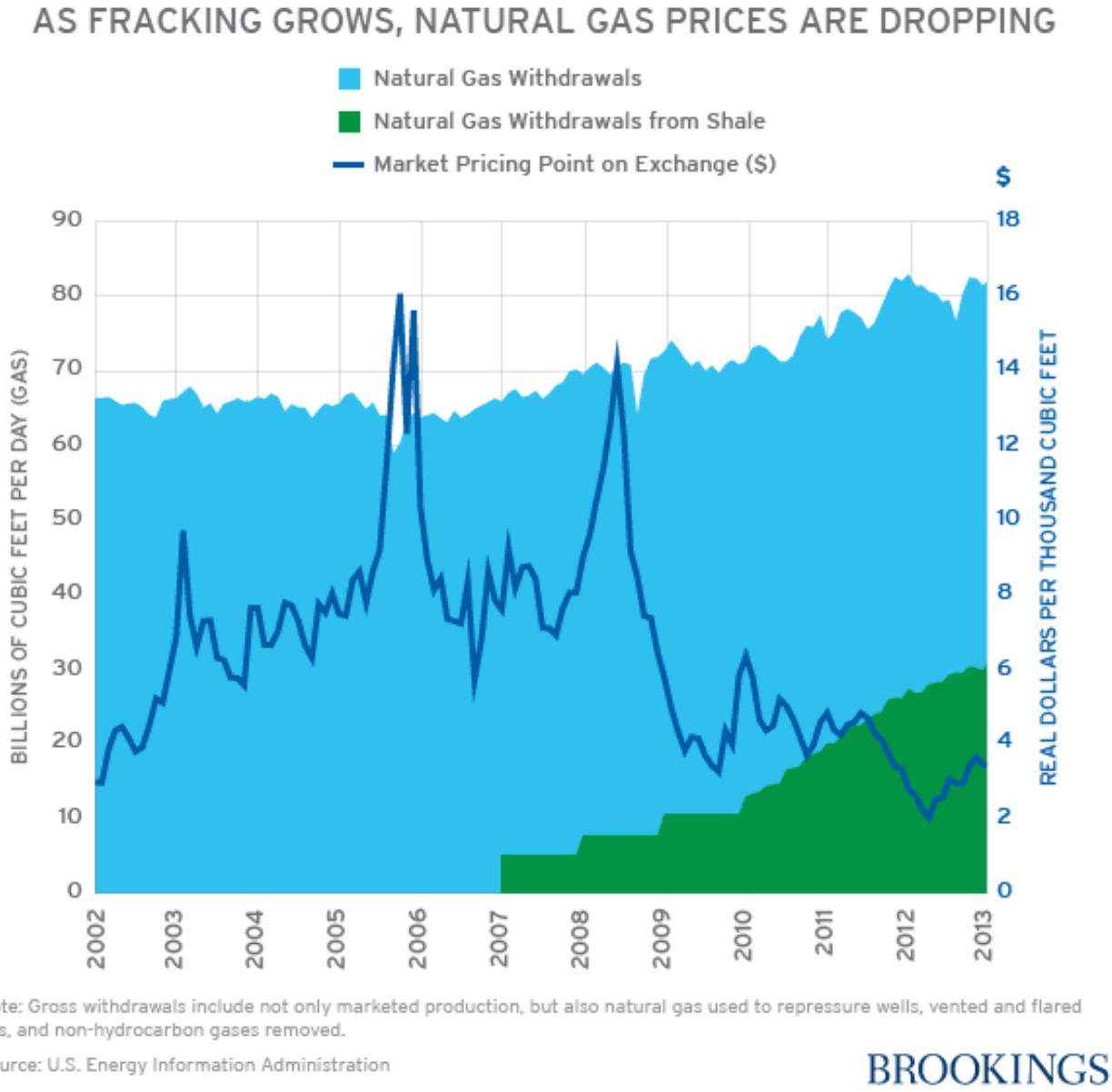
- These oil and gases are abundant in the United States. It is cheaper for us to find, distribute and consume because we don't have to purchase from foreign suppliers.
- It allows us to access billions of reserves to exploit natural resources that we once believed to be unattainable. It truly has turned our industry around.
- Natural gas production is one of the cleanest burning fuels we have available. This is preferred to using much dirtier fossil fuels.
- Fracking is also often used to revitalize drinking wells. This fact is commonly left out of the argument against fracking.
- The industry creates many jobs. In Pennsylvania, hydrofracking added 72,000 jobs between 2009 and 2011 alone http://online.wsj.com/article/SB10001424052702303936704576398462932810874.html
- The majority of the fluid injected is comprised of 95% water and sand. All other chemicals are disclosed to regulatory officials.

Overall, hydrofracking is a safe process when done in a controlled environment with proper supervision and precautions. It's important to know all of the facts before claiming that these processes are harmful to the environment and "draining the world's water supply." Hydrofracking is instrumental to obtaining the natural resources that we need to survive everyday!

The Economic Benefits of Fracking

By: Fred Dews, Brookings Institute

As fracking grows, natural gas prices are dropping

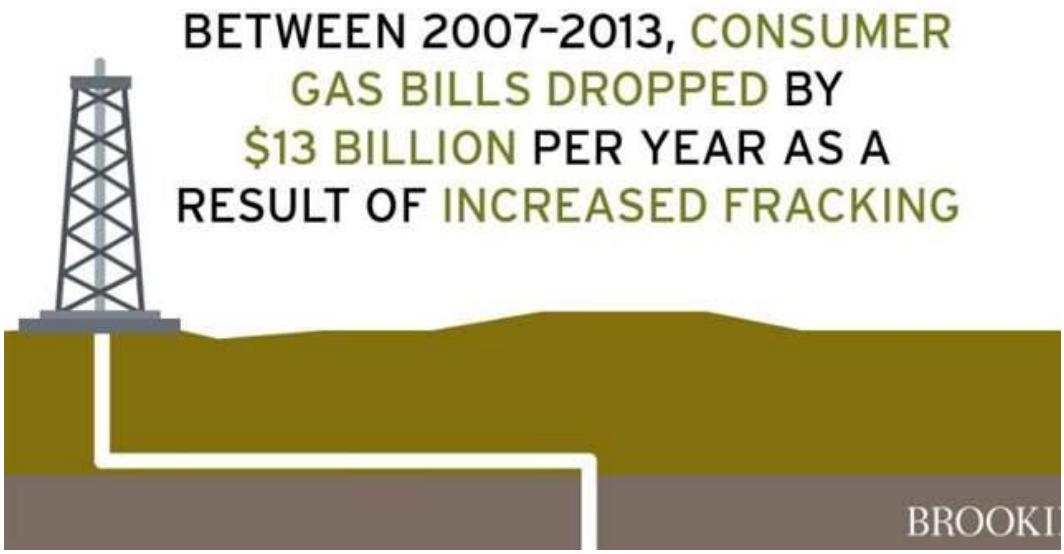


The U.S. fracking revolution has caused natural gas prices to drop 47 percent compared to what the price would have been prior to the fracking revolution in 2013.

Energy consumers are seeing economic gains

Gas bills have dropped $13 billion per year from 2007 to 2013 as a result of increased

fracking, which adds up to $200 per year for gas-consuming households. Moreover, all types of energy consumers, including commercial, industrial, and electric power consumers, saw economic gains totaling $74 billion per year from increased fracking.



All regions are experiencing economic benefits

Though one would expect colder states that use natural gas for space heating to benefit most from shale gas, the authors point out that the West South Central region (Arkansas, Louisiana, Oklahoma, and Texas) gained the most at $432 per person in consumer benefits, followed by East North Central (Illinois, Indiana, Michigan, Ohio, and Wisconsin) with $259 per person in benefits. The area to gain the least is the Pacific (California, Oregon, and Washington), but consumers there still benefited to the tune of $181 per year.

Despite economic gains, environmental concerns remain

In addition to exploring the economic consequences of the fracking boom, the authors also review fracking's environmental impacts and discuss the difficulty facing regulators. They note that while scientists remain concerned about a number of environmental damages caused by fracking, the data collection has not kept pace with the boom in extraction, and a great deal of uncertainty remains regarding pollution from fracking.

Group Three: Will read a pro's and con's of fracking article from Yale Climate Connections:

Pros and Cons of Fracking: 5 Key Issues

By: John Wihby, Yale Climate Connections

There's an issue where the underlying science remains a political football, and scientists are regularly challenged and called out personally. Where energy needs and short-term economic growth are set against our children's health and future. Where the consequences of bad, short-sighted decisions may be borne primarily by a small subset of under-served and undeserving persons. And where the very descriptive terms in the debate are radioactive, words spun as epithets.

We're not talking here about global warming, and "deniers" versus "warmists." We're talking about the game-changing new set of unconventional oil and gas extraction technologies and techniques collectively known as hydraulic fracturing, or "fracking." Below are the arguments and synthesized evidence on some key issues, based on the available research literature and conversations with diverse experts.

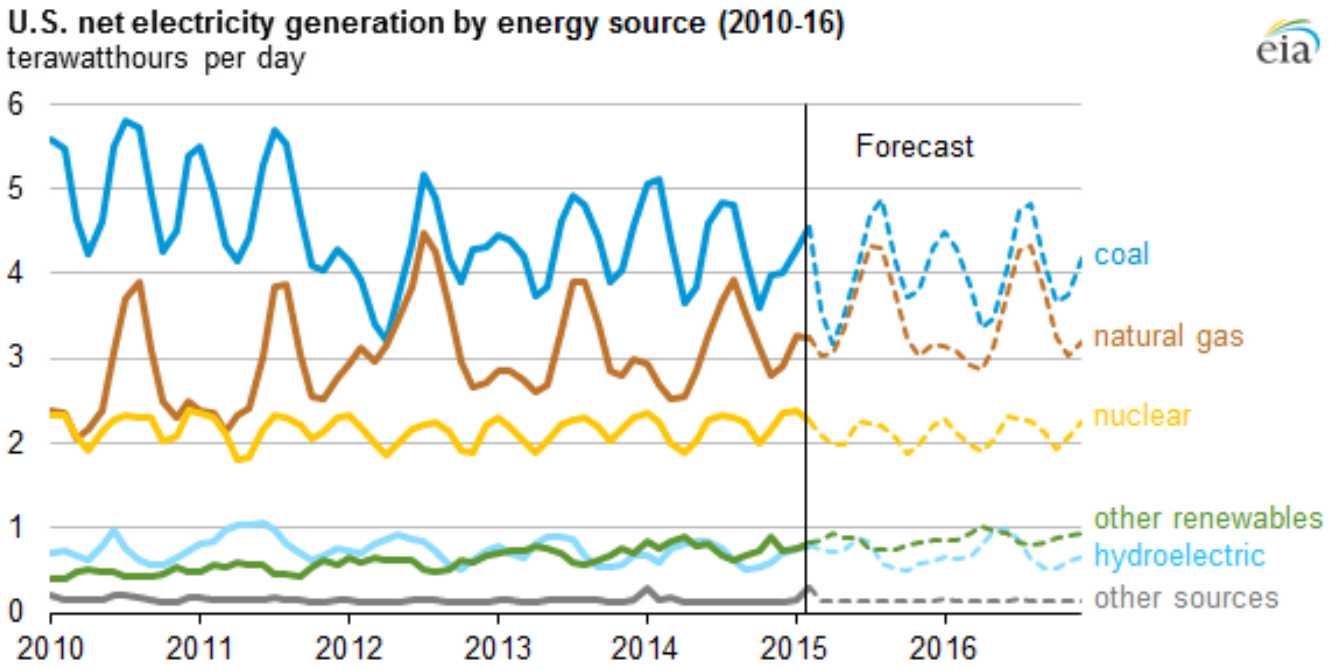
Air quality, health, and the energy menu

ISSUE: The new supply of natural gas reachable by fracking is now changing the overall picture for U.S. electricity generation, with consequences for air quality.

PRO FRACKING: Increasing reliance on natural gas, rather than coal, is indisputably creating widespread public health benefits, as the burning of natural gas produces fewer harmful particles in the air. The major new supply of natural gas produced through fracking is displacing the burning of coal, which each year contributes to the early death of thousands of people. Coal made up about 50 percent of U.S. electricity generation in

2008, 37 percent by 2012; meanwhile, natural gas went from about 20 percent to about 30 percent during that same period. In particular, nitrogen oxide and sulfur dioxide emissions have been reduced dramatically. Fracking saves lives, and it saves them right now and not at some indiscernible date well into the future.

CON FRACKING: First, it is not the case that a new natural gas facility coming online always replaces a legacy coal-fired power plant. It may displace coal in West Virginia or North Carolina, but less so in Texas and across the West. So fracking is no sure bet for improving regional air quality. Second, air quality dynamics around fracking operations are not fully understood, and cumulative health impacts of fracking for nearby residents and workers remain largely unknown. Some of the available research evidence from places such as Utah and Colorado suggests there may be under-appreciated problems with air quality, particularly relating to ozone. Further, natural gas is not a purely clean and renewable source of energy, and so its benefits are only relative. It is not the answer to truly cleaning up our air, and in fact could give pause to a much-needed and well thought-out transition to wind, solar, geothermal, and other sources that produce fewer or no harmful airborne fine particulates.



Greenhouse gas leaks, methane and fugitive emissions

ISSUE: The extraction process results in some greenhouse gas emissions leakage.

PRO FRACKING: We know that, at the power plant level, natural gas produces only somewhere between 44 and 50 percent of the greenhouse gas emissions compared with burning of coal. This is known for certain; it's basic chemistry. That is a gigantic benefit. Further, some research that claims methane is so harmful uses a 20-year time horizon; but over a 100-year time horizon – the way we generally measure global warming potential – methane is not nearly so harmful as claimed. Thus, methane's impact is potent but relatively brief compared with impacts of increased carbon dioxide emissions. The number-one priority must be to reduce the reliance on coal, the biggest threat to the atmosphere right now. Fears about emissions leaks are overblown. Even if the true leakage rate were slightly more than EPA and some states estimate, it is not that dramatic. We are developing technology to reduce these leaks and further narrow the gap.

Moreover, research-based modeling suggests that even if energy consumption increases overall, the United States still will reap greenhouse benefits as a result of fracking.

CON FRACKING: Research from Cornell has suggested that leaked methane – a powerful greenhouse gas – from wells essentially wipes out any greenhouse gas benefits of natural gas derived from fracking. And at other points in the life cycle, namely transmission and distribution, there are further ample leaks. Falling natural gas prices will only encourage more energy use, negating any "cleaner" benefits of gas. Finally, there is no question that the embrace of cheap natural gas will undercut incentives to invest in solar, wind, and other renewables. We are at a crucial juncture over the next few decades in terms of reducing the risk of "tipping points" and catastrophic melting of the glaciers. Natural gas is often seen as a "bridge," but it is likely a bridge too far, beyond the point where scientists believe we can go in terms of greenhouse gas levels in the atmosphere.

Drinking water wars

ISSUE: Fracking may threaten human health by contaminating drinking water supplies.

PRO FRACKING: It is highly unlikely that well-run drilling operations, which involve extracting oil and gas from thousands of feet down in the ground, are creating cracks that allow chemicals to reach relatively shallow aquifers and surface water supplies. Drinking water and oil and gas deposits are at very different levels in the ground. To the extent that there are problems, we must make sure companies pay more attention to the surface operations and the top 500 to 1,000 feet of piping. But that's not the fracking – that's just a matter of making sure that the steel tubing, the casing, is not leaking and that the

cement around it doesn't have cracks. Certain geologies, such as those in Pennsylvania's Marcellus Shale region, do require more care; but research has found that between 2008 and 2011, only a handful of major incidents happened across more than 3,500 wells in the Marcellus. We are learning and getting better. So this is a technical, well-integrity issue, not a deal-breaker. As for the flammable water, it is a fact that flammable water was a reality 100 years ago in some of these areas. It can be made slightly worse in a minority of cases, but it's unlikely and it is often the result of leaks from activities other than fracking. In terms of disclosure, many of the chemicals are listed on data sheets available to first-responders: The information is disclosed to relevant authorities.

CON FRACKING: This April, yet another major study, published in the *Proceedings of the National Academy of Sciences*, confirmed that high-volume hydraulic fracturing techniques can contaminate drinking water. There have been numerous reports by citizens across the country of fouled tap water; it is a fact that some of the tap water has even turned bubbly and flammable, as a result of increased methane. Well blowouts have happened, and they are a complete hazard to the environment. The companies involved cannot be trusted, and roughly one in five chemicals involved in the fracking process are still classified as trade secrets. Even well-meaning disclosure efforts such as FracFocus.org do not provide sufficient information. And we know that there are many who cut corners out in the field, no matter the federal or state regulations we try to impose. They already receive dozens of violation notices at sites, with little effect. We've created a Gold Rush/Wild West situation by green-lighting all of this drilling, and in the face of these economic incentives, enforcement has little impact.

Group Four: will read and take notes/discuss this article against fracking from the NRDC:

Unchecked Fracking Threatens Health, Water Supplies

The rapid expansion of oil and gas development across nation endangers human health and the environment

From the Natural Resources Defense Council (NRDC)

The oil and gas industry is rapidly expanding production across the nation, as new technology makes it easier to extract oil or gas from previously inaccessible sites. Over the last decade, the industry has drilled hundreds of thousands of new wells all across the country. These wells are accompanied by massive new infrastructure to move, process, and deliver oil and gas, together bringing full-scale industrialization to often previously rural landscapes.

The sector's growth is spurred by the use of hydraulic fracturing, or fracking, in which often-dangerous chemicals are mixed with large quantities of water (or other base fluid) and sand and injected into wells at extremely high pressure. Unconventional development using advanced fracking methods poses threats to water, air, land, and the health of communities. Studies have shown dangerous levels of toxic air pollution near fracking sites; and oil and gas extraction have caused smog in rural areas at levels worse than downtown Los Angeles. Oil and gas production have been linked to increased risk of cancer and birth defects in neighboring areas; as well as to a risk of increased seismic activity. Constant massive truck traffic associated with large-scale development disrupts communities and creates significant hazards. The millions of gallons of water used in fracking operations not only strain water resources, but end up as vast amounts of contaminated wastewater. Fracking has been reported as a suspect in polluted drinking

water around the country. And methane -- a potent climate change pollutant -- leaks rampantly throughout the extraction, processing, and distribution of oil and gas.

Weak safeguards and inadequate oversight have allowed oil and gas producers to run roughshod over communities across the country with their extraction and production activities for too long, resulting in contaminated water supplies, dangerous air pollution, destroyed streams, and devastated landscapes. Our state and federal leaders have failed to hold them to account, leaving the American people unprotected. Many companies don't play by the few rules that do exist; and industry has used its political power at every turn to gain exemptions from environmental laws designed to protect our air and water.

Time to Shift from Fossil Fuels to Clean Energy

Americans shouldn't have to trade their safe drinking water, clean air, climate, health or communities for energy. NRDC is working to build a clean energy future –- one centered on clean, safe, renewable sources of power, used efficiently, that ends our dependence on fossil fuels as quickly as possible. Energy efficiency and renewable energy must be our country's top energy priorities because they are the quickest, cleanest, and cheapest solutions to global warming and other pollution problems.

Although burning natural gas can reduce harmful pollution when it displaces coal in power plants, the extraction of both coal and natural gas is currently resulting in public health threats and climate change pollution. The full extent of those threats from natural gas extraction remains largely unknown and ongoing study indicates substantial concerns and major uncertainties. To the extent near-term use of any fossil fuels continues, we must curb emissions of harmful pollutants and implement strong safeguards for production and use of all fossil fuel energy sources to minimize risks to our health and

environment.

NRDC Protects Communities from Reckless Fracking

First and foremost, that means communities should have the right to protect themselves when their state and federal governments fail them. That's why NRDC's Community Fracking Defense Project is helping communities determine whether and/or how fracking should proceed within their borders.

Additionally, NRDC supports bans on fracking to give states and communities time to fully evaluate the risks and determine whether it's possible -- and if so, how -- to protect against them. We have also called for a moratorium on public lands, which are not only home to America's last wild places, but public and private drinking water supplies for millions of people. While scientific research increasingly indicates fracking poses serious public health and environmental threats, a significant amount of additional independent science is critical in order to understand how to protect against these risks.

Where bans on fracking are not in place, we are also fighting for state and federal safeguards to provide a last line of defense to protect health, communities and the environment as much as possible. In these places, NRDC is working hard to establish the strongest possible system of safeguards for oil and gas operations, including fracking, to protect our health and environment, on the basis of the best available technologies and science. Communities in harm's way need protections right away. And citizens deserve access to the information and tools they need to understand the risks of fracking that is happening in their communities and have a voice in how it proceeds.

Priority actions include:

- Putting sensitive lands and watersheds completely off limits to oil and gas production;

- Curbing air pollution across the entire system, from drilling and production to distribution, by setting strong clean air standards that minimize methane leakage and prevent dangerous smog-forming and cancer-causing toxic air pollution;
- Mandating the strongest well siting, design, construction, and operation standards and other drilling best practices;
- Protecting the landscape, air, and water from pollution by closing clean air, clean water and safe drinking water laws loopholes, reducing toxic waste and holding toxic oil and gas waste to the same standards as other types of hazardous waste, funding robust inspection and enforcement programs, and requiring that oil and gas companies post adequate bonds or other financial securities;
- Mandating full public disclosure of information regarding chemicals used in fracking;
- Prioritizing renewables and efficiency to replace fossil fuels;
- Ensuring full transparency and public participation in permitting and regulatory processes associated with oil and gas development, and allowing citizens to bring enforcement actions against lawbreakers; and

Allowing communities to determine their own future by restricting fracking through comprehensive zoning and planning.

Group Five (Highest level of readiness. If there are not enough students, or I believe they are not ready, this group will be eliminated): will read this pro0fracking piee from the American Enterprise institute:

Benefits of Hydraulic Fracturing

By: Kevin A. Hassett and Aparna Mathur

For the American Enterprise Institute

If an average American heard the word 'fracking' 10 years ago, chances are he or she would have worried about the manners of the speaker. Today, however, opinions about fracking are solidifying, and battle lines are being drawn, even if understanding remains sketchy. For many on the American left, fracking connotes something dangerous, unhealthy — even, as in a recent Hollywood production, potentially nefarious. For those on the right, fracking is often regarded as the best hope for a struggling economy. While the outcome of the policy struggle is impossible to predict, the economic stakes could hardly be higher.

Hydraulic fracturing, or fracking as it is more commonly called, is a process that's been used to extract oil and natural gas since it was first introduced by Standard Oil in the 1940s. Over the past decade, as other technologies have combined with the use of fracking to make the tapping of shale profitable, it has contributed to a resurgence of oil production in the USA and a dramatic increase in natural gas production. Proponents of fracking have hailed it as a major development in the energy industry, one that has allowed for tapping of reserves of gas and oil that were previously prohibitively difficult to reach. In some parts of the country, most notably in North Dakota, this has led to massive expansions of energy production, and gold rush level increases in economic

activity.

As enthusiastic as are its supporters, fracking faces equally determined opponents who view its environmental consequences as excessively negative, and there is significant variation across the United States in policy. The most notable focal point of opposition to fracking is New York state, which placed a moratorium on it in 2008, but other states have been as aggressive. Vermont has formally banned the practice, and New Jersey has enacted a moratorium as well. Many other states seem likely to follow.

To date, much attention in the debate has focused on the potential negative local impacts. there is ongoing investigation into the costs of fracking to the environment, infrastructure, and health of workers and citizens near drill sites. Less attention has been paid to discussion of the likely scale of the benefits, and a rational assessment of proper policy, of course, requires inspection of both costs and benefits.

Our focus, therefore, is on the benefit side of the equation, which hopefully can be used to better weigh costs when they are debated in the future.

Fracking in the United States

The process of hydraulic fracturing involves the injection of a mixture of water, a proppant such as sand, and chemicals into an oil or gas well. The fluid creates fractures in a pre-drilled well, allowing greater permeability of the stone surrounding it. The proppant fills the small cracks created by the water to keep them open after the water flows back out. The chemicals, such as gelling agents, are used for a variety of purposes, most importantly to gel the water on its entry so that the proppant remains suspended in the mixture and does not sink to the bottom of the solution. Other chemicals (which can even be unidentified and a trade secret) enhance the solution's fracturing abilities. It is these

chemicals that form the basis of concern for fracking opponents, who worry about possible contamination of water sources from the fracking fluid, not all of which eventually makes its way to the top of wells to be captured by drillers.

Although the first version of hydraulic fracturing was patented in the USA in 1949, it has come into greater use over the last decade in combination with other advances in drilling technology (such as horizontal drilling), which have made many reserves of oil and natural gas economically viable that were previously considered prohibitively difficult to exploit. These reserves are in many cases contained within shale, a formation low in permeability and porousness, which previously made tapping the gas and oil held within the formations very difficult. Fracking, along with horizontal drilling, has made many of these previously known formations commercially viable, and has facilitated the discovery of new reserves as companies seek gas and oil in new locations.

A few numbers illustrate how fracking has contributed to a turnaround in US energy production over the past decade. In 1990, the USA produced in total 70.706 quadrillion Btu of energy, a number which remained fairly steady through 2006, when total production was 69.443 quadrillion Btu. After that year, however, as fracking, in combination with horizontal drilling and other new technologies in energy production became more widely spread, total production of the energy sector eventually reached 74.812 quadrillion Btu in 2010, accelerating even faster to 78.091 in 2011. A large part of that was an increase in domestic production of natural gas and crude oil. Natural gas, after previous steady production of around 19 quadrillion Btu per year, experienced an increase beginning in 2007, with production reaching 23.608 quadrillion Btu in 2011 and the industry on track to exceed that in 2012. This made the USA the second largest

natural gas producer in 2011 – just behind Russia, according to the World Factbook. The third highest producer, the European Union, produced only about a quarter of the natural gas produced in the United States.

Oil, on the other hand, gradually declined in production from 1980 onward, and only recently has experienced annual increases, largely attributable to fracking and new drilling techniques. In 1980, the USA produced 18.249 quadrillion Btu of oil, which decreased to 12.358 in 2000 and 10.615 in 2008. Since then, however, it has risen to 11.598 quadrillion Btu in 2010 and 11.955 in 2011, and, like natural gas, the industry was on pace to exceed that figure in 2012.

This significant increase in production of oil and gas energy has direct economic effects that are relatively easy to quantify and potentially broad reaching indirect effects as well. However, direct and indirect effects are often misrepresented in public discussions. Below, we describe what is known of fracking's potential impact and a guide to an economically rational discussion of the total benefits.

Direct Economic Impact

The direct benefit of increasing oil and gas production includes the value of increased production attributable to the technology. In 2011, the USA produced 8,500,983 million cubic feet of natural gas from shale gas wells. Taking an average price of $4.24 per thousand cubic feet, that's a value of about $36 billion, due to shale gas alone.

This increase in value produced can also increase the number of people employed directly in production and delivery activities. These numbers will often be pointed to in political debates. In an economy with full employment, such an increase would not be

considered a ‘benefit’ per se, but a state such as New York with a high unemployment rate of 8.2 might wish to weigh the potential employment effects when evaluating the merits of a moratorium. At its peak in 1980, the oil and gas extraction sector supported 267,000 employees, according to data from the Federal Reserve Bank of St. Louis. As more easily tapped oil reserves grew scarcer and domestic oil production gradually declined over the following two decades, so did employment, with the number of employees in oil and gas extraction shrinking by over 50 percent to 118,400 in 2003. Since 2003, however, there has been a steady upward climb in employment, slowing only slightly during 2009 and reaching 198,400 by December 2012 – over a 67 percent increase. As other industries have sputtered in the a”ermath of the 2008 recession, oil and gas has been a remarkably bright spot in the US economy, with employment at the end of 2012 at its highest since 1987.

There is also a direct effect of this production on the trade balance. The increase in oil and natural gas extraction has directly impacted the energy trade balance between the USA and other countries. Natural gas imports decreased by 25 percent between 2007 and 2011, while petroleum imports dropped from a high of 29.248 quadrillion Btu in 2005 to 24.740 in 2011. By 2020, the Energy Information Administration predicts that the USA will become a net exporter of natural gas, and as more natural gas reserves are discovered and tapped, that date may yet be pushed earlier. Trade balance, of course, is not a measure of welfare, and, while interesting, should not be considered a direct benefit, but often will be.

Indirect Economic Impact

Along with its direct effects within the extraction industry, fracking has had a

traceable effect on other industries as well. The first notable area is electricity generation. As natural gas production has increased over the past five years, so has its consumption within the USA – moving from a historical centre at about 23 quadrillion Btu per year to 24.256 in 2010 and 24.757 in 2011, according to data from the EIA. Much of this increase is attributable to electricity generation, where plants have switched some input from coal to natural gas as natural gas prices have dropped in the wake of its increased supply. While natural gas use in electricity generation gradually increased from 5.3 quadrillion Btu in 2000 to 6.38 in 2006 and 7.7 in 2011, coal experienced a small increase from 19.6 in 2000 to 20.5 in 2006 before dropping off quickly to 18.04 in 2011.

According to the Environmental Protection Agency, natural gas-fired electricity generates half the carbon dioxide of coal-fired production. An estimate of the indirect benefit of fracking should include an estimate of the potential social gains from this reduction. Historically, CO2 emissions grew alongside GDP, reaching a peak of just over 6 billion metric tons in 2007, according to data from the EIA. Since then, however, emissions have fallen off, and were expected to total less than 5.3 billion tons in 2012, a full 10 percent decrease over five years. Although some of this drop was related to a faltering economy in 2008, emissions have remained lowered even while GDP has recovered its previous size and then some. The EIA even projects that CO2 emissions will remain below their 2005 level (just under 6 billion metric tons) through 2040 – in some part because of increased reliance on renewables but in large part because of substitution of natural gas for coal.

Group Discussion

I will stop my students after ten minute even if everyone has not finished reading. Most

students should have got the gist of the article by then. I will then have them each discuss in their groups what their main points of the article was including what it's bias was. They should talk about what fracking is, what are its benefits or downsides and write down these each individually as they will be discussing with their next group

New Group discussion

Now they will get into groups of mixed readiness and each group will be represented. They will discuss their main points in order from group 1 through group 5. They will then talk about what they think the main aspects of what fracking is and why it is a hot debate

Thesis Writing

My students will then individually write at least a thesis statement about the fracking debate: do you think we should frack in the state of Michigan? Why or why not? If they have time they should start writing their intro paragraph that will be worked on

Short Full Group Discussion

We will then discuss as a class what we have al learned thus far in the lesson. I will ask for some main points and what my students think but wil not cold call. I tell them there will be plenty of time for further discussion as we will be having a debate based on this lesson in tomorrow's class once everyone has finished their paragraphs.

Real Life Challenge

Dear students and families of Mr. Doby's 9th grade US History class,

I am writing to you all today to pose a challenge to our students. This is a challenge that I believe will greatly benefit them later in life as well as give them tools needed for excellence now and in the future. As you may already know we are in the process of our unit called "American Water." In this unit we have been discussing the extremely important role that fresh water plays in all of our lives. This extends as far back to the days of the Native Americans and French inhabitation of our great state. Main topics of discussion have been: the importance of fresh water in founding and keeping a settlement, how we as humans view and use our land and watersheds, what a watershed is, and some discussion on some of the bigger issues facing our American water today including the drought in California and the process of hydraulic fracturing wells for natural gas in the state of Michigan.

Now these may seem like very heady topics for your ninth graders but I can tell you they have been tackling the challenges presented to them thus far with spectacular intelligence, grit and enthusiasm. Now, I am looking for them to take the next step and take their knowledge and enthusiasm into the public sphere and make it contagious. I am asking them to do this through a few different channels. First of all is through a meeting with the Detroit Historical Society. Following this letter there is a rubric for the choices in presentation but it boils down to this: if your student chooses this option they will be giving a presentation to the Detroit Historical society about what it was like to be a person who migrated to the city of Detroit in one of two time frames: the founding of the State of Michigan in the 1830's or as a black southerner coming to Michigan during the

Great Migration in the early 20th century. We have discussed these people and time frames in class on multiple occasions and the students have already done some work in this regard. The students will have the choice of: writing a seven-paragraph speech with a thesis statement, creating a PowerPoint or similar presentation, making a short video, creating a mural, or a 3D art project. For the last four options, a short, three-paragraph paper with a thesis statement about life for the migrants will also be required. The Historical Society is aware that our students may be coming to them and I have scheduled a few dates in the future for the students to go so it is not all on the same date. We would love it if not just the families of those presenting came on those dates but if all parents came to show how much support these students have and how awesome they truly are.

The second option is a little more free form as the meetings that will be taking place are varied and amongst different groups. I have made contact with the Michigan Department of Natural Resources, as well as many other non-profit groups including The Sierra Club, Greening Detroit, and our own partnership through the DIT with the SEMIS coalition. Through these partnerships there are several meetings where students can give presentations on hydraulic fracturing or "fracking." We have talked about fracking in class and have a debate in class on whether or not this process of retrieving natural gas from deep below the earth's surface should take place in Michigan. Students will be tasked to take a side on this important current-event issue and present their argument with sufficient evidence. They can do this through a standard five or seven paragraph essay with a thesis statement and evidence from the other side of their argument that they will present to one of the organizations listed above. They may also create a video with one other student that provides the same information as a paper would that will also be played

for one of the organizations. A three-paragraph paper with a thesis statement is required for the video as well. Again, we enoucrage all families to come to the meetings where these presentations will be given. Finally, I have worked out a date with our principal where we can host an event in the auditorium at the school, after hours where the students have the opportunity to present their art, speeches and videos. The event will take place on December 10, at 7:30 p.m.. Even if you go see your student's presentation individually we would love it if you came to this event as well as our partners will also be in attendance as well as the students other teachers and other community members.

I am extremely excited at the opportunity to see the wonderful things that our students will put together and the looks on their faces when they have finished giving their presentations. I believe this is a tremendous opportunity for them to develop a public voice and create some agency. I am

Sincerely,

Mr. Doby

	Paper/Presentation	Video	Art Project
3	Uses information from class and outside sources to write a clean 7-paragraph paper with thesis statement. Has a clear argument and also provides information from any other side of the topic there may be (i.e anti-fracking, or that life for a migrant was better in Michigan than where they came from).	Video presents an argument as though they were using a thesis stamen. The video also relates heavily to knowledge learned in class and humor is not used purely for the sake of being funny. The video stays on topic throughout and they also present some information that conflicts their own argument. The video is cleanly made and lacks any inappropriate language or behavior. It is backed up by a three-paragraph essay	Art clearly relates to the topics that we have discussed in class. Through the three-page paper and thesis, it is clear what the student's motivations in creating the art were and how it relates to the class. The art should not be so abstract as it is shapes and colors and is near incomprehensible to anyone without a deep explanation. Is backed up by a three-paragraph essay.
2	Paper does not meet all of the requirements listed above. For example does not show the other side; grammar and spelling lead to the paper being hard to read, does not provide enough supporting evidence.	The video does not stay on topic throughout and devolves into silliness occasionally. The video does not have sufficient supporting evidence from the class and may feature occasional inappropriate language or behavior. A three-paragraph essay backs it up.	The art only loosely relates to topics that we have learned in class. The essay accompanying the piece does not do a good enough job in explaining the artists motivations and how it connects to knowledge gained in the class. A three-paragraph essay backs it up.
1	Paper does not have a clear thesis.	Video lacks an argument, or is done purely for fun and is not taken seriously by students. Includes barely any if any at all information from the class. Does not have a three-paragraph essay to back up	The art barely relates to knowledge gained in the class. The paper does not convince Mr. Doby that the artist had any motivation in connecting the art to the class. There is no three-paragraph essay.

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