The Coal Industry and Streams

Introduction: The 21st Century has ushered in major changes in our economic, political, and social systems. These changes are reflected in coal producing states throughout America. Basically citizens have little understanding of the coal industry's impact on our economy and daily life. Our 2012 Coal unit was developed to give all students and the community a balanced approach about energy needs including coal. First, we analyzed Strategies 1, 4, & 7 of the Governor's Energy Plan. After building an organizational map to assess key ideas students arrived at one conclusion: ***Education was the key***: If we are to educate others about coal's role in the 21st Century…we must begin in our classroom. To fully understand the Energy Plan students used headings, subheadings, and graphics to analyze main ideas. Graphic organizers were used to identify these ideas, and questions were developed. After discussion, students used parliamentary procedure to decide on the unit's focus: The focus will be:

- How has mining in our area affected water quality of our streams? (Science)
- Can nuclear or CTL technologies answer the US's energy needs? (Speech)
- Can citizens alter their carbon footprint? (Practical Living--Blogs)
- How can ordinary citizens bring about social, economic, and political change in the countries' policies about coal and energy needs? (Social Studies)

The main goal of the unit was to develop a well-informed, educated citizen that can enact political and economic change for not only the coal industry, but for the common good.

Activities and Objectives: ***Social Studies Objective***: Students understand the democratic citizenship principles of responsibility and apply them to real life situations. We used think, pair, and share: Step 1 teacher asked *"How can you, as a citizen, bring about systemic changes to local, state, and national policies affecting the coal industry?"* Using

the Smart Board the class and I analyzed 3 types of citizens on (http://www.civicsurvey.org). After examination of 3 citizenship types, students worked in pairs and shared their viewpoints on how a responsible mining employee is different from a committed mining employee. Students discussed examples such as responsible mining employees volunteer in community projects, but committed citizens not only volunteers but keep informed on current EPA legislations. In groups of 2, students used graphic organizers to organize their perspectives. Step 3 students shared their organizers in groups of 4 and one speaker presented results to the class. As we shared our graphic organizers, I developed scaffolding questions for struggling students to assist with an open response question. We used you-tube to gain other perspectives about coal. Students completed an open response that required examples of mining employee's citizenship responsibilities. Methods of persuasion were analyzed so students could write speeches that would bring about systematic change in the way Americans view coal. This kept with the focus that education was the key to changing people's views on the coal industry. Voca: citizens, duties, responsibilities Websites used: http://www.gonzotimes.methods-of-protest & http://www.facesofcoal.org/ & http://www.epa.gov.

Math: Students will calculate problems to develop an understanding of operations with rational numbers and extend understanding of multi-step problems. The 8th grade Gifted students calculated problems related to coal. In collaberative groups, they tutored seventh grade. Problems came from or were patterned after: http://www.need.org. Students gained an understanding of proportions and fractions as they compared different energy resources. Visuals were used to clearly display relative data. The math

demonstrated coal's relevance to our energy needs. Open response questions helped students reflect on affordable energy resources and real-life applications: What if KY had no reliable energy source, and we imported most of our fuel? IEP students were provided with calculators and given extended time. A possible extention is: Break down the price each state pays for their electrical needs and graph the main source of electricity for each state. Voca: exports, kilowatt, conversions, percentage

Science: Students understand how living and nonliving things change over time and factors that influence changes. In teams students analyzed samples from a local dam and stream to investigate water quality and its impact on living organisms.. Students learned to record appropriate physical, chemical, and biological data by using a table. Open response question assessed summative learning and open discussion. Guided questions helped assess formative learning. Struggling students had peer tutors. Focus for the open response: how the government and mining industry cooperate to protect our streams. Students research agencies and policies that affect the mining industry such as EPA & CWA. Technology used was Brainpop and United Streaming. Vocabulary: Alkalinity, Dissolved Oxygen, Hardness, Nitrate, Acidity, CWA, permits

Practical Living: Students demonstrate the skills to evaluate and use services and resources available in their community. Using local newspapers, students work in pairs to analyze coal industry classified ads. Accessing their prior knowledge students used. http://www.johnmh.com/Classifieds as a tool for reading classified ads. Struggling readers and writers were paired with proficient readers. This had positive outcomes as students shared stories of relatives who are employed in the coal industry. Students wrote a classified ad for their ideal job in the coal industry. They exchange ads with

other students for feedback. Grades 4 & 6 made a checklist of energy efficiency tips to use at home to comply with the Governor's Energy Plan. As a summative project students wrote blogs about energy efficiency. Using the Smartboards, blogs were shared and evaluated by their peers. Vocabulary: Classified, FT, PT, Ref req, minimum. Sites used: Brainpop, http://www.energyhog.org, & http://www.sparkenergy.com

Technology: Students will have the skill to collect information from the Internet & communicate it effectively. Students created power points demonstrating knowledge of coal's history. Students choose events. This gives visual aids for LD students.

ARTS AND HUMANITIES: 2.22 Students create works of art and made presentations to convey points of view. Using http://www.ehow.com/video_8040264_draw-cubism-art.html the students developed cubism art techniques using a mining dinner bucket. Voca.- Shading, crosshatching, stippling, segments.

Language Arts: The students used oral and written language and technology for expressive, informational, argumentative, critical, and literary purposes. Students wrote speeches for or against CTL or nuclear energy plants. Students worked in collaborative groups considering both sides, gathering evidence, and took a position. Students developed their own speeches to present orally. Checklists were used in assessing oral speeches. Checklist included. In small groups students used graphic organizers to understand vocabulary. Students could analyze and compare vocabulary with critical analysis. Writing was an extensive part of our unit, and students had choices in developing their pieces.

Summary: The activities in this unit were formulated to create independent critical thinkers who could bring about economic, political and social change. They were aligned

with Kentucky's Core Content. Students with IEPs were given extended time, many visuals, peer intervention, and hands-on activities. Prior knowledge was assessed using real-world application. Students' individual learning styles were addressed in the many hands-on activities and collabrative groups. Their ability to recall, analyze, compare, infer, and evaluate was enhanced as the coal unit developed. Additionally, students worked in teams to collaborate on speeches, science analysis, vocabulary check, and classified ads. Collaboration is a good way to get students ready for the work place. Character education was stressed as students analyzed mining employees' citizenship traits. Differentiation of instruction was utilized. Multiple forms of assessment - open-responses, blogs, speeches, tests, and informal evaluations -required students to apply their learning in real world context. The many activities deepened students' understanding of the Gov. Energy Plan & citizenship roles. Students understood that citizens have the power to enact change about coal not only at the local level but in the national arena. Using prior knowledge students expanded their knowledge of our coal roots. They realized that the coal industry and citizens in our regions have a collective commitment to economic growth and environmental protection. Clearly defined rubrics facilitiated students' learning. Feedback from me and their peers enriched the learning experience in *" Coal Industry and Streams."* As their skill and knowledge grew **97 -- 7th and 8th** grade students took more ownership in our coal unit. The unit took **6-weeks** and numerous teachers were involved. Students shared their expertise with lower grades. Other teachers helped with unit's implementation by assisting with research. The concluding event was our school coal fair. Students presented their projects to other teachers, administrators, and students. Some of their projects will be exhibited during

Open House for the community. Students that have never participated in the Coal Fair are looking forward to judging at the regional CEDAR Coal Fair. Educational goals were accomplished when students became independent learners through coal fair projects & hand-on activities (collecting & analyzing water samples). Writing strategies were implemented as students wrote coal-related classified ads, CTL speeches, created power points about history of coal, and energy blogs. Critical thinking was addressed as students generated alternatives for fuels such as CTL technology or nuclear energy. The students' blogs stressed reducing one's carbon footprint. Solving multi-step problems encouraged students to recognize interrelations among coal and other power sources. Formal assessment was used: pre-test, post-test, open responses, guided questions, checklist for speeches, and self-assessment unit evaluation. Informal observation was utilized in students' responses in open discussion and small group activities such as vocabulary check. Differentiation of instruction stressed outcomes that gave students a balanced approach about coal. According to evaluation forms students thought the unit was successful; favorite activities were computer-generated games such as energy hog and cubism style drawing. The least activity was math because it incorporated multi-step problems. The students enjoyed the real-world application of evaluating their own streams, locating mining jobs in our community, and how to become a more committed citizen who participates in local and national issues such as coal-to-liquid technologies. This unit **has not** been taught before and **179 students** participated as the 7^{th} and 8^{th} grade students become mentors to the 6^{th} and 4^{th} grade students. **No CEDAR money was used to implement the unit.** The unit lasted **6 weeks**. Time had to be given for research and analysis and student and peer conferencing.

Checklist for 2012 Coal Project: Coal Industry and our Streams.

1. **Pre-and post tests**
2. **Students decided on focus points for the coal unit by using parliamentary procedures. _____**
3. **Formative assessment such as observation, questioning during activities, and teacher and student conferences. ____**
4. **Students can calculate math coal related problems using percentages and fractions. _____**
5. **Students understand the importance of reducing pollutants in our streams. _____**
6. **Students were involved in multi-technology programs to finish unit. _____**
7. **Students can develop an argumentative speech for or against CTL technology. _____**
8. **Students can organize, record, interpret, and evaluate data about our local streams and the impact of the mining industry. _____**
9. **Students can use the Governor's Energy Plan to organize main ideas. _____**
10. **Students can effectively reduce their carbon footprint by efficient use of energy resources in the home. _____**
11. **Open responses given as a summative assessment. _____**
12. **Students could work independently, in groups, and whole groups to develop effective means for mining employees to use persuasive methods to change people's views on coal. (Speeches and blog then developed) _____**
13. **Students demonstrated knowledge of vocabulary by using graphic organizers. ____**
14. **Students involved the community in the unit: power points on the History of coal were shown to community leaders, parents, students, and administration.**
15. **Characteristics of a good citizen were developed by students developing a graphic organizer on how mining employees can bring about systemic change in local, state, and federal policy. _____**
16. **Students could locate jobs in the mining industry by using the classified section of a local newspaper. _____**
17. **Students could critically analyze each other speeches using a checklist. _____**
18. **End of unit evaluation form. ____**

Pre-test ---- Post test ---Coal Unit 2012

NAME

1 What is a printed ad in the newspaper about jobs in the coal industry called?

- A Obituaries
- B Sport Ads
- C Travel Ads
- D Classified

2 What technology turns coal into a liquid?

- A PTO
- B CTL
- C CATS
- D FEMA

3 Which state has the most nuclear plants?

- A Kentucky
- B California
- C New York
- D Illinois

4 What does the abbreviation **exp req** mean in a classified ad for a roof bolter?

- A Experience preferred
- B Excellent requirements
- C Experience required
- D Checks and balances

5 What is the **best method** a citizen can use to bring about systemic change?

- A Protest
- B Write letters
- C Vote
- D Violence

6 The US exports 22 million tons of coal. What does export mean in this sentence.

- A To transport a product abroad for sale
- B Increase production of a product
- C To transport a product into the US for sale
- D Decrease production of a product

7 What year did the government pass the Clean Water Act?

- A 1972
- B 1952
- C 1962
- D 1942

8 Which statement is an opinion?

- A Coal can be used to make liquid fuel.
- B Coal is a non-renewable fuel.
- C Coal supplies half of the electricity in US homes.
- D Coal industry does not protect the environment.

9 How many workable CTL plants exist in the USA?

- A Zero
- B Five
- C Ten
- D Fifteen

10 ___ is the amount of carbon dioxide emitted due to energy by a person.

- A Productivity
- B Carbon footprint
- C Carbon monoxide
- D None of the above

11 What are way(s) to reduce our energy consumption?

- A Turn off lights when not in use
- B Shut down the computer when not in use
- C Use energy efficient light bulbs
- D All of the above

12 Which is **not** a responsibility of a miner?

- A Vote for a candidate that has a balanced view of coal
- B Volunteer to clean litter from our streams
- C Obey all EPA rules and regulation
- D Be aware of issues that affect the coal industry

PLEASE GO ON TO THE NEXT PAGE

Math

Students will us proportional reasoning to solve problems. Problems involve ratios, rates, proportions, and percentages.

Some problems came from Energy Math Challenge. However, some problems were changed to encourage students to recognize the interrelation among coal, natural gas, uranium, and hydro-power. Open response questions were included to check critical thinking skills.

Math Challenge

Math Challenge Sandra Sykes

1. **The United States exports 22 million tons of coal a year. What is the average daily export of coal? How many tons of coal will be exported in August? If the exports increased 30% what is the export for August?**

365 | 22,000,000 = 60,273,972

60,273,972 × 31 = 1,868,493

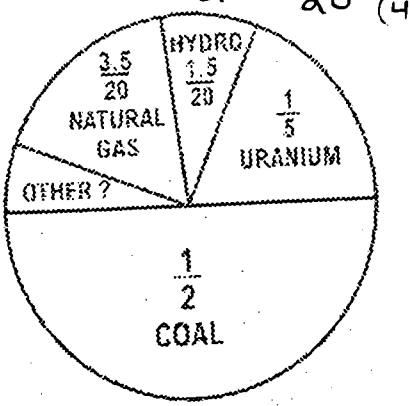
1,868,493 × .30 = 560,548

1,868,493 + 560,548 = 2,429,041

Answer 2,429,041

2. **Coal generates half the nation's electricity. What fraction of electricity is produced by uranium, hydropower, and natural gas?**

$\frac{3.5}{20} + \frac{1.5}{20} + \frac{(4)1}{(4)5} = \frac{4}{20} = \frac{9}{20}$



Answer $\frac{9}{20}$ 45%

3. **In Hawaii the cost of electricity is $13.40 per kilowatt. Kentucky that has the lowest cost of electricity is $4.26 cents. What is the percentage of increase for electricity in Hawaii compared to Kentucky? Open response: Why is it cheaper to use electricity in Kentucky?** Supply and demand makes The cost of electricity high in Hawaii. Hawaii depends on oil for fuel. Hawaii has to import oil because 76% of the State's electricity comes from oil. With the crude oil costing approximately $100 a barrel island residents must pay a high price for electricity. However, 94% of electricity used in Kentucky is generated by coal. Ky. has an abundant coal supply.

Answer 316 %

4. **In 2002, the US produced 1,094 million tons of coal. The US consumed 1,065 million tons of coal. In 2030 the tonnage has increased by 30%, how many millions tons of coal is produced in 2030?**

1094 × 130 = 328.2

30%

1094.0 + 328.2 = 1,422.2 million tons

2030

Answer: 1,422.2 million tons

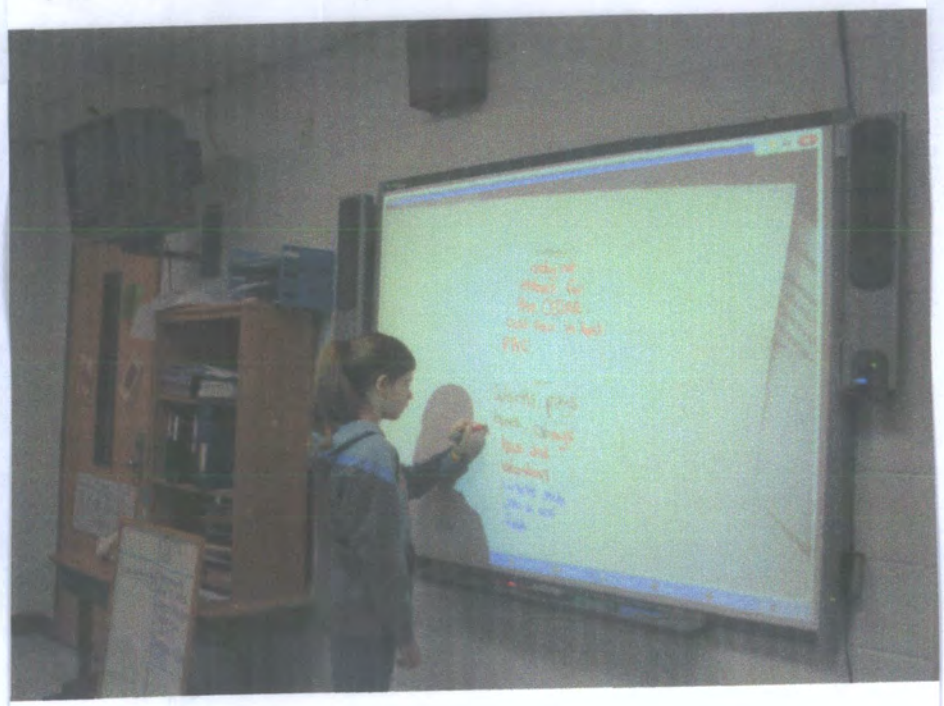
Social Studies

Students demonstrated the knowledge of citizenship and the duties and responsibilities of a Citizen by using an employee of the Coal industry to explain:

3 Kinds of Citizens

Personally Responsible
Participatory
Justice-Oriented

Graphic Organizers were used to analyze the 3 types of citizens and students' complete an open response question



Sandra Sykes

5. **The United States consumes about 4,000 billion kilowatt-hours of electricity a year. Uranium fuels about (bkWh) of electricity a year. Uranium fuels about 796 bkWh of this electrical power generation. To the nearest tenth of a percent, calculate the percentage of the nation's electricity that is generated by uranium in nuclear power plants. Open Response: If terrorists destroyed ½ of our nuclear power plant, how will this impact our domestic coal fields?**

796
4000
19%

Answer On Back For Open Response

Answer: 19%

6. **Approximately 31% of the nation's 115.8 million housing units are heated by coal. To the nearest million, how many housing units in the nation are heated by coal?**

115.8
x .31
35.898 = 36

Answer: 36

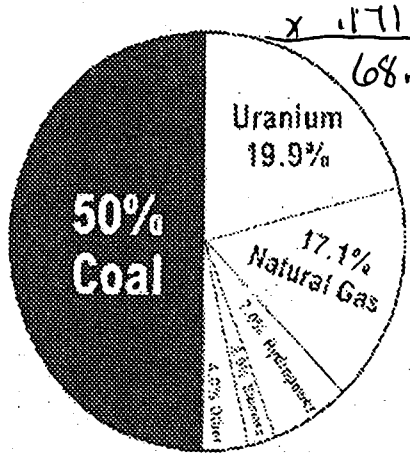
7. **Today's power plants convert about 1/3 of the energy stored in fuels into electricity. During these conversions, most of the energy is transformed into heat rather than electricity. A certain electric power plant consumes 360 unit of energy every day. How many units of electricity would the plant actually generate in a week?**

120
3|360
3
06
6
00

120
x 7
840

Answer: 840 units

8. **The U.S. consumes about 4000 billion kilowatt-hours (bkWh) of electricity a year. How many billion kilowatt-hours of electricity does natural gas provide?** 4000
x .171
68.4 billion



U.S. ELECTRICITY PRODUCTION

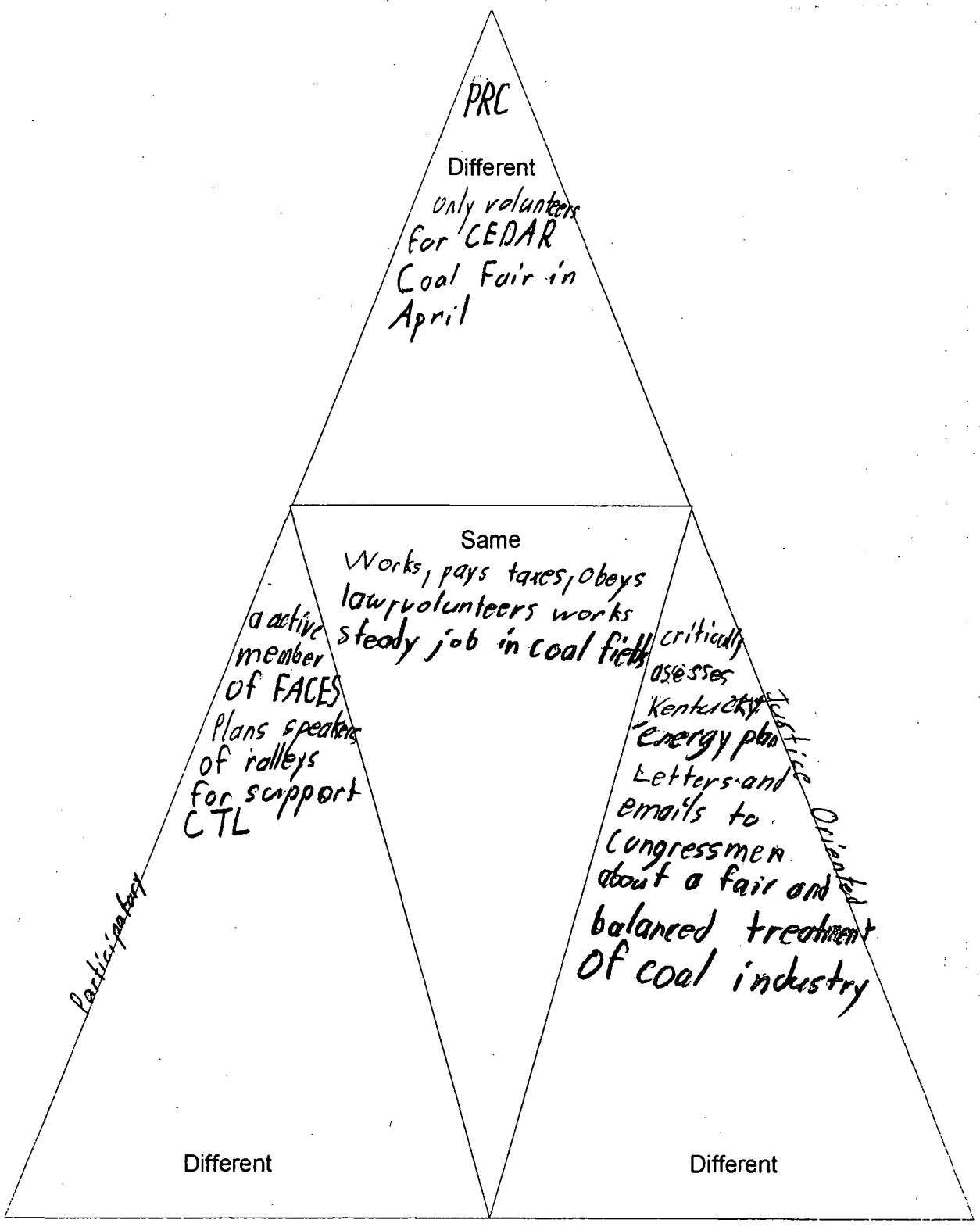
Answer: 68.4 billion

5. If terrorists bombed a nuclear plant, it would have devastating effects on the environment and on the country's economy. There would be a greater demand for coal since nuclear energy was not available. Coal now produces 50% of our electricity. The simple truth is that coal resources can meet our energy needs. This would increase the economic opportunities in coal producing states. A terrorist attack on nuclear plants would cause the nation to find safer and more effective ways to produce electricity. Coal would be one viable solution.

Seth Hatfield

Compare and Contrast

3 types of citizens, Personally, Responsible Citizen, Participatory Citizen, and Justice oriented citizen: Draw a picture of the difference of each type



1. Identify 3 civic responsibilities or duties of a mining employee. Explain with details
2. Identify 3 responsibilities of a participatory citizen. Explain each with examples
3. Identify 3 responsibilities of a justice oriented citizen Explain each with examples
4. How can you become a better citizen? Be specific with examples

Rubric for Citizenship: Compare and contrast 3 types of Citizens using mining employees as the focus group.

4	Answers all parts of the questions about a responsible mining citizen, participatory mining citizen, and a justice oriented mining citizen. Clear concepts, used critical thinking skills well. Complete with clarity of thought; Demonstrated vast knowledge of each type of citizen: responsible, participatory citizen, justice-oriented.
3	Answers most parts of the question using critical vocabulary. Clear concepts, most used critical thinking skills. Demonstrated acceptable knowledge of each type of citizen: responsible, participatory citizen, justice-oriented. Has clarity of thought.
2	Answers some parts of the question; is missing some critical vocabulary; Concepts are somewhat unclear or inappropriate for the 3 types of citizens
1	Unclear – Leaves out critical vocabulary. Missing concepts about the how a mining employee can fulfill his civil responsibilities. Has major flaws; Response does not demonstrate an understanding of the plan

Cheyenne Doyle

A

A mining employee's duties and responsibilites are:

A. works for his family
B. Pays taxes
C. Obeys all laws
D. Volunteers at local events such as pride clean up of Fishtrap Lake

Gave 3

A participatory citizen goes a step farther to be a better citizen. They will organze speakers to come to local schools and public meeting to support coal. Also, they join groups such as Faces of coal and stay informed about local coal issues such as stl plants. A participatory citizen writes e-mails to his congress-man about coal issues

Explained with examples

A justice oriented mining employee will critically assess Kentucky's Energy plan. By writing editorials to the local newspaper he can help educate the public and bring about systemic change for support of a local CTL plant. Also, he explores different perspectives about the reasons people are anti-CTL or pro-CTL. Then, he uses forms of persuasion and statistics to back up his objectives- that coal can be mined in a way that supports the environment (coal sequestration) and promotes a strong American economy.

Demonstrates Knowledge

First I must work to provide for myself and my family. If I want to work in the coal industry, I must educate myself. I must have a highschool education to work in the mines. Be aware of issues that affect the coal industry, and my country. Take a balanced approach on issues. Support and vote for candidates that have a balanced approach about the coal industry and our

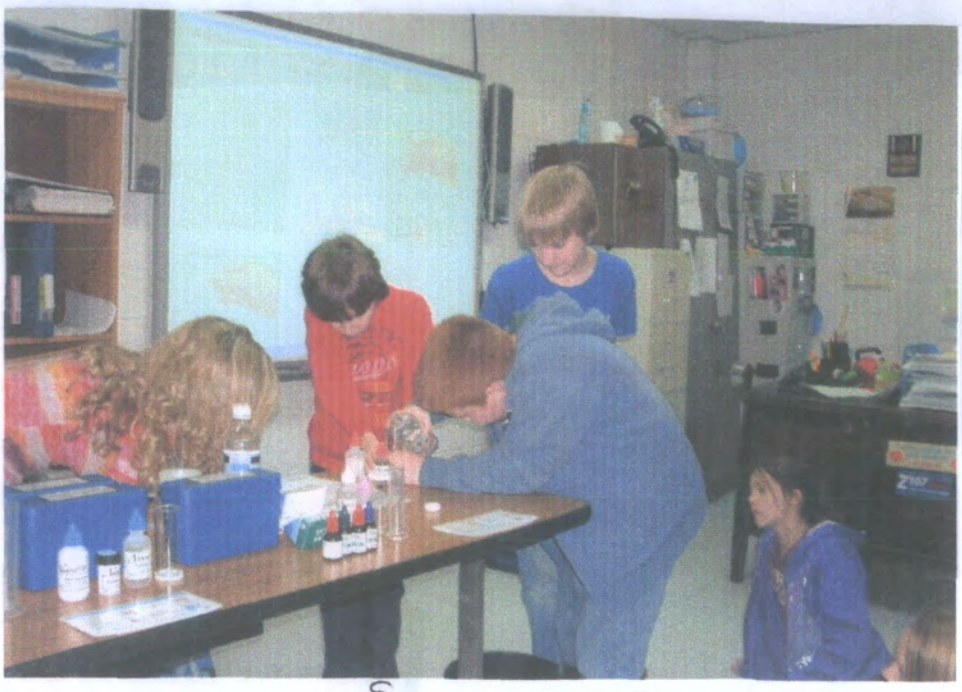
Specific Answers

energy needs.

Science: EVALUATING LOCAL STREAMS

Students demonstrated the knowledge of water interaction and results of those interactions on our local water ways: Students learned to record, organize, interpret, evaluate data.

Hands-on experiment checking the local lake and streams for:
Alkalinity
Dissolved Oxygen
Hardness
Nitrate
Acidity
Using the experiment students answers questions comparing and contrasting the 2 water samples: 2 samples were from Fishtrap Lake and Pompey Creek
Open response: Identify 3 ways the coal industry and government cooperate to protect our streams?



Science

Logan 7th Grade

Dam	Creek
P/T Dam 200PPM	P/T 210PPM
Ph Test 8.5ph	Ph Test 8.0ph
Dissolved Oxygen Test 13	DO Test 12
Hardness Drop count 130	Hardness 520
Nitrate Test .1 ppm	Nitrate Test .1 ppm

Note: ppm – parts per million –example numer of oxygen per million = total molecules in a sample

1. P/T measures the alkalinity. Streams with a ph reading of 8-8.5 range are very resistant to changes in the pH. 200 ppm is productive. Some pollutants are sewage and household cleaners.
2. H+ ions in the water. 6.7---8.6 supports a variety of organisms. Some pollutants are acid rain and sewage.
3. Oxygen is needed for cellular respiration. 5 ppm good for most gill breathers / 10 ppm is good for trout. Pollutants are thermal and sewage.
4. Hardness measure calcium and magnesium. These are dissolved in runoff as water flow over the minerals. Soft- 0-60 Very hard 180
5. Nitrogen – released through natural decay of organic matter. <.3ppm ..3ppm = algal bloom. Ammonia>.5 ppm harmful to gill breathers.

Answered all questions

Questions:

1. Using the data collected, is the lake or stream more resistant to changes in the pH? Do you think the mining industry has affected the streams ability to resist changes in the pH?
2. Will the lake or the stream support the most organism? How can the coal industry protect our lakes and streams?
3. Is the stream good for trout? Why?
4. Test proves our water is very hard. Why? What contributes to the hardness of our streams?
5. Are these streams harmful to gill breathers? Why?

Logan

① Creek 2 is more resistant because it is 210ppm The coal industry highly regulated lake precautions to keep streams clean

② The Creek and the lake support a variatey of organisms. Through planning and technology the coal industry reduces pollutions in our streams

③ Both the creek and lake have good oxygen.

④ The lake was less hard the creek was very hard the lake was 130 creek 520 water travels through rock and soil it picks up calcium and magnesium regulation the coal industry tries to prevent excess water pollu

⑤ NO it's hard water a variatey of organisms can live in Fish trap lake and Pompey creek.

Open Response: Streams

A. Identify 1 approach the government uses to regulate and reduce pollutants from our streams Explain

B. Identify 2 ways the Coal Mining Industry protects water quality of our streams. Explain

C. How can the mining industry and government cooperate to protect the water quality of our streams?

Holistic Rubric for Essay Questions		
Response	**Criteria**	**Rating**
Exemplary	Clarity of thought, Complete. Shows understanding of all components, Can support ideas effectively.	4
Minor Flaws	Completes the open response but explanations are somewhat unclear, may contain some incompleteness, inappropriateness	3
Fails to complete	Unclear with major flaws, Product does not reflect the question, does not distinguish what information is needed	2
Novice	Restates the question without making an attempt at a solution	1

Open Respance

STREAMS

Brittany.

A. In 1972 the government passed the Clean water Act that protects our Streams by providing a permit program. Also, the CWA requires industries to follow two basic rules that regulate the discharge of pollutions. The government funds programs to protect water Sources

Supported ideas

B. Through technology and use of lower quality and recycled water the coal industry may reduce pollution of our streams and lakes. Mining industries Carefully seperates water runoff from undisturbed areas from water that contains calcium, magnesium, and other potential harmful chemicals.

Clear Thoughts

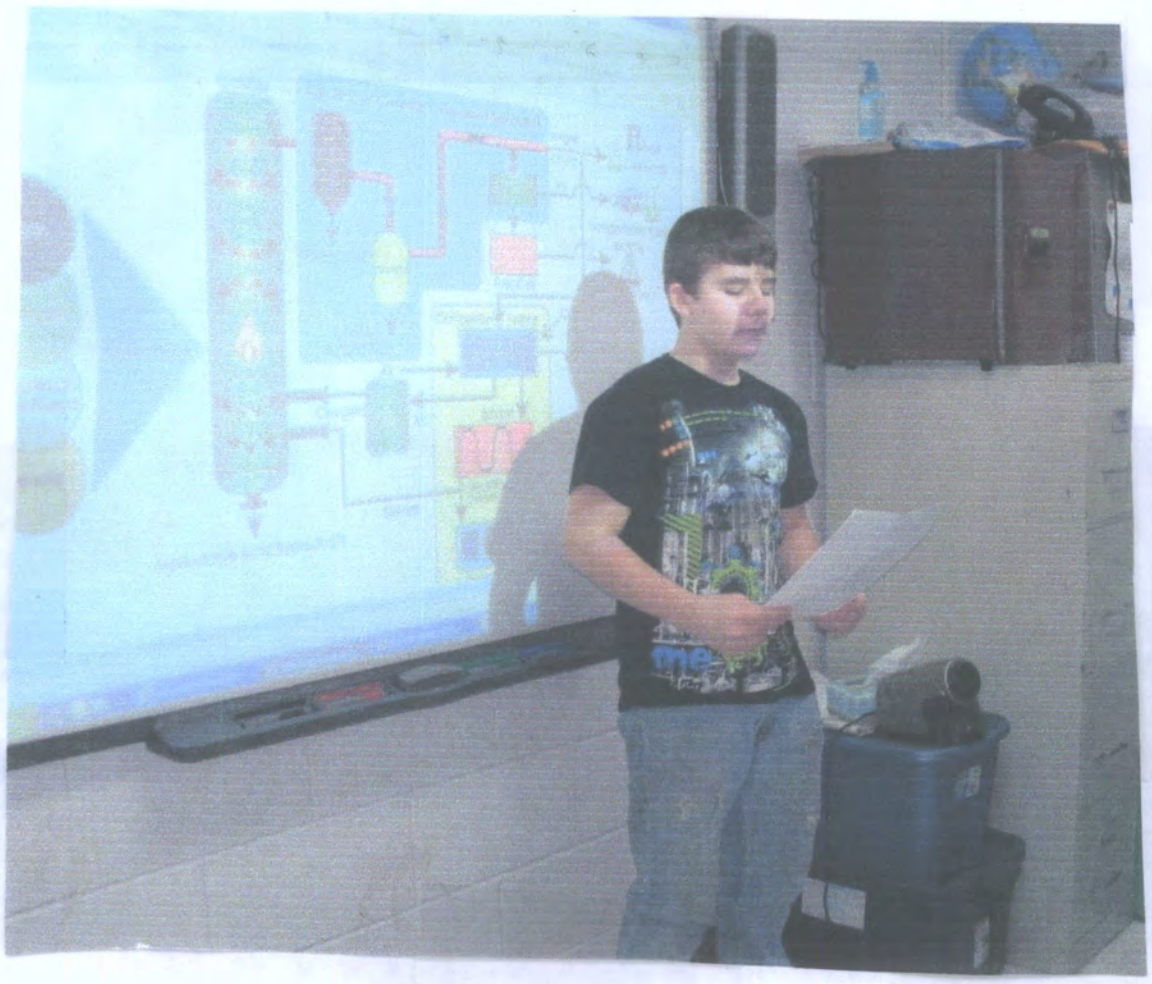
C. Through planning and before a mining permit is Issued the enviroment including the aquatic life must be Studied and any water potential problems are identified and addressed. Then a plan is implemented to minimize thrats to our lakes and streams. Effective mining designs will reduce harmful pollutants from entering our lakes and Streams

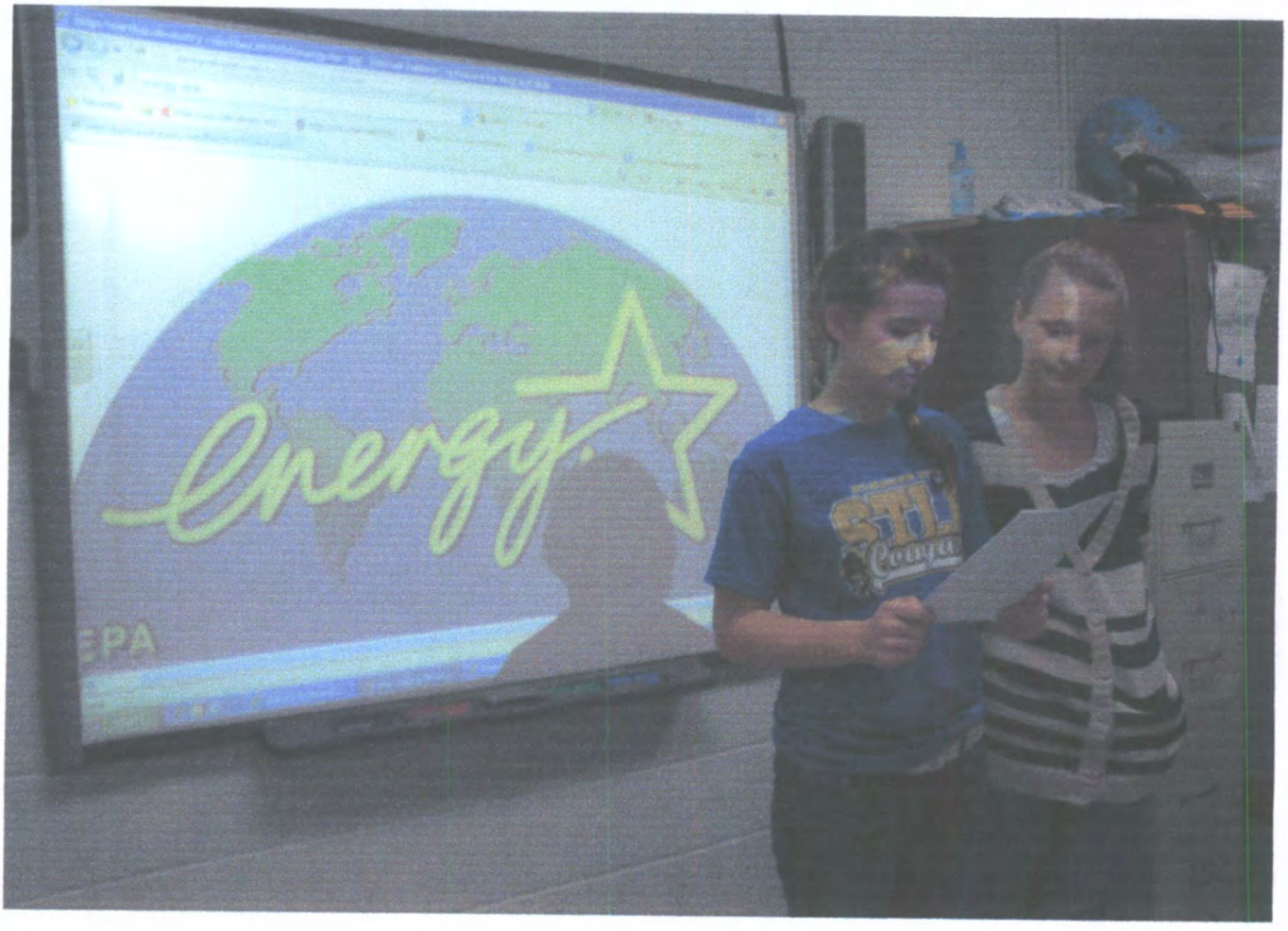
Gave details

Language Arts

Language Arts: The students used oral and written language and other technology for expressive, informational, argumentative, critical, and literary purposes.

- **Graphic Organizers for Kentucky's Energy Plan and Vocabulary**
- **Graphic Organizer Miners and Citizenship**
- **Blog on Energy Efficiency and coal**
- **Speeches on CTL/Nuclear Energy**
- **Wrote Classified Ads for the jobs in the Coal Industry**
- **Open Responses: Duties and Responsibilities of 3 citizenship classifications**
  If terrorist attack nuclear plants, how does this affect coal? How can the mining industry and government cooperate to protect our streams?




Energy
EPA

ORAL PRESENTATION RUBRIC to use CTL technology or Nuclear Energy

Exceeds Standard	Level 1	Level 2	Level 3	Level 4
Subject knowledge	Demonstrates mastery of the topic: CTL /Nuclear Energy	Demonstrates accurate knowledge of the topic CTL/Nuclear Energy	Demonstrates some knowledge of the topic CTL/ Nuclear Energy	Demonstrates little knowledge of the topic
Organization and coherence	Organizes information coherently and stays on the topic promoting CTL plant or nuclear energy plant	Organizes most information and stays on the topic promoting CTL plant or nuclear energy plant	Generally organizes information, occasionally straying from the topic promoting CTL plant or nuclear energy plant	Poorly organizes information and often strays from the topic promoting CTL plant or nuclear energy plant
Physical gestures	Actively engages the audience by making and maintaining eye contact and using movement (facial expressions, posture, gestures) to focus attention and interest	Usually engages the audience by making and maintaining eye contact and using movement (facial expressions, posture, gestures) to focus attention and interest	Occasionally engages the audience by making and maintaining eye contact and using movement (facial expressions, posture, gestures) to focus attention and interest	Neglects to engage the audience because rarely makes and maintains eye contact or uses movement (facial expressions, posture, gestures) to focus attention and interest
Voice	Always speaks clearly/loudly	Usually speaks clearly/loudly	Speaks clearly/loudly	Does not speak clearly/loudly
Language conventions	Uses appropriate grammar and vocabulary	Uses mostly appropriate grammar and vocabulary	Makes some errors in grammar and vocabulary	Makes many grammatical mistakes
Visual aids	Creatively uses a variety of effective visual aids and/or other methods of delivery	Uses visual aids moderately effectively and/or other methods of delivery	Moderately ineffective use of some visual aids and/or other methods of delivery	Does not/ineffective use of visual aids and/or other methods of delivery

Grey Lowe

Use the below Checklist to assess effectiveness of Speeches on building a CTL plant in Ky. or a nuclear plant in Ky.

	Yes	No
1. Did the introduction prepare the audience and capture attention?	✓	
2. Did you understand the main idea?	✓	
3. Was the speech given at a pace so all words/ideas were understood?	✓	
4. Where facts and statistics given to support main idea?	✓	
5.Was Information is organized effectively?	✓	
6. Do I have logical transitions?	✓	
7. Speaker spoke loudly and clearly?	✓	
8. Did the speaker stay on topic?	✓	
9. Did the speaker use eye contact?		✓
10. Does the conclusion provide a natural ending?	✓	

Darryl Lowe 2-13-12

CTL Funding

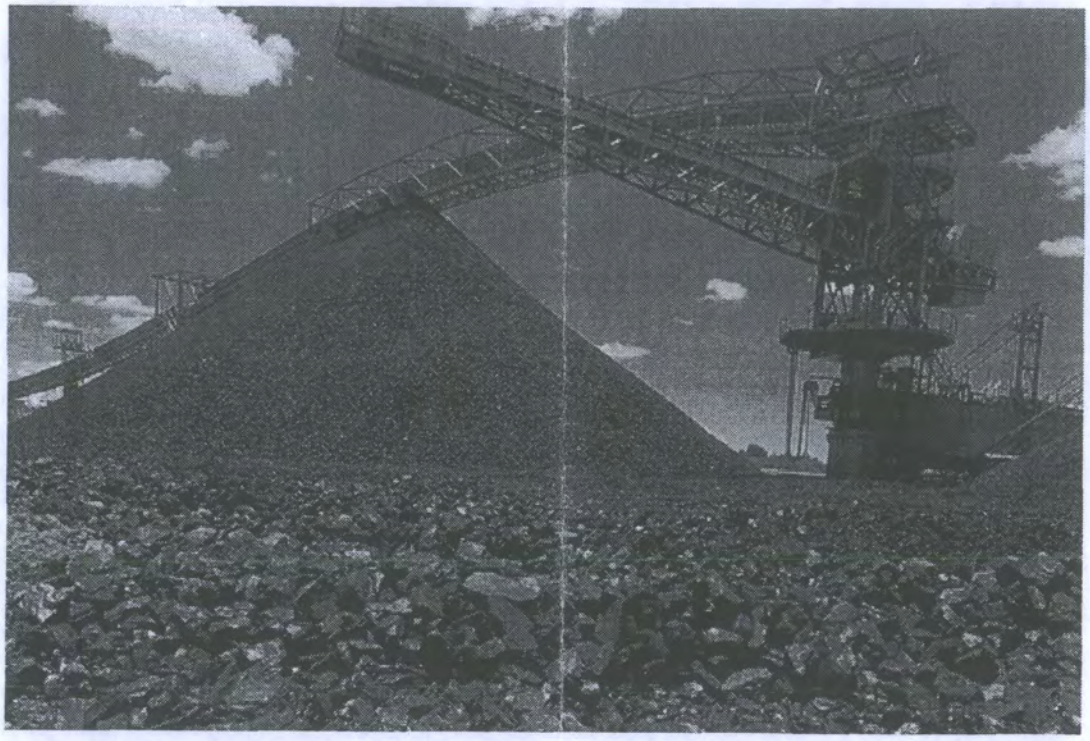
CTL (coal to liquid) should we use it or not? Or should we use Nuclear Power? The decision is up to you. Would you rather have a energy source you know is safe with little CO2 (carbon dioxide) emissions, or would you rather use a energy source with no CO2 emissions but, the risk of a major catastrophe?

CTL, which coal to liquid, is basically turning regular coal into useable gas like for vehicles and other gas ran accessories. Also, they way the do this is through a process called liquefaction and basically all they do is wash coal of its sulfur and nitrogen species. Then they will convert the coal into an oil based formula which could be used for gas.

On my account I'm for CTL technology and there are many reasons why. One reason CTL technology would be better than nuclear power is coal is more abundant in the United States than what uranium is. This means we should stick with coal for now because it would be less expensive and would improve our economy more because the coal industry would need more workers to mine and dig the coal.

Another reason we should use CTL for our energy need is safety! But what I'm talking about is like the risk of destruction such as, a nuclear melt down such as the one in Chernobyl, which occurred on April 26th 1986. Also, they are just now allowing tourists explore Chernobyl. Now would you like to put your country at risk to something so terrible? I know I wouldn't. but what the good thing is there is an alternative energy source that you wouldn't have to worry about this kind of disaster because it has nothing to do with to do with nuclear power, and this source of energy is coal! So this is a really important reason we should use CTL.

So in conclusion CTL has many advantages over nuclear power and we should use CTL over nuclear power. Anyway what I'm saying is thank you for you're time and thank you for reading my speech, I hope you enjoyed it. Also, I hope my speech has persuaded you into switching to the alternative energy of coal.



Use the below Checklist to assess effectiveness of Speeches on building a CTL plant in Ky. or a nuclear plant in Ky.

	Yes	No
1. Did the introduction prepare the audience and capture attention?	✓	
2. Did you understand the main idea?	✓	
3. Was the speech given at a pace so all words/ideas were understood?	✓	
4. Where facts and statistics given to support main idea?	✓	
5.Was Information is organized effectively?	✓	
6. Do I have logical transitions?	✓	
7. Speaker spoke loudly and clearly?		✓
8. Did the speaker stay on topic?	✓	
9. Did the speaker use eye contact?		✓
10. Does the conclusion provide a natural ending?	✓	

Is Nuclear Energy a Viable Energy Source?

Lori Adkins

Friends, Kentuckians, and Americans I have come to tell you -- don't be afraid of developing nuclear energy as a major energy source in the Twenty-first Century. Why? Nuclear energy has the potential to become an energy superpower! As we face the uncertainty of America's economical fate and the certainty of waning energy supplies, nuclear energy stands out as an attractive alternate. Can it replace coal as our number one energy source?

Today nuclear energy supplies more than 14% of the world's electricity. On the other hand, we get forty-nine percent of our energy needs from coal (http://www.usnews.com/opinion/blogs/barone/2009/03/25/). There are more than 30 countries today that use nuclear energy to generate a large portion of their electricity (http://world-nuclear.org/education/intro.htm). However, coal is the most widely used electricity source globally. It is reassuring that Kentucky has an abundant supply of coal, and the ability to develop nuclear energy as an alterative fuel.

Why is Governor Beshear investigating nuclear energy technology? It is really rather simple. The governor wants to diversify our energy sources. With all the negative press that coal receives, investing in coal technology may be a risky business for the private and public sector. Environmental issues and the constant pressure by anti-coal groups have limited investment in new coal technologies such as coal-to-liquid. Should Kentucky develop a diverse energy portfolio is a critical question for us to consider. I believe that Kentucky must develop a diverse energy portfolio. Nuclear plants can be part of this diverse portfolio.

Additionally, proponents of nuclear energy stress the fact that it has no carbon emissions. Nuclear energy has been a reliable energy resource and has a relative safe environmental record in the United States. Five of the seven states surrounding Kentucky have operational nuclear power plants (http://energy.ky.gov). So, why not us? Could it be that uranium is mostly mined in the West, and at best there is only a sixty-year supply (http://timeforchange.org/pros-and-cons-of-nuclear-power-and-sustainability)? In Kentucky we have an abundant source of coal. In fact, coal is a viable energy source for the next two hundred years. This is a very conservative projection because coal resources could last much longer.

Furthermore, uranium is mined. Do you think environmentalist groups are going to forget that small fact? Eventually, environmental groups will attack all mined energy resources. Nuclear energy, like coal, will be thrown under the bus as our citizens face high energy costs, inflation, and unemployment.

Another reason, Governor Beshear wants to invest in nuclear energy is costs. Nuclear energy rivals with coal as an efficient, cheap energy source. Uranium, like coal, is available. The cost of production and distribution of nuclear energy is comparable to coal. Besides, nuclear energy plants would give Kentucky another energy source to meet our growing industrial needs.

Furthermore, unlike coal that is hard to store for long periods of time, nuclear energy is easily stored. Nuclear energy does not take up much room and can be stored for years in small spaces (http://world-nuclear.org/education/intro.htm)
Also, nuclear energy is easy to transport. Coal transportation is a relative expensive venture. Sometimes it cost more to transport coal to CTL plants then to mine it. Yet, we

must be ever mindful of the risks of transportation and storing nuclear energy. Coal does not have these risks.

Proponents of coal-to-liquid state that the process of converting coal to liquid can meet our energy needs effectively and efficiently in the next century. Can nuclear energy compete? I think so if the drawbacks to nuclear energy is addressed. The wastes from nuclear energy are very dangerous and unlike coal wastes must be monitored for several thousand of years (http://timeforchange.org/pros-and-cons-of-nuclear-power).

Moreover, there is always a risk of terrorists' attack on a nuclear energy plant. If this were to occur, the terrorist attack on 9-11 will appear infantile. The radioactive fallout would be catastrophic to human life and the environment. There would not be thousands killed, but hundreds of thousand as radioactive materials descend upon us. It is a fact that the more nuclear power plants and nuclear waste storage units built the higher the probability of a terrorist attack on them (http://timeforchange.org/pros-and-cons-of-nuclear-power-and-sustainability). Kentucky will have to have stringent safeguards to prevent a terrorist attack on their nuclear energy facilities. Is this possible? Maybe! Are we really ready to risk it? Wouldn't coal-to-liquid and coal sequestration technologies be safer for the environment and human life?

To recap, nuclear energy is relatively inexpensive, wastes are more compact, and easy to transport. Nuclear energy could be another intelligent energy choice for Kentucky's future if safety concerns were addressed, nuclear wastes could be managed effectively, and new nuclear energy plants were built in a relatively short time. Nuclear energy may be your next supernova, but coal is and has been our country's energy super-power. Friends, Kentuckians, and Americans I have come to tell you -- don't be afraid of

developing nuclear energy as a major energy source in the Twenty-first Century. However, to have more diverse energy portfolio develop a coal sequestration process, too. All energy sources have positive and negative aspects. Let's not limit ourselves to a few. Let's build on modern technology to meet our energy needs. To stay a world power, the United States must develop a more independent, diverse energy plan that includes coat-to-liquid plants, coal sequestration capabilities, nuclear energy, and nonrenewable resources such as hydro, wind, and solar. Let's take a balance approach about our energy needs and resources.

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http://timeforchange.org/pros-and-cons-of-nuclear-power-and-sustainability

Use the below Checklist to assess effectiveness of Speeches on building a CTL plant in Ky. or a nuclear plant in Ky.

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8. Did the speaker stay on topic?	✓	
9. Did the speaker use eye contact?	✓	
10. Does the conclusion provide a natural ending?	✓	

CTL, the Promise of a Future

Jackie Jones

"Should we use CTL technology for our energy needs or nuclear energy?" That is the question many around our nation are asking. I am here to take a stand on this energy issue. We should and must develop CTL or Coal-to-Liquid technology. Let's develop CTL technology to its fullest extent. Did you realize that the United States does not have one functioning CTL plant? In this age of possibilities, how is this possible? Coal is our number 1 energy resource and CTL plants far surpass nuclear energy plants. CTL technology will not only increase economic opportunities for our sluggish economy, but safely, cheaply, and efficiently meet our increasing energy needs.

Opponents want to replace coal with nuclear energy. Coal has been and is the United States number one energy resource. Today more than half of the electricity we use for our homes and businesses is generated by coal. Therefore, it is vital for the United States to effectively utilize coal technology such as CTL for our basic energy needs. This technology will generate jobs in our sluggish economy. How can we do this? The answer can be found in Governor Beshear's Energy Plan. Kentucky hopes to have an operative CTL by 2025.

Moreover, it is vital that we develop CTL for our increasing energy needs. Recent studies show that the United States has over 182 billion metric tons of coal. We have the resource, coal, to develop this technology. Many other countries have used CTL plants with tremendous success. China, South Africa, and Germany have CTL plants. CTL technology is a viable resource that will reduce our dependency on foreign oil. Therefore,

reducing energy costs at the pump. How are we going to pump nuclear energy into **our** cars? Go CTL!

Plus, are we prepared for nuclear power plant meltdown? Regardless of the safeguards, nuclear energy is dangerous. The Chernobyl meltdown costs millions and bankrupted the Soviet Union's government. This disaster caused the Soviet Union downfall. Can the United States, which is perched on the abyss of an economic collapse, risk a nuclear meltdown? I think **not!** Go CTL not nuclear energy!

Furthermore, the aftermath of a terrorist attack on our nuclear energy plants would be tremendous. In a nuclear energy explosion death for many is inevitable, and the environmental devastation would continue for decades. Don't believe me. More than sixty years ago Nagasaki was bombed. Nearly eighty thousand were directly annihilated not to mention the thousands that died later. Nagasaki is still coping with the aftermath. The people grabble with a higher than average cancer rate and a high percentage of birth defects. Would a CTL plant cause this devastation? **No,** go CTL.

Many people do not know that CTL technology has safe guards to ensure the protection of our environment. There are effective coal sequestration processes. These technologies prevent the release of carbon dioxide into the atmosphere. Therefore, these processes will effectively silence coal opponents about global warming. On the other hand, there is no way to safely dispose nuclear energy wastes. These wastes remain dangerous until they decay which takes forever. Another solid reason to go CTL!

Moreover, transportation of nuclear waste is a nightmare. Most goes by rail in special designed containers. Although the industry states that they have safeguards in place to protect the public from nuclear disaster if a rail accident occurs, I don't believe

them. Our railroads' infrastructures are in disrepair and a rail accident is highly probable Let's transport a less harmful substance for our energy needs, liquids from coal that would address our energy needs without radioactive fallout.

Governor Beshear has the right idea—Kentucky is in a unique position to develop coal-to-liquid technology (Energy Plan, Strategy 4). Our abundant coal supply gives Kentucky an edge to a new age of energy independence. With the price of oil increasing daily we must find an alternative source of fuels for our vehicles, and that is not nuclear energy. The United States cannot be held hostage to foreign oil suppliers. Not, when the United States has the resource, coal, and the technology, coal-to-liquid, to meet our energy needs with a domestic, homemade fuel.

Will the funding of coal-to-liquid plants be expensive? Of course, but any new energy source has the potential to be costly initially. Nuclear plants are, also, very expensive to build. However, West Virginia will be a maverick in CTL technology as TransGas Development Systems LLC are planning to construct a plant on Adams Fork in Mingo County in the upcoming year (http://newsandsentinel.com).

Why is Kentucky lagging behind and not developing CTL plants? The answer lies in education. Many people don't realize the benefits of using this technology. The coal industry has failed to answer her critics about coal. This miscommunication has caused an open assault on the industry. The coal industry must use political, financial, and legal means to educate its critics and promote coal as our energy source for the Twenty-first Century not nuclear energy.

In conclusion, coal-to-liquid plants are an investment in the future. Nuclear energy has many drawbacks that prevent it from replacing coal as our number 1 energy

source. Coal is a trusted and tried energy resource. New technologies such as CTL and coal sequestration can be developed to meet our energy needs and protect the environment. The state of Kentucky and the nation must embrace CTL as the answer to our energy needs. "Should we use CTL technology for our energy needs?" The answer is a resounding: Yes!

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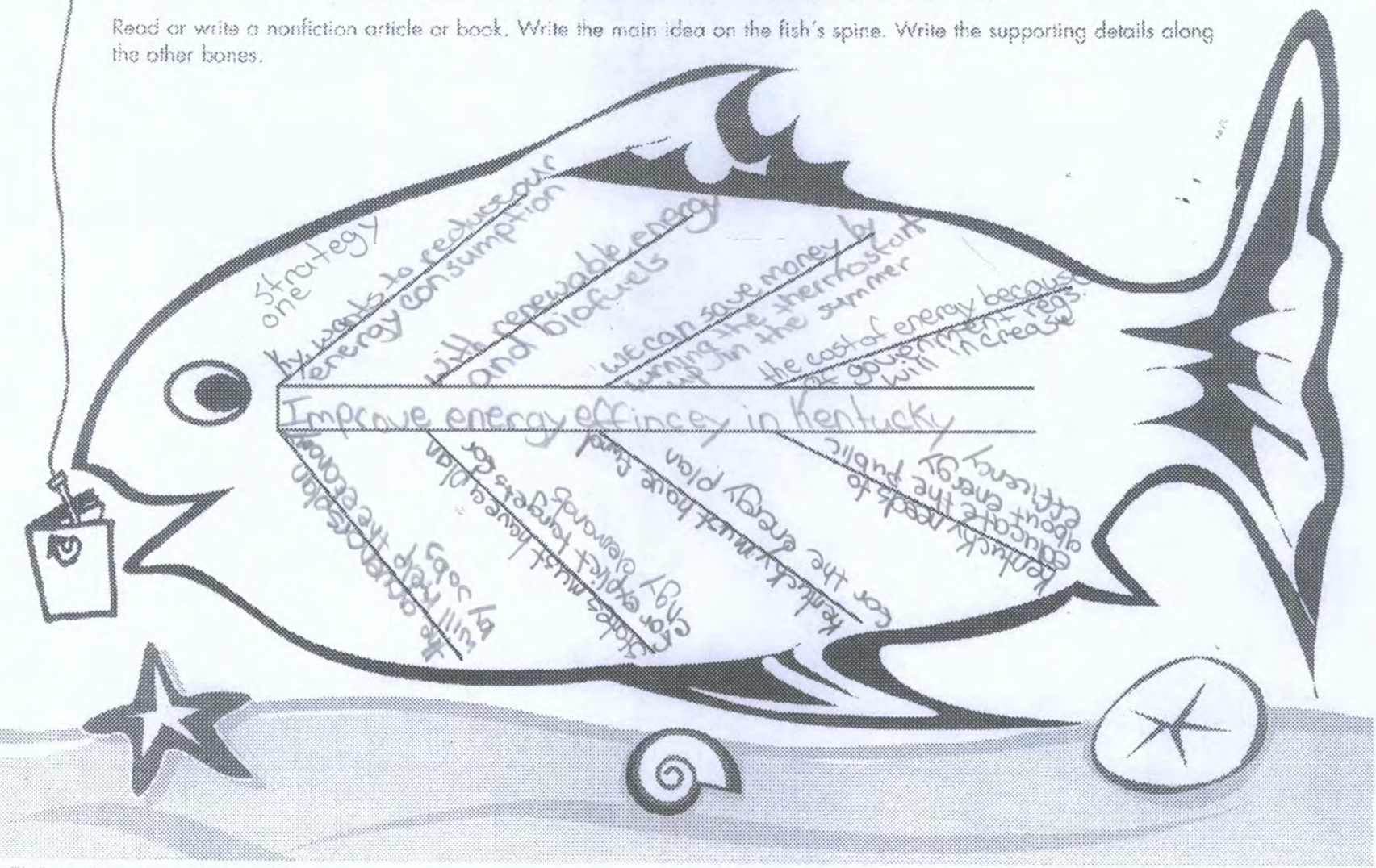
SCHOLASTIC

Name: Jamison Rowe Date: 12/16/2011

What's the Main Idea?

Read or write a nonfiction article or book. Write the main idea on the fish's spine. Write the supporting details along the other bones.



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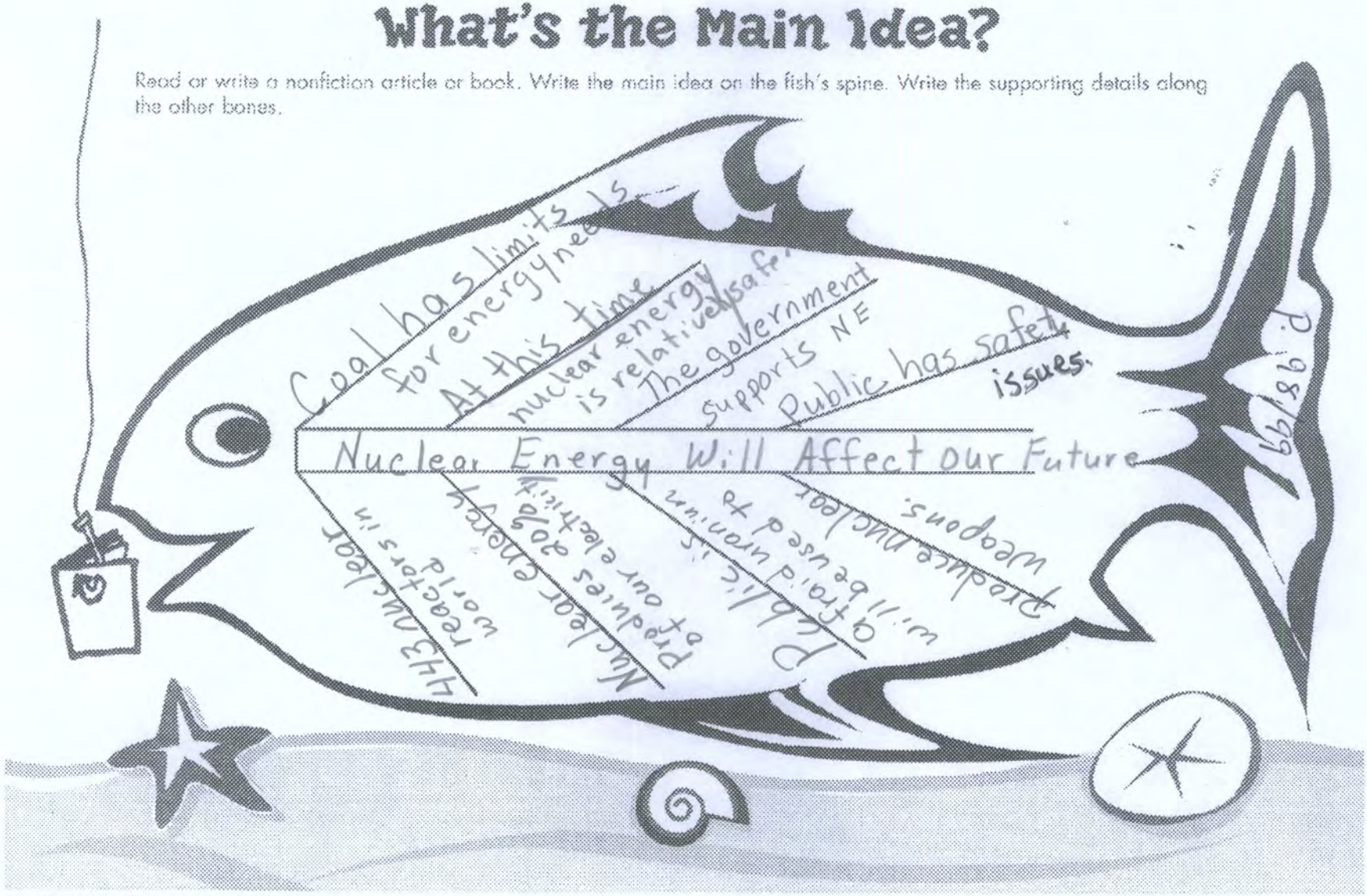
SCHOLASTIC

Name: Eden Ward Date: 12-15-11

What's the Main Idea?

Read or write a nonfiction article or book. Write the main idea on the fish's spine. Write the supporting details along the other bones.



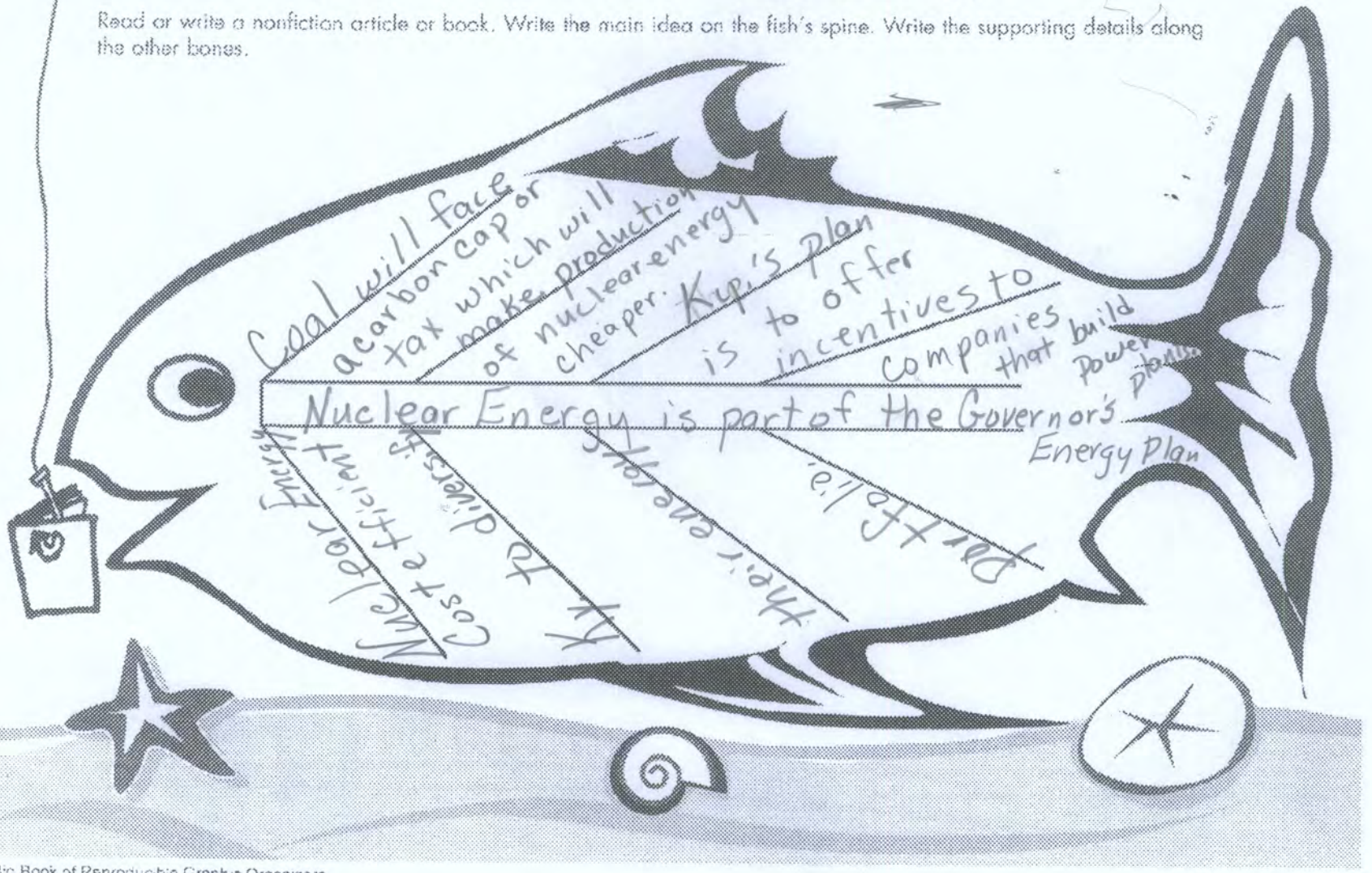
99-106

SCHOLASTIC

Name: Owen Bartley Date: 12-15-11

What's the Main Idea?

Read or write a nonfiction article or book. Write the main idea on the fish's spine. Write the supporting details along the other bones.



Energy Efficiency Blog

Hey, Hannah and Lesli here, we want to know your idea about carbon footprint. Is it the Scooby Doo show that kids enjoy on a Saturday morning? Is it a clue that Sherlock Holmes finds that solves the case? No, that's wrong. Our carbon footprint measures the impact our daily activities have on the environment. It relates to the amount of greenhouse gases we produce in our day-to-day lives as we go about our daily routines.

Used Ky.'s Energy Plan

Kentucky's governor, Steve Beshear, wants all citizens to be aware of their carbon footprint and find ways to reduce it. He even has a plan. Beshear's Energy Plan will lead to a more efficient use of our energy resources such as coal. Did you know that approximately ninety-four percent of our electric needs are generated by coal (www.facesofcoal.org)? Kentucky is the third largest coal producing state. However, we still need to be energy conscious and reduce our carbon footprint. Our governor hopes by 2025 to reduce our energy usage by eighteen percent (http://energy.ky.gov/Energy%20Plan). This plan will help conserve our coal resources for the next generation.

Engaged audience

Yet, really as teens, do we try to conserve our energy output? No, most of us do **not**. However, it is really easy and by cooperating we can all become more energy efficient. C'mon we will do this together! I know you are asking – How do I get started? First, develop an energy plan. Did you realize that energy efficient homes can reduce energy bills by forty percent (http://www.ext.colostate.edu). I don't know about you, but Lesli and I could use that extra money for things such as prom dresses and high heels. Don't know where to start? Start by educating yourself: What are the sources in our

home that uses electricity? Well, according to Energy Star and the U.S. Department of Energy, energy use for the average house is as follows.

- Heating and cooling 45%
- Water heater 11%
- Clothes washer and dryer 10%
- Lighting 7%
- Refrigerator 6%
- Dishwasher 2%
- TV/DVD 2%
- Computer and monitor 2%
- Other 15% (http://www.ext.colostate.edu)

Now, we have a start. Let's reduce our heating and cooling bill. Here are a few energy tips that are sure to reduce your electric bill: Change the filter every month (my mom changes it weekly) because a dirty filter will slow down air flow and make the system work harder – thus making you an energy hog. Install a programmable thermostat, this will decrease the temperature in the winter and increase the temperature in the summer when the family is gone. Thus, saving cash. Caulk and weather strip doors and windows (this keeps out the energy hog). Finally, when you are home set your thermostat in the winter as low as comfortable, and in summer as high as possible. (www.energyhog.com). Great tips don't you think.

Moreover, we can use our coal resources more effectively if we use our water heater more efficiently. Here are a few tips:

Specific Research

- Reduce the temperature setting of your water heater to 120 degrees F
- Install high efficiency low-flow showerheads. (We use one. It is Great!)
- Wash clothes in cold water, except for special loads such as stained clothes, and use the appropriate water setting for the load.
- Replace your water heater, when needed, with an efficient one (My Dad did!)
- Before using the dishwasher rinse dishes in cold water. (I do!) (http://www.ext.colostate.edu/pubs/consumer/10621.html)

Furthermore, Lesli and I can simply save energy by turning off lights as we leave the room. At my home all light bulbs have been replaced by compact fluorescent light bulbs. Also, outside lighting is on a timer to reduce electrical waste. These simple methods reduce our electrical bill and saves coal for future use.

Moreover, we unplug our chargers when we are not using them. Everyone has electrical devices such as cellphones, ipods, handheld games, laptops, etc. Yet we don't need to leave these devices hooked up. (a great waste of energy) Lesli and I leave our electronics on sleep and energy savers while they are not in use. Being mindful of the little things helps us all be more energy efficient. It's a habit we all should develop.

Ah, showers who don't love them? Everyone does! However, are thirty-minute showers necessary? The longer you shower the more water goes down the drain. Cut showers down to ten minutes top. Install low-flow sinks and showerheads is another energy efficient water tip. When we brush our teeth or wash our face we turn off the water. I repeat do not let the faucet run while brushing your teeth or washing your face or hands at the sink. Simple, but energy efficient!

Have you ever heard of energy star appliances? The major appliances in your home – refrigerators, clothes washers and dryers, and dishwashers take a big chunk out of your utility bill. All appliances in your home should be energy efficient and carry an Energy Star label. Mine do. If you haven't replaced that ten-year-old appliance, consider doing so. Am energy efficient appliance not only saves you money, but it is good for the environment. The less energy - the less demand on Kentucky's power plants. We are saving coal for future use (http://www.nrdc.org/air/energy/fappl.asp).

In conclusion, what does energy efficiency have to do with coal? Kentucky families depend on coal for their livelihood. By conserving energy we are keeping coal related jobs here now and for posterity. After all, coal is a nonrenewable resource that we must conserve. By becoming energy efficient our community will be economically healthy. Using electricity efficiency and effectively will increase the chance that Lesli and I can find economic opportunities in the coal industry. Get on board with the Governor's Energy Plan and cut your energy needs by eighteen percent by 2025. This will also save our coal reserves.

Lesli and Hannah signing off for the night hope you learned something from our blog. We did!

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- www.substainability.publicradio.org

Us Against the World

Good Intro

Can you imagine living in a world with no money to spare? Being a teenager I know how much we love our social life. But unfortunately, when my family and me have to pay the high costing bills, there is no money left for trips to the movies or for even just going out to eat. This is when I decided to learn more about the Governor's Be shear's Energy Plan. I also want to learn ways I can reduce my carbon footprint. I learned that I could persuade my parents to replace air conditioners with the Energy Star brand, activate sleep features on my electronics, seal my windows with the weather protection seal, pick up Energy Star light bulbs instead of incandescent light bulbs, and persuade mom and dad to install low-flow sinks and showerheads.

Gave specific examples

By replacing old air conditioners with an Energy Star brand we reduce the cooling bill by at least twenty percent. The Energy Star air conditioners have higher seasonal energy efficiency ratio. The higher seasonal energy efficiency ratio is fourteen percent more efficient than the old models. Also it saves on the bill if you buy the smaller Energy Star air conditioners. With the larger air conditioners it drains more energy.

I could also, activate the sleep features on all on my electronics. When I do this it saves a lot on the bills. How does it save energy you ask? It saves energy because when our computers and cell phones stay on it still drains energy even when not being played. So the simple thing to do would be to either just turn them off or put them energy saving modes. In sleeping mode it reduces the amount of energy consumed by these energy monsters.

Also, I could seal all of my windows. When sealing all of my windows, you can stop the amount of warm or cool air from coming into your house. By allowing this, you

are just asking for the house to become and uncomfortable temperature. When you feel hot or cold you automatically adjust the temperature to suit you. By doing this you are increasing the bills.

Then I could persuade mom and dad to pick up Energy Star light bulbs instead of incandescent light bulbs. When buying these light bulbs we save money by reducing the amount of heat being produced into the room. When heat is released into the room, the room is warmed , causing you to have to turn up the air conditioner in the summer time.

Lastly, we could install low-flow sinks and showerheads. By doing this we reduce hot water use. We could take shorter showers. The amount of money saved by doing this could by used to do the social life activities I am use too.

Conclusion Para.

The five ways I have began doing have helped my family save a lot of money. Also, adding Clean Coal Technology to the things I have already done will also help me have more money to spare. Not only does it Clean Coal help save money it is wonderful for the environment. So every one in my family gets the satisfaction of helping America become cheap, efficient stable, and helping our community's air.

-Angel Morton

Bibliography-

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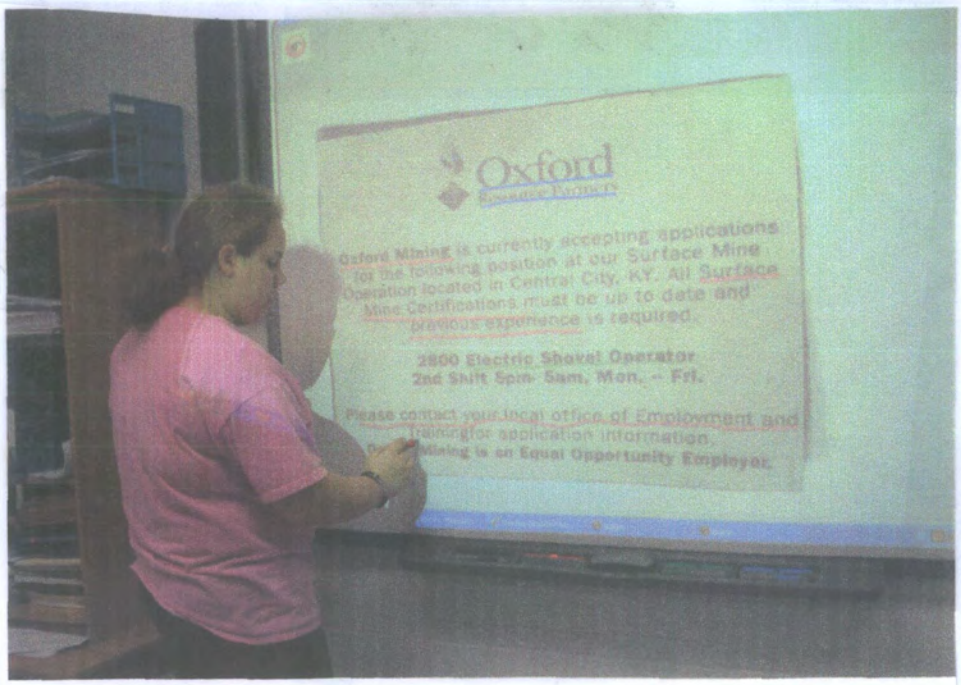
Classified Ads

Students demonstrated the skill to evaluate and use services and resources available in their community.

Analyzed ads about employment in the Coal Industry

Extension
Using Internet sources the students' wrote their own ad.



Students are to work in pairs:

Cut a classified job ad for the coal industry from a local newspaper. Place it in the left hand corner of your paper. Answer these questions.

1. Identify any vocabulary and abbreviations that you don't know
2. With a highlighter mark the following:
   A. What is the title of the ad?
   B. What is the company's name that placed the ad?
   C. What is the job?
   Answer the following questions:
3. What are the requirements for this job, including educational level, skills, availability (part or full time), experience in specific fields, physical ability if stated, and exactly what the employee must present to you as a condition of consideration for employment.
4. What is the salary?
5. What are some benefits of the job? (example: health insurance)
6. What attracted you to the ad?
7. Does the ad have clear instruction for the next action or response?
8. Was the ad difficult to read?
9. Was the font appropriate?
10. How is the information organized?
11. What is one thing that surprised you about the ad?

Extension:

As a writing exercise, you are to write an advertisement for what you consider an ideal job in the coal industry (Research facts), using abbreviations, (e.g., PT job, w/FT pay, M-Th only, No tests req'd. FAX number) Then exchange your ad with other students in the group and see if they can read it.

Daniel
Cheyenne

1. N/A
2. Experienced coal production personnel
3. Continuous
Miner Operators
Roof Bolter
shuttle car
scoop Operators
certified
underground Electricians
underground Mechanics
4. competitive rates
5. unmatched benefits
6. Bold letters and picture

Think-pair-share

7. hrkri@coalsource.com
8. the font was easy to read
9. Bold letters stood out
10. Jobs available and
contact information
11. you did not apply
directly to mccoy
you apply to the
employment services
in Pikeville

ATTENTION

EXPERIENCED COAL PRODUCTION PERSONNEL

You've probably heard that KenAmerican Resources' Paradise Mine continues to expand. Because of this, we are still seeking a few **highly** skilled, **highly** motivated personnel to staff our coal production units and support functions.

Based on our competitive rates, competitive bonus plan in Western KY and unmatched benefits, KenAmerican Resources offers a complete and comprehensive package. Couple this with long term reserves, our focus on safety and opportunities for growth; there is no better place to be.

Currently we are seeking candidates with 2 + years of experience to fill the following positions:

- **Continuous Miner Operators (a new Level II rate available)**
- **Roof Bolter**
- **Shuttle Car / Scoop Operators**
- **Certified Underground Electricians**
- **Underground Mechanics**

So if you know how to work safely
d run a lot of coal, please
our resume
ving:

"Paradise"... no better place to be!

rce.com

te 181 North

PLEASE

tunity Employer

Cheyenne
Doyle

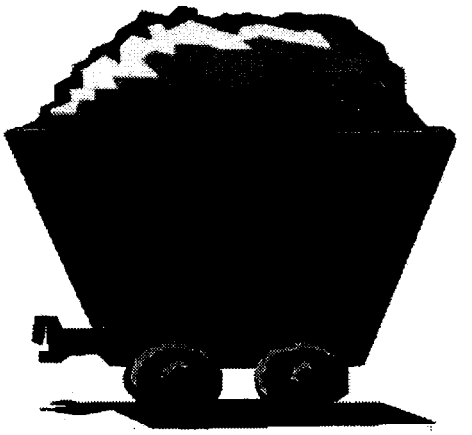
Grade 7

Experienced Electricians for Underground Mines
F/T, M-F, 2 yrs. Exp, and ref., $35/hr., benefits, pd. Vac. after 1yr. Call Elkhorn Coal Com. 666-654-1234. You may also come by Elkhorn Coal com. Office at 180 Cougar Drive, Elkhorn City, ky to fill out an application.

Used proper abbr
Gave requirement
Salary
Gave next response

Good use of visuals
Specific info
Fonts appropriate

API MINING



ATTENTION ALL MINERS THAT IS HIGHLY EXPERIENCED IN THE COAL MINING BUISNESS:

API MINING IS NOW ALLOWING APPLICATIONS FROM PEOPLE WITH THE FOLLOWING EXPERIENCES:

- **HIGH SCHOOL DIPLOMA**
- **TWO YEARS OF UNDERGRADUATE SCHOOL**
- **MAJORED IN TECHNOLOGY**

ON AVERAGE FULL TIME EMPLOYEES OF THIS JOB WILL EARN **$27.76 AN HOUR.**

ALL EMPLOYEES OF THIS JOB WILL BE REQUIRED WITH **HEALTH INSURANCE AND 401K.**

IF YOU ARE INTERESTED IN APPLING FOR THIS JOB PLEASE **CONTACT US AT (606) 754-8382 OR EMAIL US AT API.MINING@YAHOO.COM**

Angel Morton's Ad
8th grade

Art

Students demonstrated the elements of art (line, shape, spacing) to design a new logo for CEDAR, inc.
Learn to compose shapes, lines, and colors and principles of composition including time, motion, emphasis, and unity by drawing a 1950s Coal miner's dinner bucket

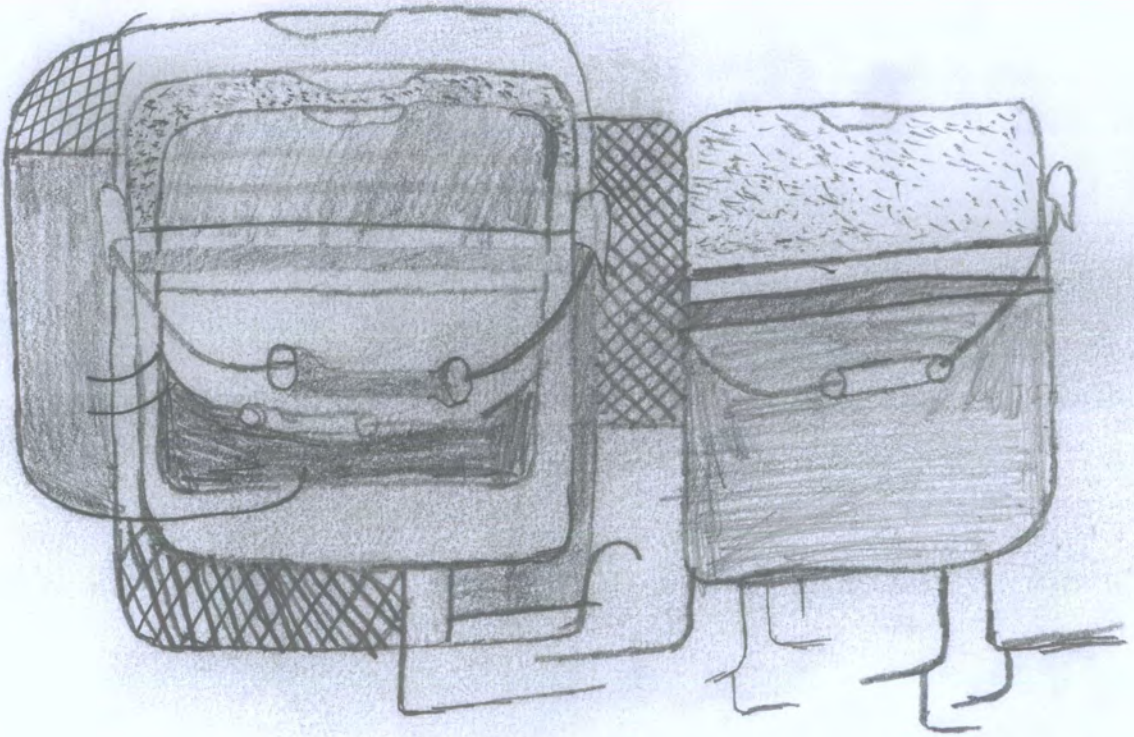
Seth Hatfield
7th

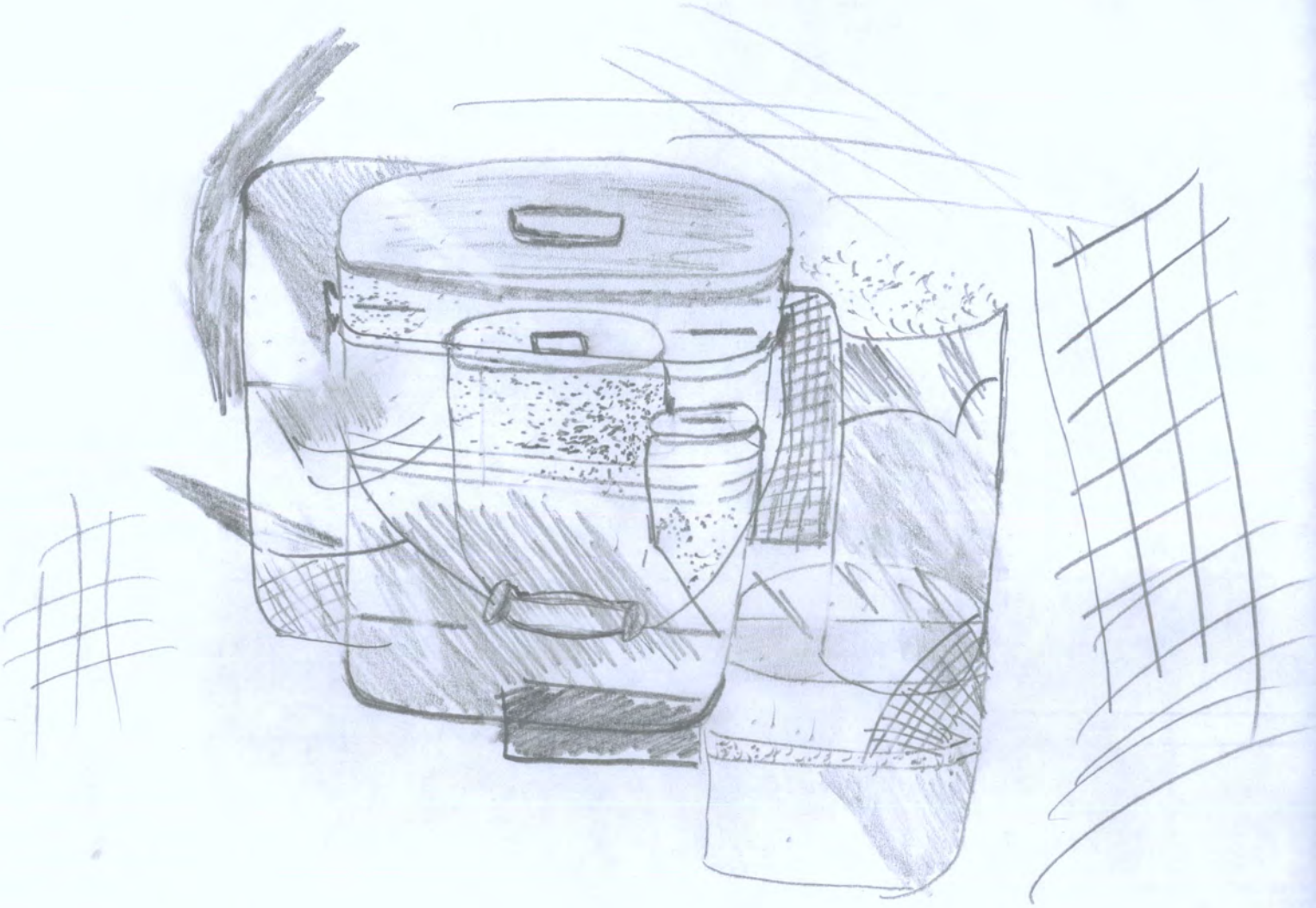
CEDAR

20 Years of
Coal Education

Breanna

Raleigh Williams



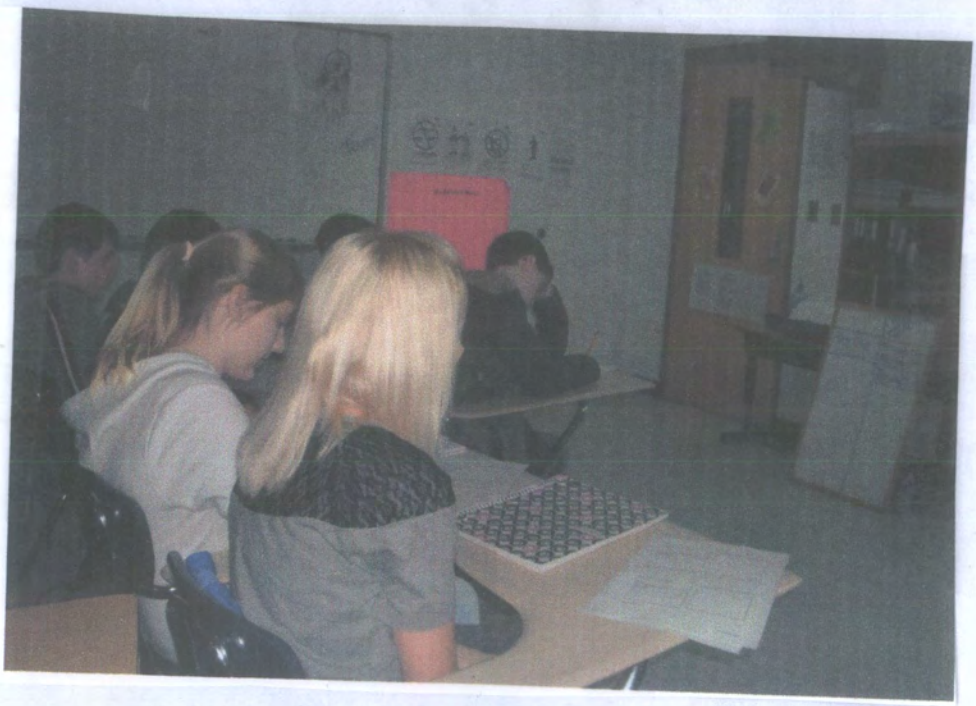


Madison Mullins

Vocabulary Check

Students demonstrated knowledge of critical vocabulary by using a graphic organizer.

Impediment
Carbon Footprint
CTL
Carbon Emissions



Name: Braeden Ward Period: 6th Week: 1/6/2012

Word / Part of speech

Impediments

Definition Something that impends a hindrance or obstruction

Drawing or Symbol for the Word

Sentence They are three Impediments to build CTL plantes. IE: Carbon FootPrint The oil price uncertainty and the cost of building a CTL plant.

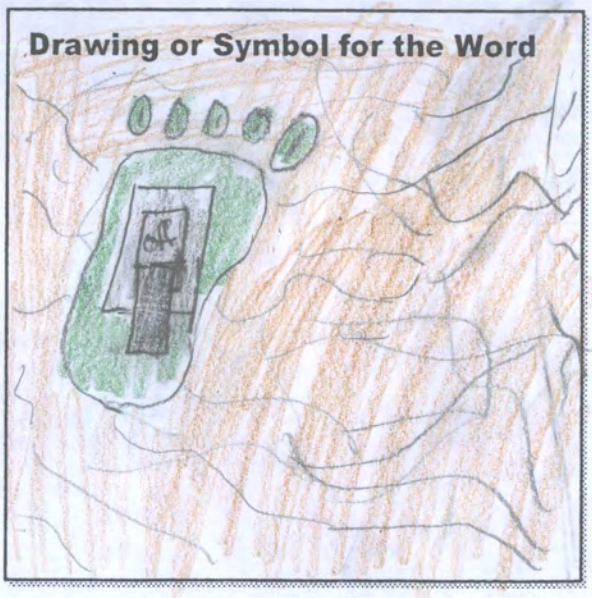
Key.

Word / Part of speech

Carbon Footprint

Definition The amount of carbon dioxide emitted due to the consumption of fossil fuels by a particular person group.

Drawing or Symbol for the Word



Sentence lets all work together to reduce our carbon footprint.

all

Name: Josh-william Period: 6th Week:

Word / Part of speech

CTL - Coal-to-liquid

Definition noun

converting coal to liquid fuel.

Drawing or Symbol for the Word

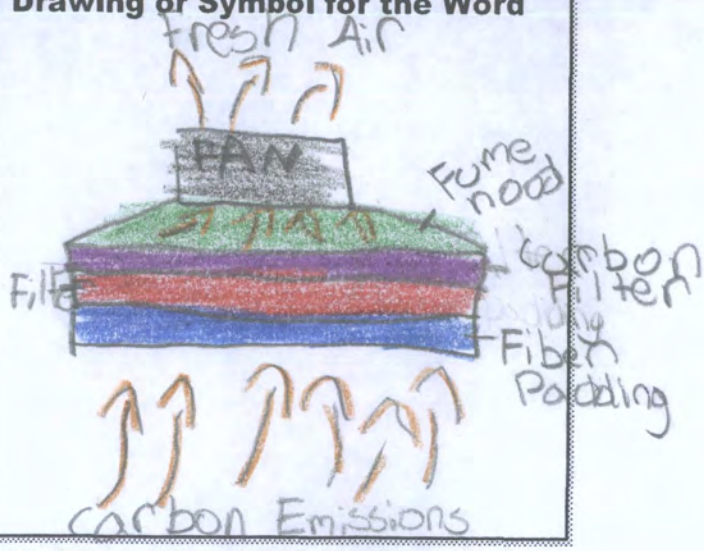
Sentence Kentucky must find funding for CTL Plants and technology to reduce carbon emissions.

Word / Part of speech

Carbon Emissions

Definition Green house gasses that are realed into the atmosphere by fossil fuels.

Drawing or Symbol for the Word

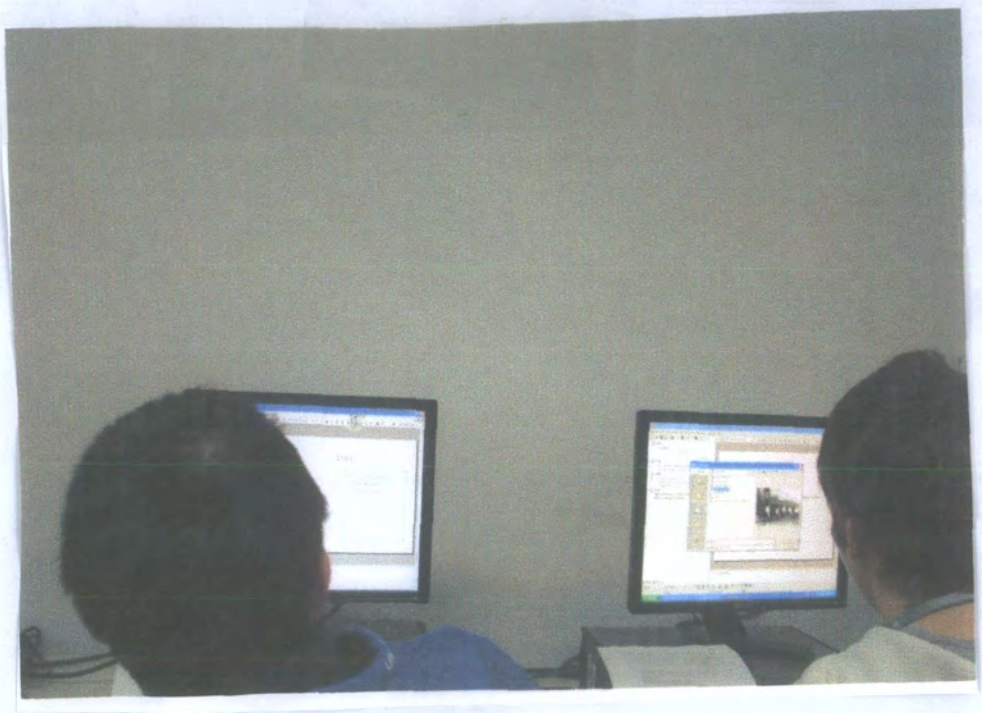


Sentence The Government and coal industry must develop a plan to reduce carbon emmissions.

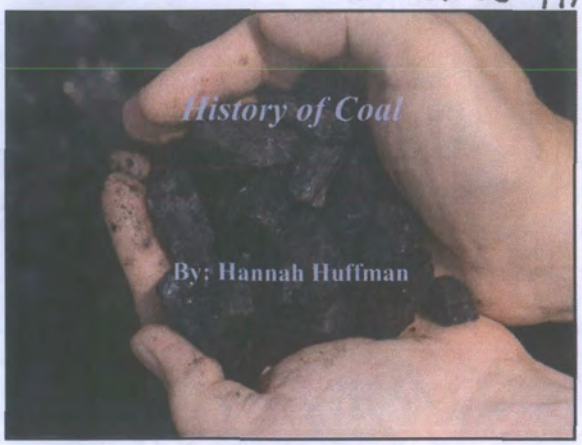
Technology

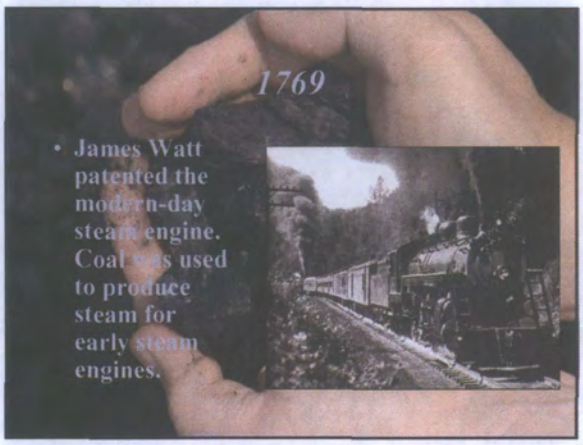
Students had the opportunity to collect and analyze information from the Internet, communicate it effectively, and assess the future of the coal industry to our economy.

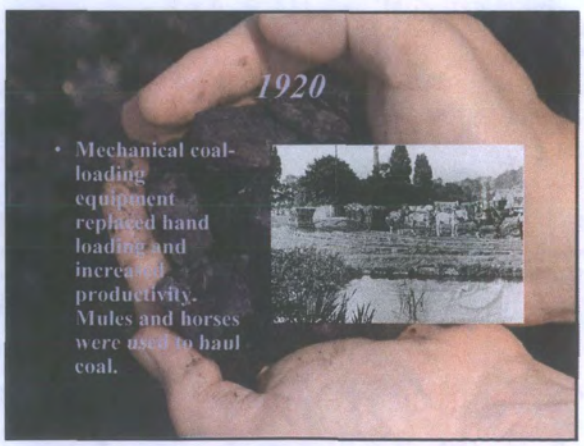
Social Studies: Students viewed a coal rally on youtube, examined forms of protest, wrote their own blog about conserving energy and how it relates to the coal industry. For struggling students to understand the impact of the coal industry on the United States they created a visual power point outlining the history of coal. Also, students completed research on CTL technology and nuclear energy. Then wrote persuasive speeches for or against the uses of CTL or nuclear energy.



Showed Knowledge of Timelines

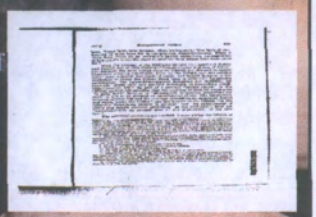






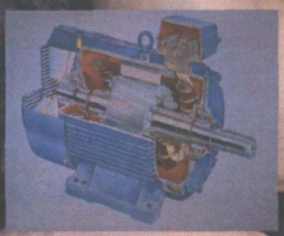
1952

- Congress passed the Federal Coal Mine safety act of 1952 which increased the number of safety inspections in mines.



1961

- Coal became the major fuel used by electric utilities in the U.S.A to generate electricity. Today, it is still the leading fuel electricity generation.



1993

- *1993*
- CEDAR, Inc. (Coal Education Development and Resources) formed in Pike County.

Coal

Good Job!

Coal!

By: Owen Bartley

1750!

- Dr. Thomas Walker was the first person recorded to have discovered coal and used it in Ky.

1890:

- United Mine Workers of America formed. Machines to undercut coalbeds are developed. 5,00 kilowatt steam turbine generates electricity.

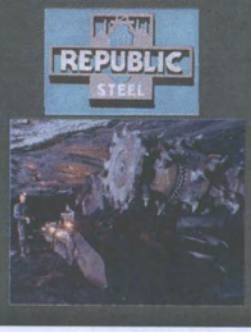
1910:

- The U.S. Bureau of Mines was created. Their goal was to reduce mining accidents.

1920:

- Mechanical coal loading equipment is created to replace hand loading and increase productivity. Mules and horses were used to haul coal.

1942:



- Republic Steel Company's first production – Road Creek, Ky. Continuous underground mining systems developed.

1952:

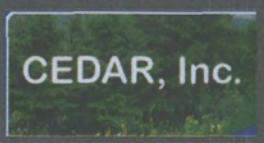
- Congress passed the Federal Coal Mine Safety Act of 1952 which increased the number of safety inspections in mines.

1961:

- Coal becomes a main source of electricity in the USA. It is still a leading electricity provider today.

1993:

- CEDAR, Inc. (Coal Education Development and Resources) formed in pike county.



2004:

- Governor Fletcher unveils Kentucky's first comprehensive energy strategy, "Kentucky's Energy: Opportunities for Our Future"

2011:

- Although the coal industry is regulated by federal and state government, and our streams and environment has been protected, the fate of the industry looks bleak. The mining safety records are better than farming and ranching. The coal industry is not just big business, but is the lives of many people who depend on coal for employment and electricity for their homes and/or business. These many faces of coal are willing to work with government agency to reduce our carbon footprint through clean coal technologies. Don't make coal mining a dinosaur of the past, but let the coal industry shine a light into the next century through C-T-U.

Evaluation: Coal and our Water Systems Student ✓ Teacher_____

1. What was your favorite hands-on activity? Check one

A. Interactive web-sites (Classified Ads) B. Cubism Miner's Bucket

C. Streams Analysis

D. _____ your choice

2. Why did you pick the answer in Number 1?

It was a great hand on activity and I assisted the lower grades with water analysis. It was remarkable of how hard our streams were.

3. Did the unit provide many resources that let you and your group come to solutions for problems faced by the Mining Industry? (YES) NO

Explain answer: It was very rewarding to know our streams are healthy for aquatic life. The coal industry and government agencies work together for a healthy enviornment.

4. What was your least favorite part of the unit?

Open Response because I had to use very specific vocabulary.

5. How would you have changed the unit?

I would have liked to collect more water samples for testing.

6. What would you like to study for next year's unit?

How our water sheds affect our tap water? Does mining affect our tap water?

Evaluation: Coal and our Water Systems Student _____ Teacher ✓

1. What was your favorite hands-on activity? Check one

A. Interactive web-sites (Classified Ads) B. Cubism Miner's Bucket

C. Streams Analysis

D. Speeches your choice

2. Why did you pick the answer in Number 1?

Speeches are not just for politicians but for students to express their ideas effectively.

3. Did the unit provide many resources that let you and your group come to solutions for problems faced by the Mining Industry? YES ✓ NO

Explain answer: Students had the resources and teacher involvement and helped students formulate logical argument.

4. What was your least favorite part of the unit?

Time is always a factor as teachers are involved with high stakes preparation.

5. How would you have changed the unit?

Given longer time for the blog about energy efficiency.

6. What would you like to study for next year's unit?

How drugs affect the coal industry.

School Coal Fair Gave the students a chance to showcase their interest, talents, and skills. On March 22 some students showcased their projects at Open House for parents, visitors, and staff

The COAL FAIR is March 5th at the School.

Students can win ribbons and certificates for good projects.

Projects that win at school, go to the University of Pikeville gym, to compete for prizes and money.

Bring your project to school by March 5th at 8:00 AM to compete.

If you can draw and write, you can participate. You will need to type a report to explain your project. All projects should be about coal mining. Possible areas: Math, Science, Social Studies, Art, Music, and English(poem, short story, play)

Everyone needs to participate. It is a fun way to learn.

Put your name, age, and grade level on the back of your project. Most projects need to be on a poster board.